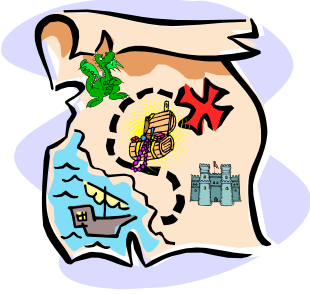




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# SEM Xplorations

## **Be Your Own Boss: Start your own business**

Did you ever think about starting your own business? Starting a business can be fun and financially rewarding if you follow some important steps. This project will walk you through all of the steps necessary for selling a product or service. At the end of this project, you may decide to start your own real working business, or you may decide to do this later in your life. In either case, you will have developed an understanding of how to start a business.



You need to consider some important factors as you think about starting your own business. These factors include your own character, skills and experience; the market for your service or product; and capital, or the amount of money required to start a business.

Start by carefully examining your personality, character, and attitudes. People who are successful in business usually have the following characteristics:

- ✓ They like to be independent.
- ✓ They enjoy working hard when they know they will be overseeing the project and using their leadership skills.

- ✓ They are observant and quick to see opportunities without taking advantage of anyone unfairly.

Make a list of the kinds of products and services you already know something about.

These might include services that you have performed to earn your allowance, such as babysitting or mowing lawns. Or your list could include products you know how to make, such as bookshelves or knitted scarves. It is better to start a business about something you already know and understand. Otherwise, you will have to spend valuable time learning skills and gaining experience in a new field. That can be fun, too, but could delay the start of your business. Try to think of as many services and products as possible. Then narrow your list to those you really understand.

Once you have a list of things you know how to do or make, you need to investigate a market for these services or products. Think of a “market” as the kinds of people who might be interested in your product or service. For example, if you decide to start a babysitting business, your market could include people who live in your area and have small children. Large company executives complete a market analysis before they try to develop new products or services. This means that these companies try to find out if people have a need for the products or services and whether they will buy them. This kind of information is critical in determining the types of new products and services that companies sell.

One way to learn about your market is to design a simple survey about the different products or services you are considering for your business. Then you can distribute the survey to some of the people who would make up your market. Their answers will help you to know

whether the people in your target market (desired market) are likely to buy your products or services, and help you narrow your choices of products or services to offer.

Another good way to find out about your market, especially after you have decided on two or three business possibilities, is to conduct interviews with possible customers. You can use the questions you designed for your survey to help you to get people's opinion. Interviews can provide you with more information than surveys because you are able to ask follow-up questions. For example, a survey might ask homeowners how they get their lawns mowed. The responses would tell you whether the homeowners mow their own lawns or have them mowed by someone else. People's responses to the same question in an interview, however, would give you an opportunity to find out other things as well. The expressions on people's faces can give you an idea of how they feel about mowing their own lawns. This information might be as valuable to you as knowing whether or not they mow their own lawns.

An interview also gives you the opportunity to ask follow-up questions. You can ask people to explain answers that you didn't really understand or to provide more details that will help you decide, for example, how the homeowner feels about cutting grass. An interview is a good way to collect information that you can find out by hearing and seeing the person answer the questions. While a survey of your market should include several potential customers, interviews should be scheduled with only a small group from your market. The people that you will interview should be selected carefully. It is not recommended that you interview your good friends. Why? Unless the products or services your business offers will be made available only to your good friends, this would not be a very representative sample.

The best way to understand a sample of people that could complete your survey or participate in an interview is to think of all the stores in a shopping center. A good sample of

those stores might include a few men's clothing stores, women's clothing stores, children's stores, department stores, jewelry stores, and restaurants. The point of such a sample would be to acquire a clear picture of each type of store that helps to make up the shopping center. If you included only children's stores and jewelry stores, you would not get a complete picture of the shopping center.

A representative sample allows you to find out how different kinds of people feel about something—in this case, about the type of business you want to start. Your sample should include people from as many different parts of your market group as possible. The following example should make this point clear.

**Alex and Stephanie wanted to start a business in their school selling pens, pencils, and other school supplies. They conducted a survey of their market, but believed that they needed more information. They decided to interview a sample of their market about the kinds of supplies that would be purchased if a school store were opened.**

Rather than interview everyone at the school, which would have been impossible, Alex and Stephanie decided exactly what questions they would ask and practiced asking them to each other. Then they decided how many and which people to interview and asked each of them for a short meeting. Their interview sample included students from all grades, boys and girls, and even a few teachers. For each interview, they set a date, time, and place. Alex and Stephanie completed the interviews and then studied the results. They discovered that the interviews provided a lot of information that their survey did not.

While this example summarizes how two students selected their interview sample, you must consider the many small groups that are part of your own market. Make a special effort to

include a few people from each of those groups. After you have thought about your own talents and experience and have collected some information about your market, you should be ready to find some capital for your business. Capital is the money that you need to start your business and keep it operating until it begins to make a profit. Some service businesses don't need capital, but if your business is to supply a product, you have to pay for the supplies you need to get started.



There are a number of ways for students to find capital, but one of the best ways is to prepare a proposal and present it to the person who has control of funds that might be available to you. A proposal explains, in a written or oral (verbal presentation) form, everything your business will try to do. The information should be presented in a manner that is clear and easy to understand.

To prepare your proposal, first decide exactly what your business will do, based on the information about your own skills and about your market group. Your proposal must be specific so that you can explain exactly what products and services your business will offer and how they will be made available.

If you are considering a business that makes a product, you need to think about the following points.

1. What materials will you need to make the product?
2. How will these materials be put together to create the product?
3. Who will actually construct the product?
4. Where will the product be constructed?

5. How will you make sure the product works?
6. What will you charge customers for your product?

If your business will provide a service, you must consider the following questions.

1. What service will you provide?
2. How will it be accomplished?
3. Where and when will it be completed?
4. What costs will be involved? (For example, will you need any special equipment?)
5. How much will you charge your customers for this service?

Now that you have decided exactly what your business will do, the next step in preparing your proposal is to present a clear plan for advertising your products or services. Making a chart like the following one can help you plan your advertising campaign.

Your proposal must explain exactly how much money you need to start your business and keep it going until you begin to earn your own money. To do this, you should list all the different steps you followed as you considered developing your own business and then estimate how much they will cost.

For example, if you decided to start a bicycle repair business, you might begin by listing costs as follows:

**I. Market analysis**

A. Survey-paper, pens	\$5.00
B. Survey- mail, copying	\$5.00
C. Interviews – phone calls	\$2.00

**II. Supplies**

A. Tools	\$15.00
B. Lubricating oil	\$2.00
C. Start-up parts supply- (brakes, tires, etc.)	\$50.00

**III. Advertising**

A. Fliers – paper, markers	\$5.00
B. Fliers – copying	\$5.00
C. Fliers – to place on cars	<u>\$5.00</u>
Total	\$94.00

Be sure to list each of your expenses separately and make sure that each is connected with starting your business. At the end of your proposal, you will have to provide a grand total of your start-up costs so that the person reading or hearing your proposal will understand exactly how much money you need. In your proposal, include a statement that explains why you want to start your business. The results of your market analysis can help to show why your business is needed, so you should summarize these results briefly in your proposal. In your statement, mention your willingness to discuss your business ideas with anyone who will read your proposal, as well as your understanding that you will repay the capital you are borrowing when your business is beginning to generate funds.



# Launching Your Results



Choose an adult to review your proposal. Ask them to consider these questions carefully:

- Does the proposal include all the necessary expenses to start a business?
- Are the proposed costs accurate?
- Does the research you (the student) used to determine costs?
- Is the plan clear?
- Does the written statement explain the need for the business?
- Should the business exist?

Ask if he or she thinks that someone would be willing to fund your business, based on the material you have prepared. Perhaps, he or she will know someone who may be willing to fund your business. If not, how might you fund your business? You might ask someone to give you a loan, in which you borrow money temporarily, and pay money back in installments. You could get a business partner and split the cost of business start-up (just remember that you'll have to split your profit too). Sometimes asking others for ideas could help as well.

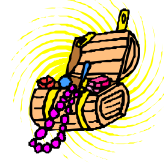
Once you have funding, it's time to decide the best place for your business to be located, and you can begin to purchase the supplies to get you started. Sometimes permits are needed to sell goods in public places, so be careful to stick to town laws. You might want to visit your local town hall to find out where you can sell your product and if any permits are required. Next, decide on a start date for your business and create signs to advertise your business location and information about the product you are selling. Remember to include contact information, either an email address or phone number, so people can reach you, if necessary. Ask an adult to review

your work before you make copies. Post your advertisements in places where future clients, people who will use your services, gather, because the more carefully you advertise, the more successful your business will be! So take your time and plan carefully. Good luck!

After your business is opened for a few days, remember to take inventory of your supplies to see if more need to be purchased. Also, see if you can advertise in any new and different ways that might attract more people to your business. You will want to reevaluate your prices to see if they are appropriate as well. You may consider raising or lowering prices depending on how well your business is going. The most important lesson to remember is that customers like friendly and honest businesspeople. Be sure to treat your customers the way you want to be treated so they will continue using your services and speak well of your work.

Business isn't easy! But work hard and you will find the experience of running a business very rewarding and educational. Following are some websites and books that will help to get you ready.

# Treasure Chest of Tools



## Non-Fiction

- ✓ **The Kids Business Book** by Arlene Erlbach (Lerner Publications, 1998). ISBN: 0822598213  
Any kid can start his or her own business! Here you can read about students ages 7-12 who have turned their interests and talents into profitable businesses.
- ✓ **Better Than a Lemonade Stand** by Daryl Bernstein (Beyond Words Publishing, 1992). ISBN: 0941831752  
Along with specific business ideas ranging from cleaning things to profiting from a special talent, fifteen-year-old Daryl Bernstein introduces the general information and skills necessary for running a successful business. Tips on keeping consumers happy, setting a selling price, and handling loans are all included.
- ✓ **The Totally Awesome Business Book** by Adriane G. Berg and Arthur Berg Bochner (Newmarket Press, 2002). ISBN: 1557044945  
What a young person needs to know about starting up a business, how much money can be made from it, and the steps to do the work. Includes 20 super businesses (lemonade stand, lawn mowing, garage sales) to start right now. It also covers ten basic business skills, including speaking up for what you want, budgeting, recordkeeping, researching and filing, telephoning and emailing, negotiating, marketing, and working with others—even your parents!
- ✓ **The Totally Awesome Money Book For Kids** by Adriane G. Berg and Arthur Berg Bochner (Newmarket Press, 2002) ISBN: 1557044937.  
Written by a kid (with his mom) for kids 10-17, this book is full of cartoons, drawings, quizzes, games, riddles, stories to help you learn the basics of saving, investing, borrowing, and taxes. It also aims to teach you how to get what you want, how to bargain, and how to talk to business partners and parents.
- **How to Be a Teenage Millionaire** by Art Beroff and Terry Adams (Entrepreneur Press, 2000). ISBN: 1891984179.  
Anna and Sarah Levinson were just 14 and 18 when they brewed their first batch of homemade nail polish and began peddling it to local boutiques. Today, their Ripe brand of cosmetics is carried by retailers from Nordstrom to Urban Outfitters. John

Magennis was only 14 when he started his Web design company Internet Exposer. In just three years his after-school hobby grew into a \$500,000 a year business.

## Fiction

- ✓ **Caps for Sale: A Tale of a Peddler, Some Monkeys and Their Monkey Business** by Esphyr Slobodkina (HarperTrophy, 1987). ISBN: 0064431436  
*Caps for Sale* is a classic, in print for over fifty years, and loved by generations of readers. This easy-to-read story about a peddler and some pesky monkeys showcases a very *uncommon* business problem!
- ✓ **Twists and Turns** by Janet McDonald (Farrar, Straus and Giroux, 2003). ISBN: 0374399557.  
This book is about two friends who capitalize on their talents by opening a hair salon in their run-down Brooklyn housing project.
- ✓ **Rising Tide** by Jean Thesman (Viking Juvenile, 2003). ISBN: 0670036560.  
In 1908, Kate and Ellen set up their own business and begin to sell handmade Irish linens to a select San Francisco clientele. Little did they know the problems they would have!



## Internet

- ✓ **[The Lemonade Stand-Interactive Version](http://www.lemonadestandgame.com/)**  
<http://www.lemonadestandgame.com/>  
Try owning your own virtual lemonade stand and see how your business planning pays off. Your goal is to make as profit as you can in 30 days. The program analyzes your performance each day.
- ✓ **[Money Station](http://www.moneyfactory.com/kids/start.html)**  
<http://www.moneyfactory.com/kids/start.html>  
Learn valuable tips about money including security features and identifying counterfeit bills. This site has four games that test your knowledge of money, in addition to fascinating information about the \$5, \$10, \$20, \$50 and \$100 bills.
- ✓ **[The Lemonade Stand](http://www.teachingkidsbusiness.com/lemonade-stand.htm)**  
<http://www.teachingkidsbusiness.com/lemonade-stand.htm>  
This site gives step by step instructions to show how to create a profitable real-life lemonade stand. It is complete with business and advertising advice and is sure to help plan any future business endeavor.

### *Special Programs*

✓ **Junior Achievement**

<http://www.ja.org/home.asp>

Request that your school become a Junior Achievement school! These schools are trained to encourage entrepreneurship and to teach about business and economics to K-12 grade students. Keep your eye on the contests, special events and after school programs being offered.

✓ **Kid Power Xchange**

<http://www.iqpc.com/cgi-bin/templates/single.html?topic=445>

Find out about the latest conferences, awards and guest speakers who support kids in business around the country

### *Contests*

✓ **The Lemonade Stand Contest**

<http://www.teachingkidsbusiness.com/lemonade-stand-contest.htm>

Try selling your own lemonade and see how much money you can make! This site gives details for students to submit photos and the story of how your business went.



## SEM Xplorations

### Become a Cultural Anthropologist:

#### Explore Other Cultures From Your Own Hometown!

Did you know that there are many words in the English language that originally come from other languages? For example, the words “umbrella” and “broccoli” are Italian; “ski” is Swedish; and “tea” and “cash” are Chinese. One of the reasons there are so many words in the English language that are actually from other languages is because modern communication and travel have made it possible for people throughout the world to learn about and take part in other cultures. Would you like to learn about the ways different cultures impact our daily lives? You can begin this journey by researching a culture and keeping a cultural journal about what you discover!



**Culture** refers to every aspect of the way people live. To investigate a culture, you should learn about how people speak, what they eat, what they wear, how they build and decorate their homes, and what they do for fun. These are all subjects that a **cultural anthropologist** studies. **Cultural anthropology** is the study of people’s customs in different parts of the world. You can learn the methods used by cultural anthropologists to find out about people from any culture that interests you. Examples include Spanish, Italian, Korean, French, and Scottish cultures, as well as many, many more!

If you and your family are from a particular culture, this project can be a wonderful way to learn about your own heritage. You can also study another culture that interests you. If you would like to study a culture that you are not very familiar with, you may find it helpful to read about the customs of a few other cultures to see if one strikes your interest. A couple of good books to look for are:

**Children Just Like Me** by Susan Elizabeth Copsey and Barnabus Kindersley (Dorling Kindersley Publishing, 1995).

ISBN: 0-7894-0201-7.

*The author of this fascinating book met children from every continent and more than 140 countries to find out how they lived, played and worked in their cultures. Lots of pictures and useful information make this book informative and fun.*

**Children from Australia to Zimbabwe: A Photographic Journey Around the World** by Maya Ajmera, et al. (Shakti for Children, 2001).

ISBN: 1-5709-1478-8

*Visit 25 alphabetically ordered countries in this colorful book. For each country, you will find information about its children, language, sports and more.*

It might also be helpful to do some research on the Internet. Here are some websites that might help you:

**Kidspace @ The Internet Public Library: Culture Quest World Tour**

[www.ipl.org/div/kidspace/cquest/](http://www.ipl.org/div/kidspace/cquest/)

*Take a virtual worldwide tour of multiple cultures, learn to introduces yourself in multiple languages, and learn about the holidays, games ,and recipes of new cultures!*

**Peace Corps Kids World**

[www.peacecorps.gov/kids](http://www.peacecorps.gov/kids)

*Explore many cultures around the world and learn about the Peace Corps' work in these countries.*

Once you have found a culture that interests you, you are ready to start your research as a junior cultural anthropologist!



## Getting Started

Use a notebook or three-ring binder as your cultural journal and record in it all of the information you collect. The information you keep in your journal will probably come from a variety of sources. Before you begin your research, here are some terms you should know.

- *Almanac* – a book of miscellaneous facts, including statistics on populations
- *Atlas* – a book of maps
- *Census* – an official population count
- *Data* – information
- *Demographics* – statistics about populations (births, deaths, marriages, and so on)
- *Linguistics* – the study of language

A great almanac to try is:

**The World Almanac for Kids** (World Almanac, annual).

ISBN: 0-8868-7902-7

*Among other sections, this book has a chapter dedicated to the nations of the world. In it you will find information about kids in all different countries, governments, maps and flags, and other facts.*

A good research resource you might not know about is a book called:

**Find It Fast, 5<sup>th</sup> Edition: How to Uncover Expert Information on Any Subject Online or in Print** by R.I. Berkman. (Harper Resource, 2000).

ISBN: 0-0627-3747-3.

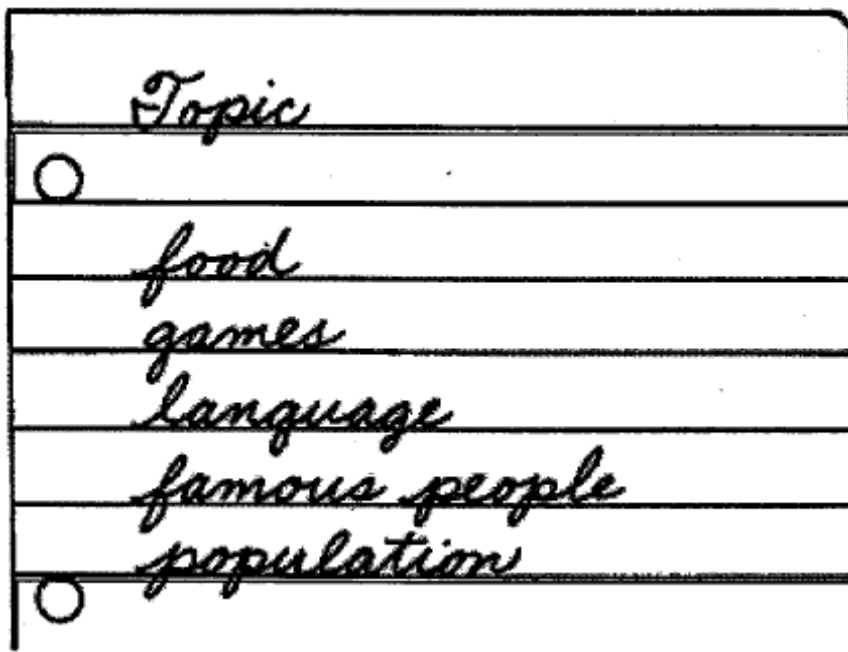
*This book tells you where to look for information about specific topics. Included is information about using libraries, the Internet and government resources. In addition, it provides tips for finding and speaking to experts on any topic. This book takes research to a new level!*



**Topics:**

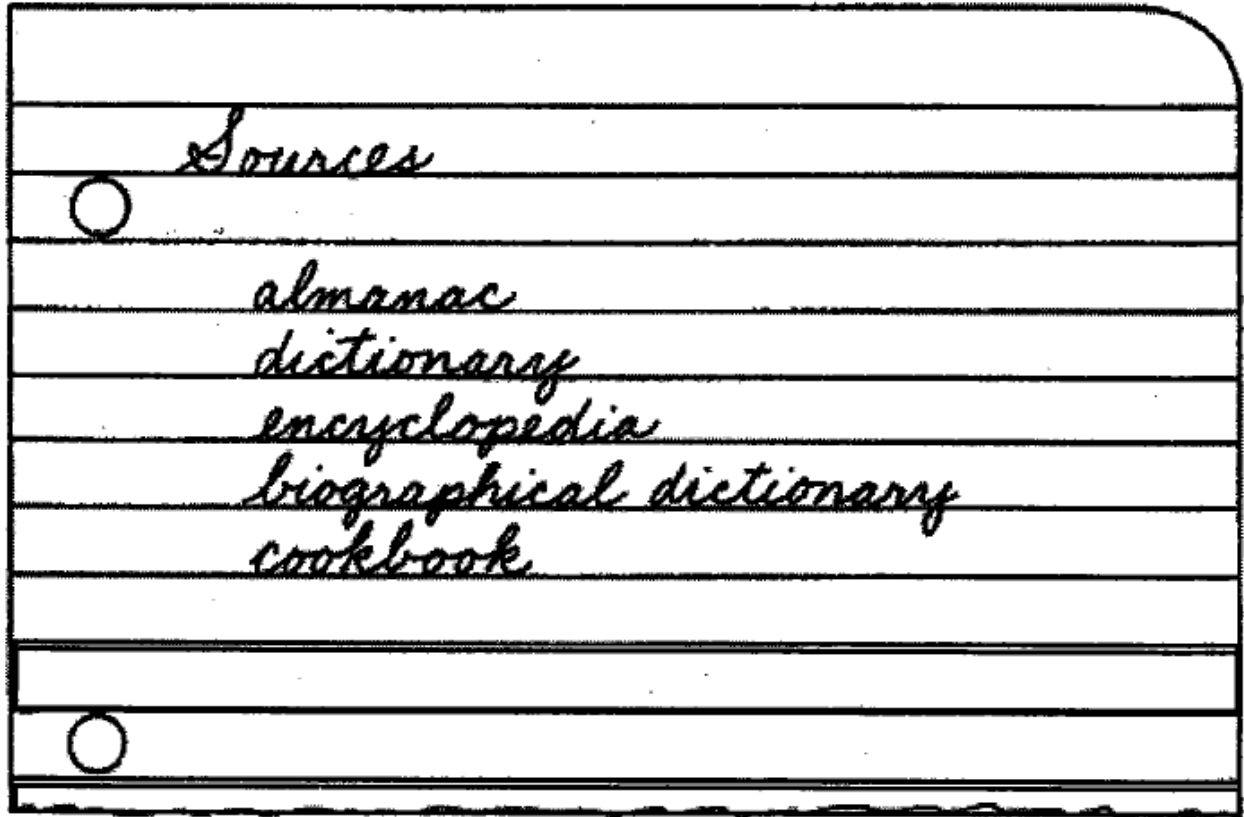
A good way to begin is to brainstorm a list of topics that interest you about the culture you want to study. Remember, when you brainstorm, you want to write down all your ideas, no matter how silly or strange they sound. You need a lot of ideas so you can pick the best ones later.

Make your brainstorming list on a page in your cultural journal. Here are some ideas to help you begin.



**Sources:**

Now look at your list of topics and think of sources that might give you information on those topics. On another page in your cultural journal, list all the sources that you think you can use. The following examples will help you begin.



The Internet is another great source of information. Remember, when researching questions about topics such as the population of a culture, it is probably best to use almanacs and other printed sources. However, websites may help you understand what it's like to live in a particular culture. Use a search engine like [www.yoohooligans.com](http://www.yoohooligans.com) to help you find sites about the culture you are studying.

### **Investigating Your Topics**

Divide your cultural journal into sections, one for each topic you want to study. Begin your investigation by selecting one of the topics and asking a question about it. Where and how will you find the answers?

## **Library Research:**

The library is a good place to start your research. Go back to your list of sources and decide which ones are most likely to have information on your topic. Record in your journal the information you find.

Here is an example of how one of your journal pages might look if you were studying Spanish cultures:

### **Topic: demographics**

Question: How many people from Spanish cultures live in the world today?

Source: The World Almanac

Data:

1. The number of people in the world who speak English as a main language:  
420,000,000
2. The number of people in the world who speak Spanish as a main language:  
296,000,000
3. The total number of people in the United States of America: 240,000,000
4. The total number of people in the United States of America who are from Spanish cultures: 14,609,000
5. The number of Spanish-speaking people in the United States of America: 11,116,000

The data, or information, you have gathered may make you think of other questions. In which countries do people speak English as the main language? In which countries do people speak the language spoken in the culture you are researching as the main language? What other questions about your culture's demographics might you ask?

If you were studying Spanish cultures, you would discover that people from nearly twenty countries speak Spanish as their main language. A general term for Spanish-speaking people is *Hispanic*. The word *Hispanic* is more broadly used to tell about people who are from Spanish, Portuguese, or Latin American cultures. How many Hispanic people live in your state, city, or town? Where would you find this information? When did Hispanics first arrive in your community? Which country or countries did they come from? Why did they move? These are all good questions to ask about the culture you are studying.

Sometimes, when you are looking for information to answer a research question, you come across other interesting facts. For instance, while browsing through the almanac for demographic statistics about people from Spanish cultures, you might discover a paragraph about robots.

What should you do if you're fascinated by this information about robots? Don't switch research topics now. Just copy the information and source, including the page number. Place it in a special file marked Future Fascinations or Probable Projects (or another name you come up with on your own) to study later. You may soon have a very thick folder, and you will always know where to look for new ideas!

### **Other Research:**

Here are some different ways to gather information about people from other cultures:

- Speak to people from that culture. If you are studying your own culture, do not forget that you and your family can be sources, too!
- Observe people from that culture.
- Observe the environment for clues about the culture

If one of your topics is linguistics, you can observe the environment for clues about words from the culture you are studying in the English language. For example, many Spanish words end in vowels. The two most common endings are *a* and *o*. If you were studying Spanish cultures, you could think of words that end in these letters and look in the dictionary to check if they are originally Spanish. Once you have discovered clues that help you know that a word in the English language is originally from the language of the culture you're researching, be sure to check for the word's origin in the dictionary before you include it in your journal.

Here is how your journal entry might look:

Topic: linguistics

Question: Which words presently in the English language are originally Spanish?

Sources: a dictionary, any words that come to mind, words that other people suggest, a teacher of Spanish, a map

Data:

Word	Classification	Meaning
New Mexico	geographic area	the name of a state, "new" and "Mexico" from the name of the Aztec war god, Mexitli
Arizona	geographic area	the name of a state, meaning "arid zone"
Colorado	geographic area	the name of a state, meaning "colorful country"

Word	Classification	Meaning
taco	food	snack
poncho	clothing	usually a "blanket," often with a hole in the center for the head or worn over the shoulders
hacienda	housing	"farm house," "estate," "property"
rodeo	entertainment, sport	meaning "going around in circles as at a round up," a sport showing the skill of horse riders and cattle breeders
fiesta	holiday, celebration	a party
bravo	exclamation	"brave," "courageous," "excellent"

Here are some other sources you can use to find words from the culture you are studying that are also used in English:

- Look at the names of products in stores.

- Talk to a person who speaks both the language of the culture you are studying and English.
- Search the Internet using a search engine like [www.ajkids.com](http://www.ajkids.com), or go to [Kidspace @ The Internet Public library \(www.ipl.org/div/kidspace\)](http://Kidspace@TheInternetPubliclibrary.com) and click on “Say Hello”.

As you investigate the other topics on your list – such as food, clothing, architecture, or art – add new pages to your cultural journal.

## Launching Your Results

After you have finished gathering data in your journal, read over the information that you have collected. Summarize your findings on another page in your journal. Then decide how you want to report your results. Here are some suggestions for sharing your research. You may think of others!

- Write and direct a short play about the culture you studied and its heritage in your community.
- Write and illustrate a children’s book about the culture.
- Organize a traditional social gathering of the culture you studied at your school to introduce students to the customs of that culture, including music, fashions, and food.
- Write a brochure describing the history of the culture in your state or community.

Of course, you can use the same research methods to study other cultures. You can make a cultural journal about any group that interests you. There are so many fascinating cultures in the world! Now you can explore them!

# Treasure Chest of Tools



**Children Just Like Me** by Susan Elizabeth Copey and Barnabus Kindersley. (Dorling Kindersley Publishing, 1995). ISBN: 0-7894-0201-7

**Children from Australia to Zimbabwe: A Photographic Journey Around the World** by Maya Ajmera, et al. (Shakti for Children, 2001). ISBN: 1-5709-1478-8

**The World Almanac for Kids** (World Almanac, annual). ISBN: 0-8868-7902-7

**Find It Fast, 5<sup>th</sup> Edition: How to Uncover Expert Information on Any Subject Online or in Print** by R.I. Berkman. (Harper Resource, 2000). ISBN: 0-0627-3747-3.



## Internet

**Kidspace @ The Internet Public Library: Culture Quest World Tour**  
[www.ipl.org/div/kidspace/cquest/](http://www.ipl.org/div/kidspace/cquest/)

**Peace Corps Kids World**  
[www.peacecorps.gov/kids](http://www.peacecorps.gov/kids)





## SEM Xplorations

### **Become a Nature Detective: Study Animal Tracks**

Have you ever walked through a forest that you know is home to many animals, but seen one or two birds or squirrels? Have you ever noticed that birds tend to fly away if you get close to them? If you have observed these animal behaviors, then you probably have an idea of how difficult it is for people to study animals in the wild. Animals that are **nocturnal**, or most active at night, are particularly challenging for people to study. It isn't easy to see animals that come out only at night, is it? (If you're interested in finding out more about nocturnal animals, check out this website):

#### **Nocturnal Animals: All About Nature**

<http://www.enchantedlearning.com/coloring/nocturnal.shtml>

*Did you know that cats and alligators are primarily nocturnal? Discover facts about many animals that you probably never knew were nocturnal!*

If animals tend to run away when humans approach them, and if some animals only come out at night, how do you think people learn about them? People who study animals often follow the animals' **tracks** to uncover information. An animal's tracks are the footprints it leaves in the dirt, sand, mud, or snow as it goes about the business of surviving. Each animal has its own special track that can help people figure out what kind of animal made it. Tracks may also tell an animal's size, weight, and how fast it was moving.

Look at these two tracks.



Now think about what you know about bears and possums. Which track is the bear track?

Which track is the possum track? How do you know? Some tracks show that the animal has pads on its feet. Some tracks show that the animal has hooves. Others show the marks of claws.

What did you see in the above-pictured tracks?

Animal trackers don't only identify which type of animal track they find, they also uncover what the animal was doing when it left the tracks. This is one way to learn more about the behavior of an animal. Trackers are a little like animal detectives. If you think it would be interesting to become an animal detective, keep reading to learn how!



### **Observing Animal Tracks**

Wouldn't it be exciting to find real animal tracks? You can begin your search by finding a book or guide that shows pictures of each animal and the tracks it makes. When you find tracks in the woods or in a field, you can measure them, count the number of toes, and look for claw marks. Then you can find a picture of the track in your book and find out what kind of animal left the track. To find a guide, look in your school or local library's card catalog or

library database for subjects such as *animal tracking* or *mammal tracking*. You might also look at your local nature center. Some books and guides about animal tracking are:

**Tracking & the Art of Seeing: How to Read Animal Tracks & Sign** by Paul Rezendes (Harper Resource: 1999).

ISBN: 0-0627-3524-1.

*Explore the habitat and behavior of more than 50 animal species. This book shows how to identify animals by their tracks, droppings, tail patterns, scratches, dens, and other signs.*

**Field Guide to Mammal Tracking in North America** by Jim Halfpenny (Johnson Books: 1986).

ISBN: 0-9334-7298-6.

*This guide will help you identify and interpret animal tracks.*

**Field Guide to Tracking Animals in Snow** by Louise R. Forrest (Stackpole Books: 1988).

ISBN: 0-8117-2240-6.

*Browse through this book's many illustrations to learn how to identify animal tracks in winter.*

**A Field Guide to Animal Tracks** by Olaus J. Murie. (Houghton Mifflin Co.: 1998).

ISBN: 0-3959-1094-3.

*Learn the habitats, behaviors, tracks, and signs of every mammal in North America. Includes multiple illustrations to aid in your identification of tracks.*

You might be able to find information about animals and animal tracks on the Internet. Two interesting sites are:

**[Bear Tracker's Animal Tracks Den](http://www.bear-tracker.com/)**

<http://www.bear-tracker.com/>

*Find information about and pictures of animals and their tracks, as well as links to other sites that might help you.*

**[Ranger Rick: Whose Track Is That?](http://www.gradewinner.com/p/articles/mi_m0EPG/is_n1_v31/ai_18973170)**

[http://www.gradewinner.com/p/articles/mi\\_m0EPG/is\\_n1\\_v31/ai\\_18973170](http://www.gradewinner.com/p/articles/mi_m0EPG/is_n1_v31/ai_18973170)

*Learn to read animal tracks to figure out what kind of animals passed by—and maybe even what they were up to! Here are some clues to help you.*



Where can you find real animal tracks? If you have seen animals around your school playground or in a nearby park or woods, these would be good places to start. Before you go looking for tracks, discuss your plans with a parent or teacher. An older child or grown-up should go with you on your hunt for tracks. If you have not seen animals, look for places they may travel – along a fence at the edge of a field, or near a stream or pond. Unless there is snow on the ground, think of a place where there is soft dirt, sand, or mud. When looking for tracks, be careful not to step on any!

If you are lucky and find some tracks, examine them closely. Use a magnifying glass if you have one. If you find one footprint, look for others like it. Which way did the animal go? Where did it come from? Use your animal-track identification guide to figure out what animal made the tracks. What do you think it was and how do you think it was moving?

### **Interpreting Animal Tracks**

How can you find out whether an animal was walking or running when it made its track? Many track guides show several sets of tracks for the same animal. Each set shows the animal moving in a different way. You can measure the distance between the individual paw prints you find and compare them. An animal that is walking makes tracks that are closer together than the same animal when it's running.

Try experimenting with your own footprints. Look at the tracks you leave when you walk across a snowy field, a wet beach, or dry sand in a box and compare them to the tracks you make when you run. Are the individual prints in one set farther apart than in the other set? Were you walking or running when you made this set?

Sometimes an animal's tracks give clues to where it lives. Suppose several sets of the same kind of tracks lead to a tree and then disappear. Where do you think the animal or animals that made the tracks might have gone? Do you think they might live in a tree? The following game might help you to understand how to interpret animal tracks.

### **Playing a Track Identification Game**

To help you practice looking for details in each set of tracks you find, play this identification game with some friends.

*What you will need:*

- Three or more players
- A walking field: this can be a large sand box, a wet sandy beach, a snow-covered field, or a muddy pathway

*The purpose of the game:*

Figure out who made sets of tracks or footprints and where the person was going.

*How to play:*

1. Gather the players beside the walking field.
2. Have everyone look at their own and everyone else's shoe or boot soles. Notice the different sole shapes, sizes, and treads or patterns.
3. Have players walk around the walking field for several minutes. Ask them to be careful not to step on other players' tracks.
4. Call the players out of the walking field and take turns telling who made the different sets of tracks and where they were headed when they made them.

## **Making Your Own Animal Tracks**

You can make your own track prints and stories to show to others and help them identify animal tracks.

### **How to Make Track Prints**

*Materials you will need:*

- An animal-track identification book
- A large sheet of plastic foam from a hobby supply store
- A ruler
- A dull pencil with an eraser
- One of two flat-sided, rectangular erasers (the kind used to erase pencil marks)
- An ink pen or ball-point pen

*Steps to Follow:*

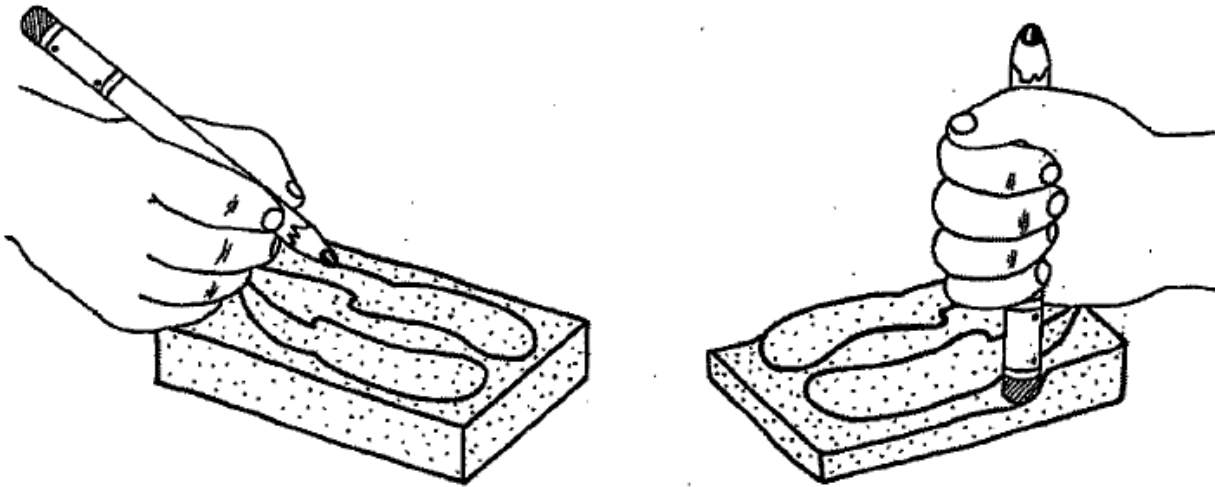
1. Look through the track identification book you have chosen to use. Find the tracks of eight or ten animals that live in your state. You may want to choose tracks of some big animals and some small ones. List the names of the animals that make those tracks.
2. Beside each animal's name on your list, write the size of its track. Be sure to notice that for some animals, front and back paw tracks are different.
3. Look carefully in your track book at the shape of one of the larger tracks you have chosen.
4. For each track or set of tracks you want to make for larger animals, measure and cut a block of plastic foam just a little larger than the track size. Plastic foam cuts

easily with a table knife, but you should ask a parent or teacher for help with this step.

5. With a dull pencil, draw the outline of the track on the block of plastic foam.

Then use the eraser on the end of the pencil to gently push down the plastic foam in any part of the track that you don't want to show when you print it on paper.

These pictures show you how to make your foam block:



6. To make the tracks of small animals and birds, draw the track on a rectangular eraser. Use a pen to draw over the outline of the track and fill in the shape. Be sure you have lots of ink on the eraser tracks.

7. Several track prints can be made after one inking. Re-ink the same track shapes when the prints on the paper begin to look faded.

### ***How to Make Track Stories***

*Materials you will need:*

- An animal track identification book
- Chart paper or roll paper

- Scissors
- Poster paint
- A shallow pan such as an aluminum pie pan
- The plastic foam and eraser tracks you have made

*Steps to Follow:*

1. Use the track book to find out how far apart each animal's tracks are when it walks, runs, hops, or jumps.
2. Cut off one length of paper for each animal. The strip should be long enough to show six to ten sets of tracks for that animal.
3. Make prints from your plastic foam blocks by doing this:
  - Decide where you want to place each print on the paper. Is the animal running, walking, hopping, or jumping?
  - Make sure you're in a place where it will not matter if you spill paint.
  - Pour some poster paint evenly into the bottom of the shallow pan.
  - Carefully dip a plastic foam animal track into the paint. Don't press too hard! Press the paint covered track shape onto the paper.
  - Lift your track straight up and carefully to keep the print from smudging.
  - Make more tracks on the same strip of paper. Remember, your animal has four feet and sometimes the front feet are different from the back feet.
4. Make prints with your eraser tracks by doing this:
  - Decide where you want to place each print on the paper. Is the animal running, walking, hopping, or jumping?
  - Re-ink the prints you made before so the ink is wet.



- Press the inked side of the eraser onto the paper firmly and lift it off carefully.
- If the track isn't dark enough, go over the track on the eraser again with ink.

Now you can tell a story with your track prints. Did your animal walk or run? Where did it go? Maybe your track story will show that two animals met and one of them ran away! It's your track story, so it's up to you! Now you are ready to make an animal track guide to help other students read your track story!

### ***How to Make an Animal Track Guide***

#### *Materials you will need:*

- Several sheets of white construction paper
- Poster paint
- A shallow pan such as an aluminum pie pan
- Your plastic foam and eraser tracks
- A pencil, crayon, or marker
- A stapler

#### *Steps to follow:*

1. Using the foam and eraser tracks you made, on construction paper, make one extra set of track prints for each animal.
2. Print the name of each animal above its tracks.
3. Ask a parent or teacher to help you staple the dried print pages together into your Animal Track Guide.

This is just one way to make an animal track guide. What other ways might you make your animal track guide uniquely yours? Here are some books that might help you think about another way of putting your guide together:

**Cover to Cover** by Shereen LaPlantz (Sterling Publishing, 1995).

ISBN: 0937274879

*This guide is filled with creative ideas for making books. You can choose to make a basic book, or pick something more unique. Either way, you will find step-by-step instructions to help you through the process.*

**Making Books by Hand** by Mary McCarthy & Philip Manna (Quarry Books, 2000).

ISBN: 1564966755

*Illustrated step-by-step instructions show book lovers how to make their own journals, scrapbooks, and more.*

You can find some bookmaking ideas on the Internet, as well.

**[Making Books: Kids' Page](http://www.makingbooks.com/kids/)**

[www.makingbooks.com/kids/](http://www.makingbooks.com/kids/)

*The Kids Page was created to get you started making books. There are directions for some simple books in the Bookmaking Projects section. The materials are easy to find and the directions are easy to follow.*

What other ways might you present your research? Is there any way you might use a computer?

Congratulations on making your own animal track guide! Now you're ready to share all of your hard work!



### **Sharing Your Track Stories**

When you have finished your track prints and track stories, you can share them with others in your class or school. Make sure to show them your animal track guide to prepare them for reading your track story! Help your classmates see the special parts of each track that make it easy to identify.

Now show your classmates your track stories. Ask if they can tell which animal made each set of tracks and what the animal was doing. Let them use your track guide to identify each animal in your track stories.

What a great way to learn more about the activities of animals in the wild! It may be a long time before you have a chance to see a nocturnal animal or another wild creature. But now you will know where they have been by reading the stories their tracks tell!

# Treasure Chest of Tools



**Tracking & the Art of Seeing: How to Read Animal Tracks & Sign** by Paul Rezendes (Harper Resource, 1999). ISBN: 0-0627-3524-1.

**Field Guide to Mammal Tracking in North America** by Jim Halfpenny (Johnson Books, 1986). ISBN: 0-9334-7298-6.

**Field Guide to Tracking Animals in Snow** by Louise R. Forrest (Stackpole Books, 1988). ISBN: 0-8117-2240-6.

**A Field Guide to Animal Tracks** by Olaus J. Murie. (Houghton Mifflin Co., 1998). ISBN: 0-3959-1094-3.

**Cover to Cover** by Shereen LaPlantz (Sterling Publishing, 1995).

**Making Books by Hand** by Mary McCarthy & Philip Manna (Quarry Books, 2000).



## Internet

**Nocturnal Animals: All About Nature**

<http://www.enchantedlearning.com/coloring/nocturnal.shtml>

**Bear Tracker's Animal Tracks Den**

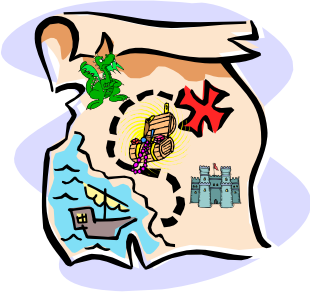
<http://www.bear-tracker.com/>

**Ranger Rick: Whose Track Is That?**

<http://www.nwf.org/kids/trackMatch.cfm>

**Making Books: Kids' Page**

[www.makingbooks.com/kids/](http://www.makingbooks.com/kids/)



## SEM Explorations

### Become an Amateur Mycologist: Grow and Study Molds!

Have you ever opened a loaf of bread to make a sandwich only to find that the slices are covered in mold? In cases like this, mold can be a very pesky organism. But have you ever wondered *where* the mold came from, *how* it got there, and *why* it seems to grow on bread so often? In fact, what *is* mold, anyway?

If you're interested in finding out answers to these questions, then you might want to become an amateur **mycologist**, or a scientist who studies fungi. You may be wondering why you would want to study **fungi** when you're interested in finding out about **mold**. Do you know why? If not, this can be the first question you try to answer when you start your research.



## Charting Your Course

In this exploration, you will need a **lab notebook** and the items listed in the “Things You Will Need” section of the two experiments in this activity. Before you begin your research and experiments, there are a few words you may want to know. **Mold, fungus, and spore** are all words a mycologist could easily define. You may want to find out the meanings of these words and write their definitions in your lab notebook. One way to do this is to use a dictionary in your classroom, school library, or at home. You may also choose to use an online dictionary like this one:

[Merriam-Webster Kids: Wordcentral](http://www.wordcentral.com)  
[www.wordcentral.com](http://www.wordcentral.com)

*This site houses an online dictionary for students. You can search the dictionary to find the meanings of words you don't know and create your own dictionary with all the new words you learn!*

Did you find the definitions? Great! Knowing these words will help you when you are doing your research. Did looking up these words help you to understand why you would want to study fungi when you're interested in studying molds? If so, good! If not, you will soon find out.



### **Experimenting to Grow Mold**

Have you ever helped put away food left over from a meal? Before you put the leftovers in the refrigerator to keep them cool, you probably wrapped them so air could not reach them. Can you think of reasons why people wrap foods and keep them in a cool, dry place? What do you think might happen to those foods if they were not wrapped or if they were not put away in the refrigerator? The following experiment will help you to answer these questions!

## **EXPERIMENT 1**

### THINGS YOU WILL NEED

Masking tape  
Marker or pen  
2 clear jars with lids  
2-4 slices of bread

**SAFETY NOTE:** Be sure to ask an adult (your parent, guardian, or teacher) to help you find two jars that can be thrown away once you have finished your experiment. Once mold has grown inside the jars, it is not safe to reuse them. In addition, mold is not healthy to breathe in, so do not open your jars after the experiment.

### STEPS TO FOLLOW

1. Use masking tape and a marker or pen to label your jars. Label one jar “Jar 1” and the other one “Jar 2”.
2. Break the slices of bread into pieces and put some bread in each jar.
3. Add a few drops of water to Jar 1.
4. Put the lid on tightly, and place Jar 1 in a warm place.
5. Do *not* put any water in Jar 2.
6. Put the lid on tightly, and place Jar 2 in a cool, dry place such as a refrigerator.
7. Watch closely every day for a week or two to see what happens in the two jars. You probably won’t see much besides bread for the first few days, but keep watching!
8. As you watch your jars, take notes in your lab notebook telling what you see each day.

Below is an example of what a couple of pages in your lab notebook might look like:

<u>Jar 1</u>	<u>Jar 2</u>
Day 1: No change	Day 1: No change
Day 2: No change	Day 2: No change
Day 3: No change	Day 3: I'm starting to see...
Day 4: .....	Day 4: .....
Day 5: .....	Day 5: .....

Does the bread in Jar 1 look different from the bread in Jar 2? Do Did you see changes? If so, you have grown a type of fungus called mold!

Why do you think mold grew in one jar and not the other? Did adding water to one jar make a difference in this experiment? Did temperature make a difference in this experiment? To find the answers to these questions and to answer any other questions about this experiment or mold that you might have, you can do research in the library and on the Internet. At the library, try searching the card catalog or computer database for words like *fungi* and *mold*. You will probably be able to find some good books using those search words. Some other books to look for are:

**What is a Fungus?** By D.M. Souza (Franklin Watts, 2002).

ISBN: 0-5311-6223-0.

*Learn about the behavior and biology of the interesting organisms we call mold. Lots of pictures, an index and references to useful websites make learning easy and fun.*



**Slime, Molds and Fungi** by Elaine Pascoe (Blackbirch, 1998).

ISBN: 1-5671-1182-3.

*This book will help you learn about different types of fungi through fun, hands-on experiments.*

**Fungi** by Charles Rotter (The Creative Company, 1994).

ISBN: 0-8868-2593-8.

*Learn about all types of fungi here! What are some varieties? What do they look and feel like? How do people use molds in their daily lives.*

Listed below are a couple of websites you might find useful at this point in the project.

### **Science Education Partnerships: Mold Facts & Experiments**

[www.seps.org/cvoracle/faq/mold.html](http://www.seps.org/cvoracle/faq/mold.html)

*This site was designed to help students learn more about molds and other types of fungi. It includes a great question and answer section where you can even ask scientists questions of your own!*

### **Fun Facts About Fungi**

[www.herbarium.usu.edu/fungi/funfacts/factindx.htm](http://www.herbarium.usu.edu/fungi/funfacts/factindx.htm)

*Learn about mushrooms, molds, lichens, puffballs, and other members of the “hidden kingdom,” and check out fun fungal games and experiments.*

When you find answers to your questions, write the questions and the answers in your lab notebook. If you find some interesting facts about mold, write them in your lab notebook, too!

You never know when those facts might come in handy in future experiments.

## **Changing Variables**

A **variable** is something in an experiment that can be changed to see if it has any effect on the outcome of the experiment. For example, there were two changing variables in Experiment 1. Do you know what they were? That’s right, the changing variables in Experiment 1 were A) temperature and B) whether or not water was added to the jar. You can do an experiment in a different way simply by changing one of the variables.

### **TRY EXPERIMENT 1 AGAIN THIS WAY:**

- Place new bread in two new jars, labeled Jar 1 and Jar 2.

- Put a few drops of water in Jar 1, but leave Jar 2 dry, as you did before.
- This time leave both jars uncovered.
- Put them both in a warm place.
- Look at your jars after a week or so.

## QUESTIONS TO ANSWER

Now a week has gone by and you have looked at the bread in both jars and recorded your findings in your lab notebook.



What has happened in the two jars?



Did the results change now that you have changed a variable?



Why do you think the experiment turned out this way?

Write all of your answers in your notebook. Feel free to research these questions and any other questions you may have in the same way you did last time, using the library and the Internet.

## **EXPERIMENT 2**

You can do this experiment with a friend or by yourself. If you do it with a friend, each of you should bring soil from your yard or garden. If you do it by yourself, use soil from two different places.

### THINGS YOU WILL NEED

You need a lot of things for this experiment. It may help you to keep track if you mark each thing on the list as you find it.

Masking tape  
Marker or pen

Soil from two different places (Be sure to read the entire experiment carefully to find out how much you need.)

2 Boxes, such as shoeboxes

Foil wrap

Water

2 Pieces of leather (such as a leather shoelace cut in half.)

2 pieces of rubbers (such as large rubber bands.)

2 pieces of plastic (such as clean plastic spoons.)

Plastic wrap

### STEPS TO FOLLOW

1. Use masking tape and a marker or pen to label each box telling where the soil in each box came from. Remember, the soil in one box should come from a different place than the soil in the other box.
2. Line the inside of each box carefully with foil wrap.
3. Put a layer of soil one inch deep in each box. Be sure to use the soil that matches the label.
4. Moisten the soil in both boxes lightly, but don't soak it.
5. Place one piece of leather, rubber, and plastic on top of the soil in each box. Make sure the different pieces of material do not touch each other.
6. Cover each box tightly with plastic wrap and put them both in a warm place.
7. Watch the boxes closely for several days and write down what you notice in your lab notebook, just as you did in Experiment 1.

### Time to Think and Research...

Each box contains soil from a different place. Soils from different places may contain different kinds of molds. Leather, rubber, and plastic are three possible foods for molds. You have watched the boxes closely for several days. Answer the following questions in your lab notebook:



What foods do the molds like best?



Do the molds look the same in both boxes?



Why do you think you got these results?

Again, try using what you already know from previous research, or do more research at the library or on the Internet to answer these questions or any other questions you might have.

## CHANGING VARIABLES

What variables could you change in this experiment to see if you might achieve different results? Here are some ideas:

- You could keep the soil moist in one box and dry in the other.
- You could try covering only one box with plastic wrap.
- You could place different “foods” for the molds in the boxes.

What would changing these variables test? Can you think of other variables that you could change in this experiment to answer any questions you might have?

## FINDING OTHER EXPERIMENTS

Did you enjoy becoming a mycologist? Would you like to try some other experiments?

Your school library and public library probably have books of science experiments to try. Try looking in the card catalog for *experiments* and *science*. A couple of books to look for are:

**Hands-on Grossology** by Sylvia Branzei (Penguin Group, 1999).  
ISBN: 0-4484-4084-9. *This book contains instructions for simple—and gross!—experiments involving mold. You will also find experiments about, other “disgusting” stuff, such as snail slime and sour milk.*

**Science Magic in the Kitchen** by Richard Robinson (Aladdin, 2001).  
ISBN: 0-6898-4332-1.  
*Perform some fun experiments right in your own kitchen. Includes experiment such as making a model volcano erupt and changing salt into sugar and milk into plastic.*

As you probably found when you were doing your research, the Internet is another great resource. Try searching for *science experiments* on [www.yahooligans.com](http://www.yahooligans.com) and [www.ajkids.com](http://www.ajkids.com). An experiment similar to the ones you have tried in this exploration that is available on the Internet is:

### Mold Terrarium

[www.exploratorium.edu/science\\_explorer/mold.html](http://www.exploratorium.edu/science_explorer/mold.html)

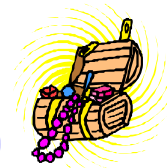
*Watch tiny blue, green and white plants grow on leftover food. This site will help further your understanding of why you wrap and refrigerate leftovers!*

## Launching Your Results



Congratulations! You have learned a lot as an amateur mycologist! If you are interested in sharing what you have learned with your classmates, consider making a presentation or an interest center for your classroom!

## Treasure Chest of Tools



**What is a Fungus?** By D.M. Souza (Franklin Watts, 2002). ISBN: 0-5311-6223-0.

**Slime, Molds and Fungi** by Elaine Pascoe (Blackbirch, 1998). ISBN: 1-5671-1182-3.

**Fungi** by Charles Rotter (The Creative Company, 1994). ISBN: 0-8868-2593-8.



# Internet

**Merriam-Webster Kids: Wordcentral**

[www.wordcentral.com](http://www.wordcentral.com)

**Science Education Partnerships: Mold Facts & Experiments**

[www.seps.org/cvoracle/faq/mold.html](http://www.seps.org/cvoracle/faq/mold.html)

**Fun Facts About Fungi**

[www.herbarium.usu.edu/fungi/funfacts/factindx.htm](http://www.herbarium.usu.edu/fungi/funfacts/factindx.htm)

**Mold Terrarium**

[www.exploratorium.edu/science\\_explorer/mold.html](http://www.exploratorium.edu/science_explorer/mold.html)



## *SEM Xplorations*

### **Becoming a Sportswriter or Sportscaster:**

#### **Learning about two careers in journalism**

Chris Berman and Rick Reilly are two of America's greatest sports journalists. Fast-paced and energetic are two words that have been used to describe their journalism styles. But one of these famous professionals is a sportscaster, while the other is a sports writer.

Chris Berman, who is the sportscaster, has added a creative touch to his work by brainstorming nicknames for over 200 modern day sports figures, such as Barry "U.S." Bonds, George "Taco" Bell, and Mike "Pepperoni" Piazza. Before each broadcast, he creates names that make the fans laugh and cheer. The following website provides a list of Berman's current nicknames:

#### **[A Listing Of Chris Berman's Nicknames](http://www.funny2.com/berman.htm)**

<http://www.funny2.com/berman.htm>

Rick Reilly is in his 19th year as a senior sports writer for Sports Illustrated. He won the award of National Sportswriter of the Year eight times in his career! His featured column "Life of Reilly" is a weekly opinion article found on the last page of Sports Illustrated and he has authored four books.



# Charting Your Course

Do you think you might like to write a sports story or create a sports newscast yourself? Before you can write or report a story you need to know something about sports. Start by taking a sports quiz. Take out a blank sheet of paper, skip lines, and begin numbering 1 – 10. Fill in as many names and information you can about each given topic area next to the designated number.

1. Famous golfers
2. Tennis pioneers
3. Olympic track stars
4. Record-setting baseball players
5. Record-setting football players
6. Record-setting basketball players
7. Record-setting hockey players
8. Famous swimmers
9. Famous ice skaters
10. Famous marathon runners

Do you know the names of any figures from other sports? If so, add a number 11 and write those down. Were you able to fill in many names from persons you already know? Where did you get your information? Some of it may have come from books, but most of what you know about sports probably comes from television, radio, magazines, and newspapers.

To become a sportswriter or a sportscaster, you have to start training, just like an athlete. If you work hard you will be ready to get into the game of writing or broadcasting for your school. Maybe you'll even go for the big one – writing or broadcasting at the professional level.









## Go Into Training

How do you learn about sports in your own community or region? Does your local paper cover school teams and community leagues in sports such as bowling, softball, baseball, Little League, and so on? Do you know who the local sports stars are?

Take a look at the sports section in your local paper. Try to answer these questions:

-  Who is the sports editor?
-  Who writes the sports news articles?
-  Are there personal opinion columns about sports? Who writes them?
-  How are personal opinion columns different from sports news articles?

If you're interested in writing about sports, you need to understand how sports stories are written and what differences there are between sports writing and other kinds of news writing. Comparing stories from the front page of the newspaper and the sports section will help you understand the differences.

### Analyzing Articles

You can begin by taking a closer look at your hometown newspaper. Clip the headline sports story from your local paper. Include stories about local and national players and teams. Also, each day, locate and clip a front-page news story from the paper. Paste or tape each day's sports story and news story to a sturdy piece of construction paper, and keep these in a folder marked "Sports Writing."

Begin your comparison by underlining the key information in each article. In a news story, the key information is found in the first section of an article. It answers the following questions: Who? What? Where? When? Why? How? Find out where the key information is given in a sports story and whether it answers the same questions. Highlight the news article to identify the answer to the above questions.

Next, think about the way the stories are written. News articles are usually factual and written in a plain style. Look for verbs and any descriptive words in the news articles and circle examples in the article in ink.

Sports stories are often written in a much more lively and colorful style than news stories. Look for verbs and descriptive words in the sports stories and write down some examples. How are they different from the words used in the news articles?

In addition to choosing more colorful words, sportswriters often use sports jargon, special words, or phrases relating to sports. For instance, a story about golf might include words such as bogie, birdie, eagle, bunker, and par, all of which have special meanings in golf.

If you find any sports jargon in your articles, write down some examples on a sheet of paper titled, "Sports Jargon." If there are words or phrases in the news article that seem typical, write them down too. Place all the papers in your folder for safekeeping.

### **Analyzing Broadcasts**

During the week when you are clipping articles, try to watch television news shows and listen to news on the radio as well. Analyze the similarities and differences between news stories and sports stories. Try to answer the following questions:

- Do sportscasters deliver sports news the same way that regular newscasters deliver the news?
- Do sportscasters use a different tone from newscasters?
- Who is more relaxed or informal, the sportscaster or the newscaster?

Remember that radio and television news and sports stories are written down before they are presented. Notice ways in which the two kinds of broadcasters use language differently.

### **Drawing Conclusions**

After a week of analyzing the contents and style of news broadcasts and newspaper articles, list the similarities and differences that you have found between regular news and sports news. What conclusions can you draw from your study? Do sportswriters have a style that is different from that of news writers? Can you describe this style? Can you write in this style yourself? There are websites designed to assist writers with their composition and grammar usage. One excellent website is “[GrammarNow!](http://www.grammarnow.com/)” located on the web at <http://www.grammarnow.com/>. There are also many books available to give more information in your specific area of interest.

Books about Sports Writing:

**Sports Writing: A Beginner's Guide** by [Steve Craig](#). (Discover Writing Press, 2002).  
ISBN: 0965657493

*From reporting to note taking, from news stories to feature stories, from keeping track of scores to interviewing, this book is jam packed with practical information.*

**The Best American Sports Writing 2002** edited by Stout & Reilly (Houghton Mifflin, 2002).

ISBN: 0618086285

*Each year, The Best American Sports Writing, well established as the top sports anthology, offers a winning combination of fascinating topics and great writing. Sports Illustrated's Rick Reilly puts together a fun book to delight fans of sports and great writing.*

**Extra! Extra! The Who, What, Where, When and Why of Newspapers** by Linda Granfield, 1993. (Orchard Books (NY), 1994).

ISBN: 0531068331

*A n idea-filled book for beginning news journalists. Here you will find information about how newspapers are put together, stories about history, clarifications of terms, and how-to projects. Sections include news stories, editorials, comics, advertising, production, and delivery.*

**A Sportswriter's Life: From the Desk of a New York Times Reporter** by Gerald Eskenazi (University of Missouri Press, 2004).

ISBN: 0826215106

*This book looks at sports and sportswriting from the point of view of the people who have firsthand knowledge of professional sports. His amusing and interesting stories can be enjoyed by anyone with an interest in reporting, sports, or just a good story.*

Books about Sportscasting:

**Call of the Game: What Really Goes on in the Broadcast Booth** by Gary Bender, Michael L. Johnson (Bonus Books; 1st ed edition, 1994).

ISBN: 1566250137

*This is a great book choice for someone thinking about entering the broadcasting industry, either writer or broadcasting.*

**The Art of Sportscasting: How to Build a Successful Career** by Tom Hedrick (Diamond Communications, 2000).

ISBN: 1888698241

*This is an excellent book about all aspects of sportscasting. It includes information on preparing for a broadcast, working with others, and reviewing your work.*

**The Big Show** by Keith Olbermann, Dan Patrick (Atria, 1998).

ISBN: 0671009192

*An easy read to learn more about what happens in the sportscasting booths. This book was written by two famous broadcasters from ESPN.*



### **Get Into the Game**

If your class or school has a newspaper, try writing a sports opinion column or a series of articles for the paper. You can write about your school's teams and players. Start by interviewing players and coaches for background information as well as information about specific games or meets.

Before you conduct an interview, be sure you are well organized. Have a list of questions prepared, but be ready to follow other ideas if something unexpected but interesting comes up. If you would like to use a tape recorder, make sure to ask the person if it's okay. Even if he or she says yes, take notes as well, in case of technical problems. Be sure to thank the person after the interview.

If your school does not have a newspaper, you may want to contact a local newspaper to see if you can meet with the sports editor or a sports writer. When you call the paper, introduce yourself, explain your project briefly, and make an appointment to talk to someone who covers sports. When you meet the person, explain more fully about your project and your interest in writing about sports. See if you can learn more about a sports reporter's job.

You can also try writing articles about the same events covered in the paper. Learn about local athletes and go to some games. Write and revise your stories. Do they sound like those you clipped for your analysis? Keep your articles in your folder to keep a record of your work and progress.

If radio announcing interests you, read the stories you have written into a tape recorder. Practice until you have perfected an "on the air" style. Think about some creative way to add to your broadcast the way that Chris Berman added his own touch of creativity. Remember the radio and television sportscasters you analyzed, and work until you achieve the right tone. Then make a demonstration tape of your best work. If your school has a public announcement system, see if you can broadcast a brief sports story in the morning announcements now and then.

If you would like to go further in sports reporting, you can try to become an actual reporter for your local newspaper or radio station or even a local television station, especially a local cable TV station. Use examples of your sports stories and demonstration tapes to show the local sports editor or station manager that you have what it takes to be a sports reporter or sportscaster.

Maybe you will be able to write a sports column or an ongoing series of articles about local sports figures. Maybe you will be able to report on your school's sports news during the year. The possibilities are exciting!

# Treasure Chest of Tools



**Sports Writing: A Beginner's Guide** by [Steve Craig](#). ISBN: 0965657493

**The Best American Sports Writing 2002** Ed. By Stout & Reilly, 1982. ISBN: 0618086285

**Extra! Extra! The Who, What, Where, When and Why of Newspapers** by Linda Granfield, 1993. ISBN: 0531068331

**A Sportswriter's Life: From the Desk of a New York Times Reporter** by Gerald Eskenazi, 2004. ISBN: 0826215106

**Call of the Game: What Really Goes on in the Broadcast Booth** by [Gary Bender](#), [Michael L. Johnson](#). ISBN: 1566250137

**The Art of Sportscasting: How to Build a Successful Career** by [Tom Hedrick](#). ISBN: 1888698241

**The Big Show** by [Keith Olbermann](#), [Dan Patrick](#). ISBN: 0671009192



## Internet

**A Listing Of Chris Berman's Nicknames**

<http://www.funny2.com/berman.htm>



## SEM Xplorations

### Bridges 101

Have you ever watched a bridge collapse right before your eyes? Most likely you haven't had this experience because bridge engineers have learned from the horrible November 1940 collapse of the Tacoma Narrows Bridge in Washington. The Tacoma Narrows Bridge was designed as a suspension bridge, like the [Golden Gate Bridge](http://www.goldengate.org/) (<http://www.goldengate.org/>) in California, and was open to traffic for only a few months. It quickly became known for the way strong winds twisted the light roadway. In its design stage, engineers, people who build and design things that make people's lives easier, did not think that wind would have had an effect on the bridge so they continued designing the bridge as planned. But soon after the bridge was built, a problem became evident. On November 7, 1940 the winds were blowing stronger than normal. This caused the roadway to bounce up and down in abnormal ways, more than it had ever before. Before long, a support bracket that was providing strength to the bridge slipped. Soon after, one suspension cable snapped and the collapse of the bridge began. Amazingly, this footage was caught on tape! Take a look at the two links below.

#### **Tacoma Narrows Bridge Disaster, November 1940**

<http://www.enm.bris.ac.uk/research/nonlinear/tacoma/tacoma.html>

*Watch this eight second video clip to see the "twisted" effects of wind moments before the Tacoma Narrows Bridge fell apart. Scroll to the bottom of the page and click on "video clip."*

#### **Tacoma Narrows Bridge Disaster**

<http://www.wcsscience.com/tacoma/bridge.html>

*See large snapshots of the Tacoma Narrows Bridge as it tumbled down and read the details of what happened on that fateful day.*

The video and photographic footage of the bridge demonstrates an important lesson to engineers and architects who build and design bridges. They need to test the effects of nature on the bridge before building the structure.

This project will give you an opportunity to study some special bridges from around the world and learn about the different ways engineers design bridges. It will give you a chance to see how natural forces affect bridges, while also learning about different styles of bridges. In the end, you'll have a chance to design and plan your own bridge taking important factors into consideration! Right now you should take a few blank sheets of paper to use for brainstorming. As you progress through the websites and activities, write down bridges that fascinate you and record any information that would be helpful for you when designing your own sketch of a bridge.



The history of bridges is tied directly to the development of various forms of transportation—many of which were invented during the 1800's and 1900's. The inventions are important to people because they have improved human's lives. Transportation makes traveling quicker than the alternative of traveling by foot, plus it also allows for a greater number of objects to be transported at one time.

In the early 1800's trains were invented. They were an important advance in transportation, because they allowed people and objects to travel large distances in less time than that required by covered wagons—the previous way of traveling. Train travel quickly became very popular, creating a need for more railway lines. As the railroads expanded, it was only



natural that they soon came to rivers and other waterways that prevented further rail construction. Obviously, the railroads needed some bridges to allow for unlimited travel. And this is how train bridges came to be. Today, many train bridges are still in existence and use around the world.

After trains, bicycles were invented in the mid to late 1800's furthering people's choices in travel. Then came automobiles and airplanes in the early 1900's. Throughout the 1900's, these two forms of transportation, originally used by only the wealthiest people, dropped in price and became more popular and more universally used. Just as with trains, the increase in popularity of cars and bikes created a need for more roadways and more bridges. Bridge designers began experimenting with bridge designs because of the need for bridges to span greater distances. Today, engineers are still building bridges to allow people to drive to their desired destinations. For example, [the Confederation Bridge](http://www.confederationbridge.com/bridge/morepics.aspx?pageid=71&lang=en) (<http://www.confederationbridge.com/bridge/morepics.aspx?pageid=71&lang=en>) which was opened in May 1997, spans the 8 miles between Prince Edward Island, Canada, and New Brunswick, Canada. Now people can drive to the island for the first time. As you can see, this desire to push the limits of bridges is still seen throughout the world today as engineers compete to build the largest and highest bridges in history.



Bridge designing might sound fun and easy, but many important lessons need to be learned before people begin. Did you know that there are four main types of bridges? These bridges are a [suspension bridge](http://www.hsba.go.jp/bridge/e-akasi.htm) (<http://www.hsba.go.jp/bridge/e-akasi.htm>), a [beam bridge](http://www.pbs.org/wgbh/nova/bridge/meetbeam.html) (<http://www.pbs.org/wgbh/nova/bridge/meetbeam.html>), an [arch bridge](http://www.pbs.org/wgbh/nova/bridge/meetbeam.html)

(<http://www.pbs.org/wgbh/buildingbig/wonder/structure/iron.html>), and a [cable-stayed bridge](http://www.pbs.org/wgbh/buildingbig/wonder/structure/sunshineskyway1_bridge.html) ([http://www.pbs.org/wgbh/buildingbig/wonder/structure/sunshineskyway1\\_bridge.html](http://www.pbs.org/wgbh/buildingbig/wonder/structure/sunshineskyway1_bridge.html)). Keep reading and you will learn about each of these bridges.

In addition to choosing which main type of bridge to build, engineers need to consider several factors when creating their designs, including: the distance to be bridged, how the bridge will fit into its natural surroundings, and the forces that can affect the bridge, like the wind in the Tacoma Narrows Bridge disaster. After bridge engineers design the bridge they must present their plan, or proposal, to a group of people who will decide if they like the proposal. If they like it, then the project will be built. If they don't like the proposal, the group might ask for a new bridge design or choose a different bridge designer's ideas. Below are two websites that will give you a chance to learn more about decisions bridge designers must consider.

### **Building Big**

<http://www.pbs.org/wgbh/buildingbig/lab/shapes.html>

*Use this site to test out different forces, loads, materials and shapes of bridges to experiment with different considerations when building a bridge.*

### **Craggy Rock Bridge Challenge**

<http://www.pbs.org/wgbh/buildingbig/bridge/challenge/index.html>

*Become a bridge designer in seconds by helping the mayor and townspeople of Craggy Rock make good decisions about the style of bridges required for different locations.*

Did you enjoy exploring the challenges bridge designers face? What skills did you need to successfully complete your tasks on these websites? If you think problem solving was important, then you are correct! It is also important to become informed. When people become informed they gather important information from all different sources before beginning to plan. Engineers need to be excellent problem solvers who can find a variety of ways to solve problems and make informed decisions.

As you begin to look more closely at bridges you will notice how bridges look different from one another—even if the bridges are the same type of design. This is because bridges are built for many different purposes. For centuries, bridge designers have had to think about more than transportation needs when designing bridges. For example, in China, bridges have been built as a symbol of culture. Take a look below at some of these impressive bridges—they are exciting and beautiful, as well as functional. Some people would even say that they are works of art! Remember to take notes on any bridge you find interesting.

### **[Chinese Wooden Bridge in Minorities Park](http://chinadan.com/03china-bridge/01-04h.html)**

<http://chinadan.com/03china-bridge/01-04h.html>

*This website may take a minute to download, but the wait will be worth it when you see this ornate Chinese bridge. Have you ever seen a bridge like this in the United States? Probably not! How is it different from bridges you have seen? How is it similar?*

### **[Marco Polo Bridge, China](http://www.chinapage.org/history/lugouqiao/lugouqiao.html)**

<http://www.chinapage.org/history/lugouqiao/lugouqiao.html>

*This bridge was first built in 1192 and features a stone segmented design. More than eight-hundred years ago, the bridge was listed as one of the "Eight Scenic Spots of Yanjing (Beijing)." Is it still beautiful and interesting today? Why or why not?*

### **[Santiago Calatrava, Bridge Designer](http://www.calatrava.com/)**

<http://www.calatrava.com/>

*Take a look at this master architect and engineer's modern bridge designs. Click on "bridge" and "chronology" to see pictures of the bridges and read about each one.*

Bridges can serve a variety of purposes in addition to aiding highway transportation. Take a look below to see the different functions of bridges. Did you know you can walk on top of a bridge in Australia and a composer plays the cables of bridges to create music?

You might be amazed at what you learn about the functions of bridges, so keep reading!

### **[Sydney Harbour Bridge](http://www.bridgeclimb.com/)**

<http://www.bridgeclimb.com/>

*Search this site to see people climb to the highest point on this bridge in Australia. Make sure to check out the [image gallery](http://www.bridgeclimb.com/experience_frs.htm) ([http://www.bridgeclimb.com/experience\\_frs.htm](http://www.bridgeclimb.com/experience_frs.htm)) and the [online video](http://www.bridgeclimb.com/experience_frs.htm) ([http://www.bridgeclimb.com/experience\\_frs.htm](http://www.bridgeclimb.com/experience_frs.htm)) to get a taste of the experience.*

### **Royal Gorge Bridge**

<http://www.royalgorgebridge.com/>

Ride the [Royal Rush Skycoaster](http://royalgorgebridge.com/html/park-information/skycoaster-ride.html) (<http://royalgorgebridge.com/html/park-information/skycoaster-ride.html>) in Colorado and feel the exhilaration of falling 1,200 feet off the side of the suspension style Royal Gorge Bridge. For a thrill, click on the Royal Rush Skycoaster commercial link on the Royal Rush page. Does this experience look like something you would enjoy?

### **Singing Bridges**

<http://www.singingbridges.net/about/index.html>

Read about the bridge musician, Jodi Rose as she plays the cables of suspension bridges and cable-stayed bridges around the world.

### **Matsuo Bridge**

<http://www.matsuo-bridge.co.jp/english/bridges/catalog/kansai-intl.shtm>

Take a look at an island that was created to be an airport in Japan. Notice the long span bridge that allows cars on top and a railway on the truss.

### **Covered Bridges**

<http://architecture.about.com/gi/dynamic/offsite.htm?zi=1/XJ&sdn=architecture&zu=http%3A%2F%2Fwilliam-king.www.drexel.edu%2Ftop%2Fbridge%2FCBbyC.html>

Visit over 70 covered bridges located across the Northeast United States to learn about this early style of New England bridge design.

### **Rainbow Bridge**

<http://www.nps.gov/rabr/home.htm>

The world's largest natural bridge is located in the state of Utah where thousands of people visit it each year. Click on this site to learn more about this special natural monument.

Which style of bridge was most interesting to you? Did you make notes? If you were to become a bridge designer, what type of bridge would you create? But wait—don't make your decision yet! There are still a few more bridges to consider before beginning your project.

Recently, a shift has taken place in American bridge design. Since 1975, only a handful of cable-stayed bridges have been built in America. But more recently, these bridges have become more popular. For example, there is a new cable-stayed bridge in Boston, Massachusetts named the [Leonard P. Zakim Bunker Hill Bridge](http://www.leonardpzakimbunkerhillbridge.org/) (<http://www.leonardpzakimbunkerhillbridge.org/>). There are also cable-stayed bridges being

built in [Toledo, Ohio](#),

(<http://www.lookuptoledo.org/servlet/com.hntb.toledo.servlets.NewsManagement?option=3>),

[Charleston, South Carolina](#), (<http://www.cooperriverbridge.org/>) and [Greenville, Mississippi](#)

(<http://www.greenvillebridge.com/>). There is a fifth cable-stayed bridge connecting Illinois and

Missouri. Take a look at the digital video clip of this bridge below.

### **[New Mississippi River Bridge](#)**

<http://www.newriverbridge.org/>

*See the computer animated digital video clip of the anticipated bridge in St. Louis, Missouri opening in 2010. Click on the link and open “See the New Bridge” Link.*



Considering the information you have learned, what type of bridge will you create? Do you want to build a bridge for trains, bikes, cars or airplanes? Where will your bridge be located? What style bridge is best for the location? It might be easiest for you to think about an area you have traveled to, or an area close to your home and school where a bridge would help people in your town.

Review the information you recorded while working through this project and decide which types of bridges are most interesting to you. You might want to circle or star the information you will use as the base to your bridge sketch. Consider the activities from Craggy Rock to be sure you are choosing the most appropriate bridge for the space.

Take a blank piece of paper and decide on the bridge you plan to design. This bridge should be your own original design, but you might consider combining a few styles together. Write in the bottom corner of the page the following information: where the bridge will be built, what type of transportation will use the bridge, and the style of the bridge (suspension, beam, cable-stayed, or arch).

You can begin drawing your bridge on scrap paper until you feel comfortable to make a published copy. Bridges are hard to draw, but with practice you can really improve your style. Keep working until you feel you have done the best you can.

In real-life you would have to present your proposal to a group of people for them to decide if they like your ideas. Recreate this situation by contacting a local engineering firm to see if they would be interested in seeing your project. They would be able to give you good advice on how to improve your design. You might also want to share your design with your local library for display purposes.

Congratulations on your perseverance and good work. You might want to attempt a more difficult level of bridge activities. There is a project called “Build a Bridge and Get Over It” geared towards middle school students.



**Bridges!: Amazing Structures to Design, Build and Test**, by Carol A. Johmann and Elizabeth J. Rieth ( Sagebrush, 1999). ISBN: 1-885593-30-9.

*This book is filled with historical and technical information about bridges, as well as hands-on experiments demonstrating the ideas behind bridge design and construction. Projects range from construction of a popsicle-stick bridge to writing bridge poems. If you're interested in bridges, this book may be for you!*

**Covered Bridges: Across North America** by Joseph D. Conwill. (Motorbooks International, 2004).

ISBN: 0760318220

*Here you will find a history of covered bridges from the early 1800's to the present. Learn about bridges for toll-roads, bridges from the classic era of covered bridges and preservation projects today.*

**The Haunted Bridge (Nancy Drew Mystery Series #15)** by Carolyn Keene (Grosset & Dunlap; Revised edition, 2001).

ISBN: 0448095157.

*Nancy Drew, the famous girl-detective is solving mysteries again—this one includes a creepy bridge, a lost jewel-case and an obnoxious golfer.*

**Hey Kid, Want to Buy a Bridge?** by Jon Scieszka (Puffin Books, 2003).

ISBN: 0142500208

*Joe, Sam and Fred have traveled into the past—and landed on top of the unfinished Brooklyn Bridge in New York, New York. Read about the boys exciting adventures in this fun book.*

**The Family under the Bridge** by Natalie Savage Carlson. (HarperTrophy; Reissue edition, 1989).

ISBN: 0066402509.

*Unfortunately, bridges sometimes must serve as temporary homes for people who have nowhere else to live. Read this book about a family who lives under a bridge in Paris, France.*



## Internet

**Golden Gate Bridge, Highway and Transportation District**

<http://www.goldengate.org/>

**Tacoma Narrows Bridge Disaster, November 1940**

<http://www.enm.bris.ac.uk/research/nonlinear/tacoma/tacoma.html>

**Tacoma Narrows Bridge Disaster**

<http://www.wcsscience.com/tacoma/bridge.html>

**Confederation Bridge**

<http://www.confederationbridge.com/bridge/morepics.aspx?pageid=71&lang=en>

**Building Big**

<http://www.pbs.org/wgbh/buildingbig/lab/shapes.html>

**Craggy Rock Bridge Challenge**

<http://www.pbs.org/wgbh/buildingbig/bridge/challenge/index.html>

**Chinese Wooden Bridge in Minorities Park**

<http://chinadan.com/03china-bridge/01-04h.html>

**Marco Polo Bridge, China**

<http://www.chinapage.org/history/lugouqiao/lugouqiao.html>

**Santiago Calatrava, Bridge Designer**

<http://www.calatrava.com/>

**Sydney Harbour Bridge**

<http://www.bridgeclimb.com/>

**Royal Gorge Bridge**

<http://www.royalgorgebridge.com/>

**Singing Bridges**

<http://www.singingbridges.net/about/index.html>

**Matsuo Bridge**

<http://www.matsuo-bridge.co.jp/english/bridges/catalog/kansai-intl.shtm>

**Covered Bridges**

<http://architecture.about.com/gi/dynamic/offsite.htm?zi=1/XJ&sdn=architecture&zu=http%3A%2F%2Fwilliam-king.www.drexel.edu%2Ftop%2Fbridge%2FCBbyC.html>

**Rainbow Bridge**

<http://www.nps.gov/rabr/home.htm>

**New Mississippi River Bridge**

<http://www.newriverbridge.org/>





## *SEM Xplorations*

### **Capture the Moment!**

#### **Compile a Book of Turning Points**

Have you ever heard someone describe an important event that changed his or her life? Or read about such a moment in a biography or a news article about a well-known person? If so, you have learned about a turning point. A turning point is an experience that causes someone to think in new ways, to find new opportunities, and to grow in new directions in life. These moments are also called “pivotal moments” or “defining moments.” How do these important experiences occur? Do only famous people have them? What about turning points in the lives of people around you? Have any of your friends, teachers, town officials or family members experienced turning points in their lives?

One way to learn more about turning points would be to create a book that includes quotes or excerpts from the lives of famous people, combined with the same type of information from people in your school or town. When you have researched, written, edited, and published your book, you will have a record that shows differences in people’s turning points, as well as anything these moments have in common.



# Charting Your Course

## Reading for Turning Points

You might want to start your project by looking for turning points in the lives of famous people. You could choose several famous persons known for their contributions to their fields, such as the inventor Thomas Edison or the poet Maya Angelou. You could also look at talented athletes, like Michelle Kwan or Michael Jordan. Artists, politicians, musicians, and historical figures are also good choices. You may want to select several different kinds of famous people for your book. Do you think a painter's turning point might have anything in common with a turning point in the life of a scientist? You can find biographical information on websites such as the following.

### **[Biographies for Kids: Famous Leaders for Young Readers](http://www.gardenofpraise.com/leaders.htm)**

<http://www.gardenofpraise.com/leaders.htm>

*This site provides easy to read biographies of famous leaders.*

### **[The Faces of Science: African Americans in the Sciences](http://www.Princeton.edu/~mcbrown/display/faces.html)**

<http://www.Princeton.edu/~mcbrown/display/faces.html>

*This site provides profiles of African American men and women who have contributed to the advancement of science and engineering.*

### **[Meet Amazing Americans](http://www.americaslibrary.gov/cgi-bin/page.cgi/aa)**

<http://www.americaslibrary.gov/cgi-bin/page.cgi/aa>

*This site is sponsored by the Library of Congress. Discover the inventors, politicians, performers, activists and other everyday people who made the United States what it is today.*

### **[The Founding Fathers: Delegates to the Constitutional Convention](http://www.archives.gov/national_archives_experience/charters/constitution_founding_fathers.html)**

[http://www.archives.gov/national\\_archives\\_experience/charters/constitution\\_founding\\_fathers.html](http://www.archives.gov/national_archives_experience/charters/constitution_founding_fathers.html)

*You can find biographies here of each of the 55 delegates to the Constitutional Convention.*

### [Images of Greatness](#)

<http://www.kyrene.k12.az.us/schools/brisas/sunda/great/great.htm>

*This site contains biographies written by elementary school students of 12 great individuals.*

### [Gallery of Achievers](#)

<http://www.achievement.org/galleryachieve.html>

*This interesting site has biographies of achievers in all fields from around the world. Includes video and audio recordings of great achievers.*

### [National Women's History Project](#)

<http://www.nwhp.org>

*This website offers opportunities for thorough research on topics in women's history. Available information includes coverage of a full array of female historical figures, an illustrated quiz about notable women, and many links to other relevant sites.*

These websites might be helpful if you're looking for something a little more challenging:

### [Biography.com](#)

<http://www.biography.com>

*A database of 25,000 people—past and present. It is based on the famous A&E program, 'Biography.'*

### [Lives](#)

[http:// amillionlives.com/](http://amillionlives.com/)

*Links to thousands of biographies, autobiographies, memoirs, diaries, letters, narratives, oral histories and more.*

If you would like to use some books as well, here are some that you might find in your school or local library:

**Janice VanCleave's Scientists Through the Ages** by J. VanCleave (Wiley, 2003).

ISBN: 0471252220

*Profiles of some of history's great scientists and experiments to demonstrate their theories.*

**The Turning Point: Pivotal Moments in the Lives of Celebrities** by G. Plaskin (Carol Pub. Group, 1992).

ISBN: 1559721383

*This book describes how well-known figures such as Claudia Schiffer, Kirk Douglas, and others have handled tragedy and other events that have shaped their lives.*

**Kid Stories: Biographies of 20 Young People You'd Like to Know** by J. Delisle (Turtleback Books, 2001).

ISBN: 060619407X

*Life stories of twenty kids who have faced life's challenges bravely and with dignity.*

**Girls Who Rocked the World: Heroines from Sacagawea to Sheryl Swoopes** by A. Welden, J. McCann (Beyond Words Publishing, 1998).

ISBN: 1885223684

*The first book to profile girl heroines who made their mark on the world before turning twenty.*

**Girls Who Rocked the World 2: From Harriet Tubman to Mia Hamm** by M. R. McCann, et al (Beyond Words Publishing, 2000).

ISBN: 1582700257

*This sequel features the stories of Golda Meir, Israeli prime minister, ambassador, and U.N. delegate; Rigoberta Menchu, Guatemalan activist and winner of the Nobel Peace Prize; Italian physicist Laura Bassi, one of the first women scientists in western history; and Lauryn Hill, American singer and winner of multiple Grammy awards who produced her first album at age 17.*

**Boys Who Rocked the World: From King Tut to Tiger Woods** by L. Desouza (Illustrator), M. Stepanek (Beyond Words Publishing 2001).

ISBN: 1582700451

*Boys Who Rocked the World profiles already famous boys, along with less well-known boy heroes.*

These books might be a little more advanced:

**Lives Charmed: Intimate Conversations With Extraordinary People** by L. Sivertsen (Health Communications, 1998).

ISBN: 1558745939

*This book contains interviews with people who have created happy and content lives.*

**Lives of Notable Asian Americans: Arts, Entertainment, Sports (The Asian American Experience)** by G. Gan (Chelsea House Publications, 1995).

ISBN: 0791021882

*This book discusses the lives of Asian Americans such as Amy Tan, David Henry Kwang, Dharati Mukherjee, Jessica Hagedorn, and Laurence Yep.*

**Five First Ladies: A Look into the Lives of Nancy Reagan, Rosalynn Carter, Betty Ford, Pat Nixon, and Lady Bird Johnson** by E. S. Smith (Walker & Company, 1986).

ISBN: 0802766412

*Describes the duties and privileges of the President's wife.*

As you read, try to identify for each person a time or an experience that proved to be a turning point. Write down word-for-word any interesting statements the person made about the experience, and take notes so that you can write your own description of the event. Be sure to keep track of where you found quotes and other information by listing the author, title, place of publication, publisher, and date of publication for each book you use. You can take your notes on index cards, and write your sources right on the card, or you can take notes in a notebook and write your source information after each note you make.

If a turning point is not obvious and easy to find, don't give up. Try reading other sources. If necessary, choose a different person. You may need to investigate the lives of ten to fifteen famous people to find enough turning points for your book. After you have finished your research, think about the following questions:

- Do turning points seem to fall into categories, such as experiences, advice or assistance from mentors, or ideas found in books?
- Do some turning points occur when there is a crisis in a person's life?
- Do most turning points happen when people are relatively young, or when they are older?
- Are most people able to identify turning points in their lives?
- Can many people identify more than one turning point?

Make a chart that shows turning points and organizes them into the categories you have identified. Part of a sample chart follows.

Name	Experience	Mentor	Book
Albert Einstein	Einstein thought as a teenager, "What would the world be like if I rode on a beam of light?"		
Georgia O'Keeffe		Stieglitz - photographer and art exhibitor	a picture titled "Maid of Athens" in an art book

Your chart may have more or fewer categories than this one. It should reflect the information you have discovered through your research and your own ideas about how it should be organized.



### Interviewing for Turning Points

Now you're ready to research the people around you and to compare them with the famous people you have identified. Choose five to ten people that you know or would like to learn more about. For example, you might choose someone who has an exciting job, or a hobby you would like to try for yourself.

Be polite when you ask someone for an interview. Explain what you're doing and how you would like to use the information. You may want to compose a statement like this one:

“People often remember significant events or experiences that were turning points in their lives. Can you think of any turning points in your life? Would you be willing to tell me about it? I’m doing this research as part of a school project and chose you as someone I would like to interview. I will compile all the information into a book at the end of the project.”

Remember that the person may hesitate or may not want to share a turning point with you. In that case, thank the person anyway and go on to the next person on your list.

When a person agrees to tell you about a turning point, arrange a time and place for your interview that will be convenient for him or her. Be sure to check your plans with a parent.

During interviews, take your time and carefully write down what the interviewees tell you. These moments are special and deserve to be recorded with accuracy and care. You might even want to bring a tape recorder to get your facts straight—just make sure to ask each interviewee if they mind being recorded.

Encourage the interviewees to tell you as much as they can remember about their turning points. Ask about the date, the time of day, where they were, and what they were doing. Details of sight and sound make stories more interesting. Below you will find some examples of turning points.

### *Example 1*

“I remember exactly where I was when I decided to become an auto mechanic. It was a Saturday morning when I was about twelve. I was helping my dad change the oil in our car. I just took one look under the hood and was hooked. Cars—new cars, old cars, jalopies, sports cars—that was it for me.” -James Rowe

## *Example 2*

“When did I decide to become a doctor? You won’t believe this, but I was watching MASH on TV. I bet you’re too young to remember that show. I thought, ‘I want to be a doctor like those guys; I want to help people.’” -Sarah Tobias

At the end of each interview, be sure to thank the interviewee for his or her time.

### **Organizing Your Information**

Start organizing your book by adding the information about your interviewees to the chart you made. Do you need new categories? Does each category include both famous people and the people you interviewed? If not, you may decide to combine categories. The categories may help you organize your turning points in a way that will be interesting for the reader.



### **Making Your Book**

Now that you have gathered and organized your data, how do you want your book to look? One idea is to make an autograph book, which is half the size of a regular piece of paper. Here’s how: After you put your turning points in the order you want, print or type them on unlined paper. Put two stories on each page. When you’re ready to bind the book, you will cut the pages in two, leaving one story on each page.

As you work, think about how you would like the book to turn out. Would special paper, colorful writing or an interesting font (if you’re typing your book) help bring your turning points to life? Or do you prefer a simple style? Are there colors or pictures that might illustrate or



compliment your turning points? Remember, this is your book; use your creativity and judgment to make it truly unique!

Once you have created a master copy that satisfies you, take the book to the people you have interviewed and ask each one to autograph his or her own page. Finish up by writing a brief introduction that explains how you compiled the turning points in the book. Write a bibliography as well, listing the books, websites and other sources you used for the stories of famous people. The bibliography will go at the end of the book.

Now you have two choices for the book. If you want only one copy, now is the time to cut the pages apart and put them in order along with your introduction and bibliography. Make an interesting cover from construction paper, poster board or other material that you think works, and then staple the whole book together. If you prefer to bind your book in a more elaborate way, you can find instructions for book binding in craft books or on the Internet. The websites below might be helpful to you at this stage:

**[Denise Fleming's Handmade Paper Bookbinding](http://www.bcpl.info/kidspage/kids_flem_bookbinding.html)**

[http://www.bcpl.info/kidspage/kids\\_flem\\_bookbinding.html](http://www.bcpl.info/kidspage/kids_flem_bookbinding.html)

*This site shows you how to bind books with homemade paper and raffia (a kind of fibrous cord made from a palm plant), but you could also use store-bought paper of any kind, and substitute ribbon or string for the raffia.*

**[Do it Yourself Network, Simple Bookbinding](http://www.diynet.com/diy/pa_books/article/0,2025,DIY_14152_2268188,00.html)**

[http://www.diynet.com/diy/pa\\_books/article/0,2025,DIY\\_14152\\_2268188,00.html](http://www.diynet.com/diy/pa_books/article/0,2025,DIY_14152_2268188,00.html)

*This site shows you two different ways to bind books.*

If you would like to have several copies of your book, make photocopies of each page and then cut the pages apart. Bind each book as described above, or in any other style you choose. Now you can give a copy of the book to the people you have interviewed, or to the school library, or both. Be sure to check with the interviewees to see if it is all right with them before you give out copies of the book.

Congratulations! You have accomplished something many people only dream about: You have researched, edited and published a book. Just as importantly, you have created a record of a special experience that is shared by many kinds of people, both famous and not so famous.

Could this be a turning point in your life?

# Treasure Chest of Tools



**Janice VanCleave's Scientists Through the Ages** by J. VanCleave (Wiley, 2003). ISBN: 0471252220

**The Turning Point: Pivotal Moments in the Lives of Celebrities** by G. Plaskin (Carol Pub. Group, 1992). ISBN: 1559721383

**Kid Stories: Biographies of 20 Young People You'd Like to Know** by J. Delisle (Turtleback Books Distributed by Demco Media, 2001). ISBN: 060619407X

**Girls Who Rocked the World: Heroines from Sacagawea to Sheryl Swoopes** by A. Welden, J. McCann (Beyond Words Publishing, 1998). ISBN: 1885223684

**Girls Who Rocked the World 2: From Harriet Tubman to Mia Hamm** by M. R. McCann, et al (Beyond Words Publishing, 2000). ISBN: 1582700257

**Boys Who Rocked the World: From King Tut to Tiger Woods** by L. Desouza (Illustrator), M. Stepanek (Beyond Words Publishing 2001). ISBN: 1582700451

**Lives Charmed: Intimate Conversations With Extraordinary People** by L. Sivertsen (Health Communications, 1998). ISBN: 1558745939

**Lives of Notable Asian Americans: Arts, Entertainment, Sports (The Asian American Experience)** by G. Gan (Chelsea House Publications, 1995).

**Five First Ladies: A Look into the Lives of Nancy Reagan, Rosalynn Carter, Betty Ford, Pat Nixon, and Lady Bird Johnson** by E. S. Smith (Walker & Company, 1986). ASIN: 0802766412



# Internet

## **Biographies for Kids: Famous Leaders for Young Readers**

<http://www.gardenofpraise.com/leaders.htm>

## **The Faces of Science: African Americans in the Sciences**

<http://www.Princeton.edu/~mcbrown/display/faces.html>

## **Meet Amazing Americans**

<http://www.americaslibrary.gov/cgi-bin/page.cgi/aa>

## **The Founding Fathers: Delegates to the Constitutional Convention**

[http://www.archives.gov/national\\_archives\\_experience/charters/constitution\\_founding\\_fathers.html](http://www.archives.gov/national_archives_experience/charters/constitution_founding_fathers.html)

## **Images of Greatness**

<http://www.kyrene.k12.az.us/schools/brisas/sunda/great/great.htm>

## **Gallery of Achievers**

<http://www.achievement.org/galleryachieve.html>

## **National Women's History Project**

<http://www.nwhp.org>

## **Biography.com**

<http://www.biography.com>

## **Lives**

[http:// amillionlives.com/](http://amillionlives.com/)

## **Denise Fleming's Handmade Paper Bookbinding**

[http://www.bcpl.info/kidspage/kids\\_flem\\_bookbinding.html](http://www.bcpl.info/kidspage/kids_flem_bookbinding.html)

## **Do it Yourself Network, Simple Bookbinding**

[http://www.diy.net.com/diy/pa\\_books/article/0,2025,DIY\\_14152\\_2268188,00.html](http://www.diy.net.com/diy/pa_books/article/0,2025,DIY_14152_2268188,00.html)



## *SEM Xplorations*

### **Changing the World, One Invention at a Time**

Do you have what it takes to become a famous inventor? Some of the most creative thinkers in the modern world are inventors of gadgets and tools that improve peoples' daily lives. These types of people reach for the sky by not being afraid to try new ideas and find new ways of thinking.

Almost everything you use on a daily basis could be called an "invention". Take a moment to think about different items you use each day including: pens, notebooks, backpacks, mirrors, whiteboards, computers, telephones, and more! You can probably think of other things, as well. When and where were these items invented? What other items do you wonder about? How were these items invented—and by whom? This project will give you an opportunity to find answers to these exact questions. To do so, you can do some research using the Web and some non-fiction books. This project will also give you a chance to reflect on the patterns of inventions over time. What current inventions are making news? Which inventions have we not even dreamed of? Do you have what it takes to predict trends? Most importantly, this project will give you the opportunity to do some inventing of your own!



# Charting Your Course

Inventions that stand the test of time are truly amazing to study. Do you know any inventions that were created before the 20<sup>th</sup> century? Sure you do! Screwdrivers were invented in the 15<sup>th</sup> century! In 1564, pencils were invented! The first eyeglasses were invented around 1270! Can you believe items invented so long ago are still useful and necessary today? Here's another invention that might surprise you: marshmallows were invented over three thousand years ago! They were first documented by Egyptians who made them from a plant sugar found in marshes. Does it sound exciting to invent things like tools and treats? What types of inventions would be exciting for you to create?

You might be interested in reading one of the *fictional books* below to whet your creative appetite. Take a look in your local library. If you can't find these books, ask a librarian to help you find some other books about inventors and inventions. He or she will be happy to direct you!

**Ben and Me** by [Robert Lawson](#) (Little, Brown, 1988).

ISBN: 0316517305

*Benjamin Franklin's companion, Amos the mouse, recounts how he was responsible for Franklin's inventions and discoveries.*

**Time Machine: An Invention** by H. G. Wells (Tor Books; Reissue edition, 1995).

ISBN: 0812505042

*A scientist invents a time machine and uses it to travel to the year 802,701 A.D., where he discovers the childlike Eloi and the hideous underground Morlocks.*

Are you ready to get started now on some inventing of your own? In order to create an invention, you will have to find a problem to solve. Start by brainstorming all of the problems you believe can be solved with an invention. Take a notebook and write down your list. Think

of lots of ideas—and make sure to get them all down on paper. In this stage of the project there are no wrong, silly or impossible ideas! Your goal here is quantity, not quality. Look for a variety of possibilities and be unusual. Feel free to add details and encourage yourself to look for wild and different ideas. Give yourself plenty of time to develop and list your ideas.

When your list is finished, reread it. Have you thought of problems from many different contexts? Think about items that you use at home and items you use at school. Think about communication troubles, environmental problems, governmental problems, societal problems, and entertainment problems. Think hard and keep writing different ideas in your notebook.

Add to your list by conducting a survey. In your survey, you can ask other people what “bugs” them about the items or situations they encounter daily, or what doesn’t work the way they think it should. After a few surveys, your list should be quite long! We all have our “pet peeves” or things that bother us, and most people are more than happy to talk about them!



From your list you should identify a few problems that you would be interested in trying to solve. To help you figure out the best way to find a solution to the problem, you should try using a brainstorming activity that people use to help think of a variety of solutions. One tool for brainstorming is called SCAMPER. “SCAMPER” is an acronym. Do you know what an acronym is? It means that each letter in the word stands for the first letter of another word. One acronym you probably use everyday is TV, which as you know, stands for television.

SCAMPER stands for **S**ubstitute, **C**ombine, **A**dapt, **M**odify/magnify/minify, **P**ut to other uses,

Eliminate, Reverse/rearrange. Take a look at the following website to learn how to use SCAMPER to help you create good ideas:

**SCAMPER Training**

<http://www.brainstorming.co.uk/tutorials/scampertutorial.html>

*Learn how to use this brainstorming technique to come up with a variety of unique ideas.*

Go through the SCAMPER process with a few ideas from your list that you find most interesting. Then narrow down your options to just one or two ideas that you really like.

Ask yourself the following questions:

1. Will this invention solve a problem?
2. Is it something no one has ever thought of before?
3. Is this idea a new invention and not found in a store or a book?
4. Is it an improvement on something that has already been invented?
5. Is it something that someone will find useful?
6. Will I enjoy creating it?

You can probably think of some other questions to ask yourself. If you answer yes to these questions for one of your ideas, then you are ready to begin creating your invention! If you answer “no” for most of the questions, then go back to your original list of ideas and try SCAMPER until you come up with a new and better idea for an invention.

**Keeping a Log**

It is very important to keep a record of your work. You can do that by keeping a log, which is a notebook that tells how and when you had different ideas and tried different solutions. You can use the same notebook in which you did your brainstorming for your invention log. In it you can record your ideas and inspirations. Your log can prove you were the first person to have the idea, and it can help you plan your invention. It becomes an official record of the progress of your invention.

Describe all your ideas in your log and tell how you went about exploring them. Make drawings of your ideas. Date your notes every time you work. When you have finished a page in your log, have a parent or friend sign it as a witness that the work and ideas are your own.

Your complete inventor's log becomes important evidence of when you first got your idea and that you worked hard on it. This evidence may help you if you decide someday to apply for a patent. A patent is the way the government protects inventors. It says that no one else may manufacture or sell a certain invention but the person who has the patent.

Remember the questions you asked yourself when you were choosing what to invent? Your reasons for choosing a particular idea should go into your log along with the date. You can record information about your ideas in any way you choose, but you should include the following information: your name, grade, school, the date of your entry, the time, place, your idea, reasons you choose the idea, a drawing of the idea, a witness signature, with date, time and place filled in, as well.

Now the work begins! Before you start, you should make a plan so your work will be easier. A written plan takes some time, but it will help you think through your idea before you begin and maybe save you trouble along the way.

Begin your plan on a new page in your log. There are four parts of your plan that you should record.

### ***Part 1: General Information***

Tell in one or two sentences what you intend to invent. Don't worry if you don't have a name for your invention yet. Also, make drawings of how your invention will look and work. Label your drawings clearly.



### ***Part 2: Materials***

List all the things you think you will need to build your invention. Make sure you include everything, even things like glue and staples. If you don't know the name of something you can draw a picture of it.

### ***Part 3: Steps to Follow***

List all the steps you will need to do to complete your invention in sequential order. Close your eyes and picture how you will begin. Write that down. Then picture the second step and write that down.

Continue to do this until you have completed your invention in your mind and on paper. You can include drawings here, too. This step may take several pages in your log.

### ***Part 4: Possible Problems***

List some of the problems you think you might have with this project. All inventors run into problems. Trying to think of some ahead of time may keep them from happening when you begin to make your invention.

## **Creating your Invention**

Now the building begins! Make sure you have all the materials on your list before you begin. This will save you time. Find a place to work where you are sure you can leave your project and materials. It may be a good idea to create your invention at home because it may take you a while to finish and you don't want to lose any important pieces.

Follow the steps you listed in Part 3 of your plan. Try your invention at various stages of its development. What works? What doesn't work? Don't be afraid to make changes to your plan. All inventors run into obstacles that require new ideas and solutions. If you do add or

change any steps, be sure to record the changes in your log. As you work, also write down any problems you meet and how you solve them.

While you are working, you may find that lots of ideas pass through your mind. If you have a tape-recorder, you can speak your ideas as you go. Then you can play the tape back later and write your thoughts down in your log. If you don't have a tape recorder, that's fine too. You may just want to stop when you have a good idea to write it in your log.

### **Naming your Invention**

So now you have created your own invention! But what will you call it? It deserves a great name. There are many kinds of names.

- ⌘ A name such as “hair dryer” can describe what an invention does.
- ⌘ A name such as “skateboard” can tell what an invention is made of.
- ⌘ An invention can tell who invented it. For example the Ferris wheel is named for its inventor Mr. G. W. G. Ferris.
- ⌘ A name can be funny, as the names of many toys are. Can you think of some examples?

Make a list of your ideas for names of your invention. Play with words and combinations of words. Ask other people for ideas. Have other people listen to your list, and watch their reactions. The right name is important because it can make people interested in your invention and help them to understand it.



### **Sharing your Invention**

Can you think of a certain person or people who would benefit from your invention? Try to find out who those people might be. For example, a local community group might really be

interested in your invention if it helps solve a problem of the community. If your invention solves a school-related problem, you may want to share it with your teacher, classmates, or principal. Reach out and share your great work!

If you are convinced that your invention is really good, you may want to enter it in a contest. Many schools, communities and states have contests for young inventors. Take a look at the website below for invention contests.

### **Young Inventors Contest**

<http://www.nsta.org/programs/craftsman/>

*The Young Inventors Awards Program challenges students to use creativity and imagination along with science, technology, and mechanical ability to invent or modify a tool. This competition began in 1996.*

### **Create Your Own Website**

<http://www.thinkquest.org/competition/index.shtml>

*Click on this link to find out information about the bi-annual website competition. You can team up with students and teachers across the country to make your website a success.*

### **Exploravision Awards**

<http://inventors.about.com/gi/dynamic/offsite.htm?zi=1/XJ&sdn=inventors&zu=http://www.toshiba.com/tai/exploravision/>

*ExploraVision is a competition for all students in grades K-12 attending a school in the U.S., Canada, U.S. Territory or a Department of Defense school. It is designed to encourage students to combine their imagination with their knowledge of science and technology to explore visions of the future.*

You might be interested in learning more about inventing and inventions as a result of this project. If that's the case, then look into these summer workshops below.

### **Camp Invention**

[http://inventors.about.com/gi/dynamic/offsite.htm?zi=1/XJ&sdn=inventors&zu=http://www.invent.org/camp\\_invention/](http://inventors.about.com/gi/dynamic/offsite.htm?zi=1/XJ&sdn=inventors&zu=http://www.invent.org/camp_invention/)

*Camp Invention is a week-long summer day camp offered in local elementary schools across the country for children in the second through sixth grades. Click on the website to find the site nearest you.*

### **Kids Invent Toys**

[https://www.kidsinvent.net/miva/merchant.mvc?Screen=PLST&Store\\_Code=K](https://www.kidsinvent.net/miva/merchant.mvc?Screen=PLST&Store_Code=K)

*For about \$10.00 you can download lessons that will help you to invent different types of toys. Make sure to ask your parents or guardians before you purchase anything online!*

Take a trip to your local library to pick up a great book and learn more about people and their inventions. These books are both inspirational and informative.

**Brainstorm!: The Stories of Twenty American Kid Inventors** by Tom Tucker (Farrar, Straus and Giroux, 1998).

ISBN: 0374409285.

*This book describes some of the amazing inventions of the past and present that have come from young Americans, ages eight to 19. Some of these young inventors and their inventions were quite well-known at one time, others never received much attention. However, they were all kids like you who created cool things!*

**Steven Caney's Invention Book** by Steven Caney. (Workman Publishing Company; Reissue edition, 1985).

ISBN: 0894800760.

*A project book for the inventors like you, with activities, a list of "contraptions" in need of invention, and the stories behind thirty-six existing inventions.*

**How to Enter and Win an Invention Contest** by Ed. Sobey (Enslow Publishers, 1999).

ISBN: 0766011739.

This book describes the history and process of invention. It also lists national middle school and high school level invention contests and entrance rules, regional inventors' clubs, and ideas for projects.

**Inventing Stuff** by Ed Sobey (Dale Seymour Publications, 1995).

ISBN: 0866519378.

*Sharpen up your critical thinking and problem solving skills as you learn to ask questions, look for patterns, and keep tinkering with your inventions! This book information on inventing backwards and finding new uses for things as well as facts about inventors and inventions. Information about invention contests help youngsters find outlets for their inventions.*

**A Nation of Inventors** Edited by JoAnne Weisman Deitch. (Discovery Enterprises Ltd; 1st ed edition, 2001).

ISBN: 1579600778

*Do you know what primary sources are? You will if you read this book! Here's a hint: primary sources include documents such as journals, old advertisements and newspaper articles from the past. In this book, you can learn about American inventors and their inventions by exploring primary documents from their lives. To help you learn, you will also find definitions of words you may not know, discussion question, and follow-up activities .*

**Nobel Prize Women in Science: Their Lives, Struggles and Momentous Discoveries** by [Sharon Bertsch McGrayne](#) (National Academies Press; 2nd edition, 2001).  
ISBN: 0309072700.

*This book tells the stories of fifteen women scientists who either won a Nobel Prize or played an important role in a Nobel Prize-winning project. This book shows the prejudice these female scientists faced both as students and as researchers. They succeeded because they were passionate about science.*

**Extraordinary Women Scientists (Extraordinary People)** by [Darlene Stille](#) (Children's Press (CT); Reprint edition, 1995).  
ISBN: 0516405853.

*Learn about forty-nine women scientists from the past two –hundred years. Each short biography includes a picture of the scientist, information about her personal life, and account of challenges she faced. Most importantly, you will find a summary of each scientist's contribution to society.*

These two books are geared towards adult readers, but they are filled with great information.

**Inventing, Inventions, and Inventors: A teaching resource book** by Jerry D. Flack (Teacher Ideas Press, 1989).  
ISBN: 0872877477.

*A great book filled with information about past inventions and activities to help you learn critical thinking skills. This book is also designed to help you predict inventions needed in the future based on what's been done so far. Last but not least, you will find lots of information about invention contests and programs!*

**Inventing Beauty: A History of the Innovations that Have Made Us Beautiful** by Teresa Riordan (Broadway, 2004)  
ISBN: 0767914511.

*In this interesting book about beauty inventions, you will learn about discoveries designed to fight wrinkles, make lipstick last and give your face a lift! This book shows how for hundreds of years, people have been inventing things that are supposed to make us all more beautiful. Do you think they succeed?*

These websites will inspire you with stories about many famous inventors and help fuel your creativity:

**[Invention Dimension](#)**

<http://web.mit.edu/invent/invent-main.html>

*Learning about inventions can be fun! Read about the inventor of the week, play games and do puzzles, and use the inventor's handbook to find answers to many questions you will have.*

### [Become an Inventor](#)

<http://library.thinkquest.org/C006094/>

*This fun ThinkQuest will help teach you to find and solve problems, perform patent searches, and market your ideas. Learn about the history of inventing, problems of the future logical thinking, tricks for inventing, and more.*

### [Inventions and their Inventors](#)

<http://library.thinkquest.org/5847/?tqskip1=1>

*This website is about the people who have shaped our lives with their inventions. You can read articles, play a game, search timelines for inventions, and even take a quiz. There are good links, and if you have an idea, click on the “share inventions” link. Lots of fun!*

### [Exploring Leonardo da Vinci](#)

<http://www.mos.org/sln/Leonardo/LeoHomePage.html>

*This is a great website about Leonardo da Vinci’s contributions to society. The four sections of the website provide information on Leonardo's futuristic inventions, techniques for drawing perspective, his life, and his curious habit of writing in reverse.*

### [National Inventors Hall of Fame](#)

[http://www.invent.org/hall\\_of\\_fame/1\\_4\\_0\\_channels.asp](http://www.invent.org/hall_of_fame/1_4_0_channels.asp)

*Find a topic that interests you and search within that link to see the people who made these inventions possible.*

### [Renaissance Inventions](#)

<http://www.twingroves.district96.k12.il.us/Renaissance/University/Inventions/Inventions.html>

*Go back in time to learn about seven inventions from around the 15<sup>th</sup> century. Learn about the people and events that led up to the important inventions from long ago.*

# Treasure Chest of Tools



**Brainstorm!:** *The Stories of Twenty American Kid Inventors* by Tom Tucker (Farrar, Straus, and Giroux, 1998). ISBN: 0374409285

**Steven Caney's Invention Book** by Steven Caney (Workman Publishing Company; Reissue edition, 1985). ISBN: 0894800760

**How to Enter and Win an Invention Contest** by Ed. Sobey (Enslow Publishers, 1999). ISBN: 0766011739

**Inventing Stuff** by Ed Sobey (Dale Seymour Publications, 1995). ISBN: 0-86651-937-8

**A Nation of Inventors** Edited by JoAnne Weisman Deitch (Discovery Enterprises Ltd; 1<sup>st</sup> ed., 2001). ISBN: 1579600778

**Nobel Prize Women in Science: Their Lives, Struggles and Momentous Discoveries** by Sharon Bertsch McGrayne (National Academies Press; 2<sup>nd</sup> edition, 2001). ISBN: 0309072700

**Extraordinary Women Scientists (Extraordinary People)** by Darlene Stille (Children's Press; Reprint edition, 1995). ISBN: 0516405853

**Inventing, Inventions, and Inventors: A teaching resource book** by Jerry D. Flack (Teacher Ideas Press, 1989). ISBN: 0872877477

**Inventing Beauty: A History of the Innovations that Have Made Us Beautiful** by Teresa Riordan (Broadway, 2004). ISBN: 0767914511



Internet

#### **Invention Dimension**

<http://web.mit.edu/invent/invent-main.html>

#### **Become an Inventor**

<http://library.thinkquest.org/C006094/>

#### **Inventions and their Inventors**

<http://library.thinkquest.org/5847/?tqskip1=1>

#### **Exploring Leonardo daVinci**

<http://www.mos.org/sln/Leonardo/LeoHomePage.html>

#### **National Inventors Hall of Fame**

[http://www.invent.org/hall\\_of\\_fame/1\\_4\\_0\\_channels.asp](http://www.invent.org/hall_of_fame/1_4_0_channels.asp)

#### **Renaissance Inventions**

<http://www.twingroves.district96.k12.il.us/Renaissance/University/Inventions/Inventions.html>



## SEM Xplorations

### Cloudy with a Chance of . . . : Become a Weather Forecaster

Will it rain on your field trip to the zoo? Is it supposed to snow on Halloween? No one knows for sure, but weather forecasters can often make accurate predictions. Weather forecasters, or **meteorologists** have a hard job. They not only have to report, or describe, what the weather was yesterday, they also have to try to predict correctly if tomorrow and the next day will be sunny or stormy.

Weather forecasters use many instruments, or tools, that measure and record information. For example, they use **thermometers** to measure temperature—how hot or cold it is. They use **barometers** to measure air pressure—the force with which the air presses down. They use **rain gauges** to measure the amount of rainfall.

Sometimes forecasters tell us that it will rain, but it doesn't. Sometimes they tell us that it will be sunny, but it is cloudy. It is hard to predict the weather because so many different things can happen to change it.



## Charting Your Course

### Understanding Weather Variables

The different things that can change weather are called **weather variables**. They are called variables because they vary, or change.



Wind is one weather variable. Wind can blow hard or be a gentle breeze. It can come from the east or the west, the north or the south. The wind can change when it blows across the ocean or over mountains.

The way the wind blows has a lot to do with what our weather will be like. It can make the weather change quickly, too.

You may want to learn how to measure wind and other weather variables. You can find out how to make some of your own weather instruments and use them to learn how weather forecasters do their work.

If you become very good at using these instruments, you may be able to make your own weather forecasts. Below are some ways you might be able to use your forecast. Can you think of others?

- 💧 To tell people how to dress for tomorrow's weather
- 💧 To help the teachers and principal plan to have indoor or outdoor recess
- 💧 To let school bus drivers know if the weather will make their jobs harder

When you have made some weather reporting instruments and know how to use them, you can do another project. You can compare your forecast with the ones on radio and television and in the newspaper.

When you compare forecasts, you look for things that are the same and things that are different in each forecast. You may want to compare forecasts to see which one is right more often. Is the newspaper, the radio, or the television forecast best? Is your forecast better than any of them?

## Making Weather Instruments

Ask your librarian to help you find books the books listed below, or other books about making weather instruments and predicting the weather.

**The Kids' Book of Weather Forecasting** by Mark Breem & Kathleen Friestad (Sagebrush Bound, 2000).

ISBN: 0885593392

*This fun book uses easy-to-read instructions, cartoons and diagrams to teach kids about weather. Learn how to make a barometer, a rain gauge, a wind-vane and other weather-predicting instruments. Then learn how to use them!*

**How the Weather Works** by Michael Allaby (Readers Digest, 1999).

ISBN: 0762102349

*Here you will find lots of interesting experiments to help you learn about the weather. You can also use the book's "cloud atlas" to learn about what's really going on in those gray skies.*

**Weather Forecasting** by Gail Gibbons (Aladdin, 1993).

ISBN: 0689716834

*This book provides information about weather as it changes with the seasons, the job of weather forecasting, scientific words used by forecasters and more. Plenty of brightly colored pictures illustrate how weather affects everyone.*

**Weather** by William J. Burroughs, Bob Crowder, Ted Robertson, Eleanor Vallier-Talbot, and Richard Whitaker (The Nature Company, 1996).

ISBN: 0737000805

*Poems, charts, diagrams and pictures—all about weather—make this book interesting and fun to read. In addition, you will find helpful information about the history of weather forecasting, the layers of the atmosphere, international weather symbols, and more.*

**The USA Today Weather Book : An Easy-To-Understand Guide to the USA's Weather**, by Jack Williams (Vintage Books, 1992).

ISBN: 0679776656

*You will find a wealth of information here! Learn about weather disasters, weather science—such as why the wind changes direction with altitude—how weather affects our daily lives, and more. You will also enjoy the colorful maps and diagrams.*

**The Handy Weather Answer Book** by Walter A. Lyons (Visible Ink, 1997).

ISBN: 0787610348

*What is a hypercane? Which continent is the driest? What is the difference between climate and weather? Learn the answers to these questions and many others in this "handy" book.*

**Eyewitness Books *Weather*** by Brian Cosgrove (Alfred A. Knopf, Inc, 1991).

ISBN: 0679807845

*In this book you will find lots of information about weather science and its tools. Photographs and other graphics, as well as some experiments that you can do at home, help to make the information easier to understand.*



The following directions tell how to make one of the weather instruments you will need for this project. You may want to ask someone older to help you with this part of your project.

### ***Make a Rain Gauge***

Earlier in the project, you learned that a rain gauge is used to measure the amount of rain that falls. A rain gauge helps you record weather information. Now you can make your own rain gauge. You will need quite a few materials, and you will have steps to follow.

If you are reading this on the computer, you will need to write down the materials list as well as the directions, or you will need to print this information. If you print this information, you can put checkmarks in the boxes as you collect each item or as you complete each step.

### **Things You Will Need**

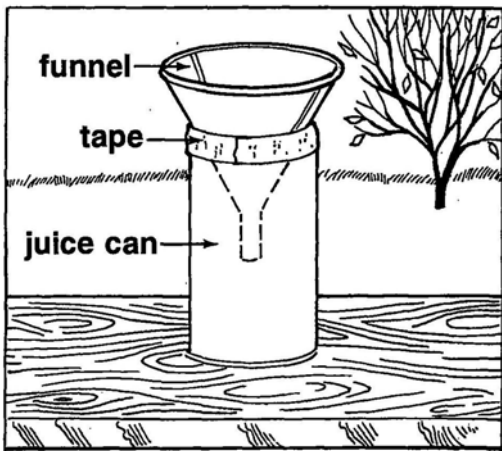
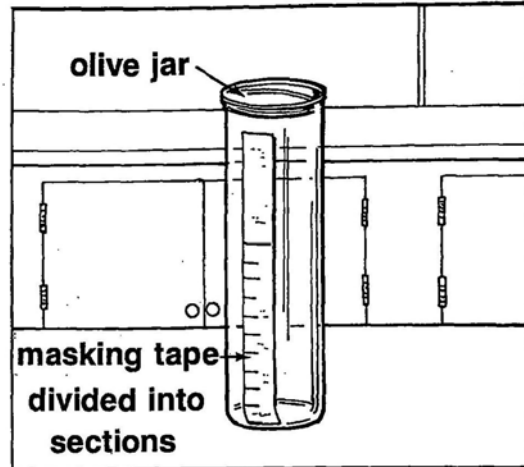
- a small, narrow glass jar (an olive jar would be good)
- masking tape
- a large juice can
- water
- a ruler
- a marking pen
- a funnel

## Steps to Follow

Look at the diagram as you follow each step. It will help you understand what to do.

### Diagram

- 1. Take the glass jar and put a piece of masking tape along the side from top to bottom
- 2. Take the top off the juice can.
- 3. Pour water into the juice can until it is one inch deep. Measure the depth of the water carefully with a ruler.
- 4. Pour the water from the juice can into the glass jar.
- 5. Use the marking pen to mark on the masking tape where the water level is. This line will stand for one inch of rain.



- 6. Use a ruler to divide the marked-off section of the masking tape into ten equal sections. Each line you make will stand for one tenth of an inch of rain.
- 7. Put the plastic funnel into the juice can. Tape the funnel in place.
- 8. Find an open place outside where you can put your rain gauge. Try to find a flat place where your gauge will be up off the ground. Be sure to ask permission first. Do not put your rain gauge under a tree or an overhanging roof.

Leave the glass jar inside the house or classroom.

Now you are ready to measure the rainfall. Each time it rains, wait until the rain has stopped. Then take the funnel out of the can and pour the rain water into the glass jar. Look at the marks on the side of the jar to tell how much rain fell. Make a chart to keep track of the rainfall to use in your weather report.

If you enjoyed this activity, you can visit this website to learn how to make other instruments for your weather station:

**[Make Your Own Weather Station](http://www.fi.edu/weather/todo/todo.html)**

<http://www.fi.edu/weather/todo/todo.html>

*Become an amateur meteorologist! Learn how to keep a weather journal, how to build a barometer, hygrometer and more.*

## **Measuring Wind Speed**

Weather forecasters use an instrument called an anemometer to measure the speed of the wind. Knowing the wind speed helps forecasters predict how fast the weather may change. You may want to find directions that tell how to make your own anemometer.

There is a way that you can tell the speed of the wind without using an anemometer. A chart called The Beaufort Wind Scale can help you make a pretty good guess about the speed at which the wind is blowing.

Sir Francis Beaufort was an officer in the British navy in the days of sailing ships. He developed a table, or list, that describes the effects of the wind at different speeds. The Beaufort Wind Scale in the box on the following page is a modern version of the one Sir Beaufort developed.

## Beaufort Wind Scale

Beaufort number	Name	Miles per hour	Effect on land
0	Calm	less than 1	Calm; smoke rises vertically.
1	Light Air	1-3	Weather vanes inactive; smoke drifts with air.
2	Light Breeze	4-7	Weather vanes active; wind felt on face; leaves rustle.
3	Gentle Breeze	8-12	Leaves and small twigs move; light flags extend.
4	Moderate Breeze	13-18	Small branches sway; dust and loose paper blow about.
5	Fresh Breeze	19-24	Small trees sway; waves break on inland waters.
6	Strong Breeze	25-31	Large branches sway; umbrellas difficult to use.
7	Moderate Gale	32-38	Whole trees sway; difficult to walk against wind.
8	Fresh Gale	39-46	Twigs broken off trees; walking against wind very difficult.
9	Strong Gale	47-54	Slight damage to buildings; shingles blown off roof.
10	Whole Gale	55-63	Trees uprooted; considerable damage to buildings.
11	Storm	64-73	Widespread damage; very rare occurrence.
12-17	Hurricane	74 and above	Violent destruction.

If you study the Beaufort Wind Scale and carefully observe your surroundings, you will be able to estimate how fast the wind is blowing. Then you can include the wind speed in your weather reports and forecasts.

Want to make a wind measurement instrument? Visit this website:

**[Make an Anemometer](http://www.weatherwizkids.com/anemometer.htm)**

[www.weatherwizkids.com/anemometer.htm](http://www.weatherwizkids.com/anemometer.htm)

*Learn how to make an anemometer to measure the wind speed.*

### Reporting and Predicting the Weather

Start learning to be a weather forecaster by using your instruments to make weather reports. A weather report is a description of the weather. Measure the amount of rainfall and the wind speed every day. Use a windsock or watch a flag or the tops of trees to tell the direction from which the wind is blowing.

You will also need to check an outdoor thermometer and a barometer. Be sure to find a weather book in the library to help you use these instruments. The website below provides instructions for making a barometer to measure air pressure:

**[Make a Barometer](#)**

[www.weatherwizkids.com/barometer.htm](http://www.weatherwizkids.com/barometer.htm)

In a notebook, write down what you learn from your instruments each day. Also write down what you notice about the clouds and how the weather changes during the day. Then look at what you wrote for yesterday. Write a short weather report about yesterday's weather.

After a few weeks, you will start to see some patterns in the weather. Here are some questions to think about as you check your weather notebook.

- 💧 What kind of clouds do you see the day before it rains? Are they different from the clouds you see during and after a rainstorm?
- 💧 Does the wind always come from the same direction before it rains? Does the wind shift and come from a different direction before the rain stops?
- 💧 How does the barometer change before and after a storm?
- 💧 Does the wind speed change when the wind direction changes?

Once you begin to see patterns, try to use them to predict the weather for the next day. In addition to writing weather reports on yesterday's weather, write a weather forecast for tomorrow.

When you write your weather report for each day, check your forecast to see if you were right. Keep using your instruments, looking carefully at the weather each day, and keeping track of when you are right and when you are wrong. Soon you should become a pretty good weather forecaster!

# Launching Your Results



## Comparing Weather Forecasts

Once you have learned how to make weather forecasts, you can have fun comparing yours with the predictions on television and radio and in the newspaper.

You can use the following list of websites to look for weather forecasts:

### [The Weather Channel](http://www.weather.com/)

<http://www.weather.com/>

*On this website you can find national weather maps, forecasts, and storm coverage. This website has great pictures and videos of weather from across the country.*

### [Earth Watch Weather](http://www.earthwatch.com/)

<http://www.earthwatch.com/>

*On this site, you can check out forecasts and weather maps for places around the entire United States.*

### [Weather Whiz Kids](http://www.weatherwizkids.com/)

<http://www.weatherwizkids.com/>

*Fascinated by clouds? At this site you can learn to make them. You can also take a weather quiz, do an experiment, or see a weather forecast.*

### [Weather Maker](http://www.scholastic.com/kids/weather/)

<http://www.scholastic.com/kids/weather/>

*What if you controlled the weather? On this website you can! See what happens when you change the air pressure or the temperature.*

### [The Weather Dude](http://www.wxduke.com/)

<http://www.wxduke.com/>

This website was put together by one of the Weather Channel meteorologists.

### [Weather Cameras](http://search.earthcam.com/search_cam.php?offset=0&cat=WEA)

[http://search.earthcam.com/search\\_cam.php?offset=0&cat=WEA](http://search.earthcam.com/search_cam.php?offset=0&cat=WEA)

*Want to see what the weather is like in Australia today? This link provides access to hundreds of weather cameras broadcasting from all over the world.*



Read the newspaper or Internet forecast every day for a week. Also listen to the radio forecasts and watch television forecasts for that week. Were the forecasts right? Were your own forecasts right?

Look at the following chart. Take four sheets of paper and make four charts like this one. The first chart is for television forecasts, and the second chart is for radio forecasts. Use the third chart for newspaper or Internet forecasts and the fourth one for your own forecasts.

Some examples have been filled in to show you how to do it.

CHART OF WEATHER FORECASTS				
Forecasts from <u>the television</u>				
		Forecast	Weather	Grade
○	Day 1	Sunny	Rain	F
	Day 2	Cloudy	Cloudy	A
	Day 3	Cool, cloudy	Warm, cloudy	B
	Day 4			
	Day 5			
	Day 6			
○	Day 7			

You can see the words **the television** on the line near the top of the chart. You will print **the television, the radio, the newspaper (or Internet)**, or your own name on that line.

In the column under **Forecast**, write what the forecast said the weather would be. Then wait one day to see if the forecast was right. In the column under **Weather**, write down what the weather really was for that day.

Now you must decide if the weather forecaster did a good job of predicting the weather. Give the forecaster a grade of **A** if the forecast was correct. Give a grade of **B** if it was partly right. Give the forecast an **F** if it was all wrong.

At the end of the week, look at the grades in the last column of each chart. Think about the answers to these questions:

- 💧 Which forecaster had the best grades?
- 💧 Who was right most often?
- 💧 How did your own forecasts do?
- 💧 Were you right more or less often than the others?

When you have finished your comparison, be sure to share your work with other people. You may want to explain your project to your class and to other classes. You can show them your weather instruments and your charts. Can you think of other people who might like to know about your project?

## Treasure Chest of Tools



**The Kids' Book of Weather Forecasting** by Mark Broom & Kathleen Friestad (Sagebrush Bound, 2000). ISBN: 0885593392

**How the Weather Works** by Michael Allaby (Readers Digest, 1999). ISBN: 0762102349

**Weather Forecasting** by Gail Gibbons (Aladdin, 1993). ISBN: 0689716834

**Weather** by William J. Burroughs, Bob Crowder, Ted Robertson, Eleanor Vallier-Talbot, and Richard Whitaker (The Nature Company, 1996). ISBN: 0737000805

**The Weather Book** by Jack Williams (Vintage Books, 1992). ISBN: 0679776656

**The Handy Weather Answer Book** by Walter A. Lyons (Visible Ink, 1997). ISBN: 0787610348

**Eyewitness Books *Weather*** by Brian Cosgrove (Alfred A. Knopf, Inc, 1991). ISBN: 0679807845



## Internet

### **The Weather Channel**

<http://www.weather.com/>

### **Earth Watch Weather**

<http://www.earthwatch.com/>

### **Weather Whiz Kids**

<http://www.weatherwizkids.com/>

### **Weather Maker**

[www.scholastic.com/kids/weather/images/s-pic-interactive.gif](http://www.scholastic.com/kids/weather/images/s-pic-interactive.gif)

### **The Weather Dude**

<http://www.wxdude.com/>

### **Weather Cameras**

[http://search.earthcam.com/search\\_cam.php?offset=0&cat=WEA](http://search.earthcam.com/search_cam.php?offset=0&cat=WEA)

Directions for making rain gauge are adapted from *Science Projects for the Intermediate Grades* by Maxine Springer Schneider. Copyright © 1971 by David S. Lake Publishers, Belmont, CA 94002.

The Beaufort Wind Scale is adapted from *World Book Encyclopedia*, © 1988 World Book, Inc.



## SEM Xplorations

### **Collections from the Unknown: Create an Artifact Box**

In the *Indiana Jones* movies, Indiana's search for **ancient artifacts**, human-made objects from long ago, result in dangerous adventures. **Archaeologists** like Indiana Jones are scientists who use artifacts and **ecofacts**, natural objects such as seeds or animal bones, to study human life and activities of the past. Looking at the objects people used in their daily lives, archaeologists can learn about the cultures in which they were used or created. Take a look around the room you are in right now. What do you think archaeologists could learn about your life from the objects in the room? Since most archaeologists study artifacts from long ago, many people think that artifacts can only be historical items. However, an artifact is an object that people use or create to serve a purpose in their daily lives. You use and create artifacts every day! Trees are not artifacts; they are ecofacts because nature makes them. However, tree houses are artifacts because humans make them! Perhaps if Indiana Jones had realized that artifacts were all around him, his life would have been much less dangerous!

Do you think that the artifacts that surround people in New York City, New York are the same kinds of artifacts that surround people in San Francisco, California? Yes and no. People in New York City and San Francisco may share some common artifacts, such as silverware, soda cans, or baseball caps. But because each city has its own culture, some of the artifacts in each city are unique. For example, while people who live in New York City and San Francisco may both wear baseball caps, people in New York City are probably much more likely to wear New

York Yankees or New York Mets baseball caps than are people in San Francisco. While New York City and San Francisco residents are both surrounded by buildings, only people in San Francisco can claim Alcatraz as an artifact. Can you think of any artifacts that are unique to your town or state?

A collection of current artifacts and ecofacts from a particular town or region of the country can also inform people who are unfamiliar with that area. For example, if you live in Connecticut, you may not have any idea what Louisiana is like. But if someone from Louisiana made a box for you filled with Mardi Gras beads, a CD of Cajun music, some Spanish moss, and a toy crawfish, it would help you learn about Louisiana's culture and landscape. Artifacts and ecofacts can help people learn about the social, economic, and environmental aspects of a particular area. By studying the products produced in a town or country, people can learn about the economic wellbeing of the area and about the importance of industry and agriculture. Information about an area's weather and recreational opportunities can tell people something about the lives of the residents. People can also learn about the area's environment by finding out about the local wildlife and vegetation.



### **What is an Artifact Box?**

For several years, teachers and students from across North America have been constructing sets of twenty to twenty-five artifacts and ecofacts about their hometowns and regions. Each collection is then assembled and packaged as an Artifact Box. The box is exchanged for one from a "mystery" classroom in a distant area. Only the teacher in the classroom receiving the box knows the area from which it came.

Without revealing where the box is from, the receiving teacher shows the contents to students in the class. These students then use available reference books, Internet sites, and non-print resources to figure out the country, state or province, and town from which the artifacts came.

If you would like to create an Artifact Box about your town, city, or community, you may want to join the **Artifact Box Exchange Network**. The Artifact Network will send you the Artifact Box manual and connect you or your class with a partner for the fall or spring Artifact Box exchange. The fee for this service is \$35. If you explain the project to your teacher or principal, your school may provide the money. You may write to join the exchange network. You can find a registration form at [www.artifactbox.com](http://www.artifactbox.com). Once you've printed the form and filled it out, you're ready to mail it! Here is the address:



The Artifact Box Exchange Network  
Brian D. Reid, Director  
2807 South 4<sup>th</sup> Street  
Charleston, IL 61920

You may also join by phone. Before you call, make sure to check with your parent, guardian, or teacher because calling this number may be long distance for you. Here is the number: (217) 345-4961.

If you prefer not to join the Network, you have another option. Ask your teacher if he or she might help you find a partner from another town or state with whom you can exchange Artifact Boxes. Your teacher may be able to find an artifact exchange partner by using the Epals.com Classroom Exchange. You can find out more information about this program by going to [www.epals.com](http://www.epals.com). If your teacher finds an exchange partner for you, remind him or her

not to reveal the location of your artifact box partner! You want to detect that piece of information for yourself!



### **How To Make an Artifact Box:**

There are six steps to follow in collecting artifacts and ecofacts that are typical of your area:

**Step 1:** Brainstorming

**Step 2:** Choosing items for your box

**Step 3:** Making clue cards

**Step 4:** Categorizing your Artifact Box

**Step 5:** Developing an answer sheet

**Step 6:** Sharing your Artifact Box

#### ***Step 1: Brainstorming***

If you are making an Artifact Box, start by brainstorming ideas of objects or “artifacts” that are representative of your community. At this time, don’t worry about the sizes or shapes of your artifacts or whether something will spoil. When you brainstorm, there are no bad or silly ideas. Just think of anything that is typical—and especially of anything that is unique—to your area. Be specific. Jot down your ideas on a sheet of paper, and try to come up with at least twenty-five to thirty-five items.

You may want to ask one or more friends to brainstorm with you. The more ideas you come up with, the better! Here are a few suggestions to get your ideas flowing for your Artifact Box:

- A local road map
- A soil sample
- A food product produced in your area
- A tree leaf or flower native to your area
- A product manufactured in your area
- A picture of a famous person born in your area
- Equipment for a popular sport
- A local advertisement
- A population figure

Remember, you are an expert on your area; after all, you do live there! What ideas can you come up with that will help other students identify where you live and what it's like to live there? Going to your town hall for some brochures and information about your area may help you come up with even more ideas. Searching the Internet may help, as well. Use a search engine such as [www.yahooligans.com](http://www.yahooligans.com) or [www.ajkids.com](http://www.ajkids.com). As you brainstorm items for your Artifact Box, remember to find clues about your general region, your state or province, your region of the state, and your town or city.

### ***Step 2: Choosing Items for Your Box***

Now is the time to think about how to package your items. For instance, you couldn't include a whole tree in your box, but you could add some dried leaves from a tree that is unique to your area. You couldn't include the newest version of a computer made in your area, but you could include an advertisement for it! If refrigerators are made in your area, you could include a small toy refrigerator. A photograph could represent a famous person from your state or town.

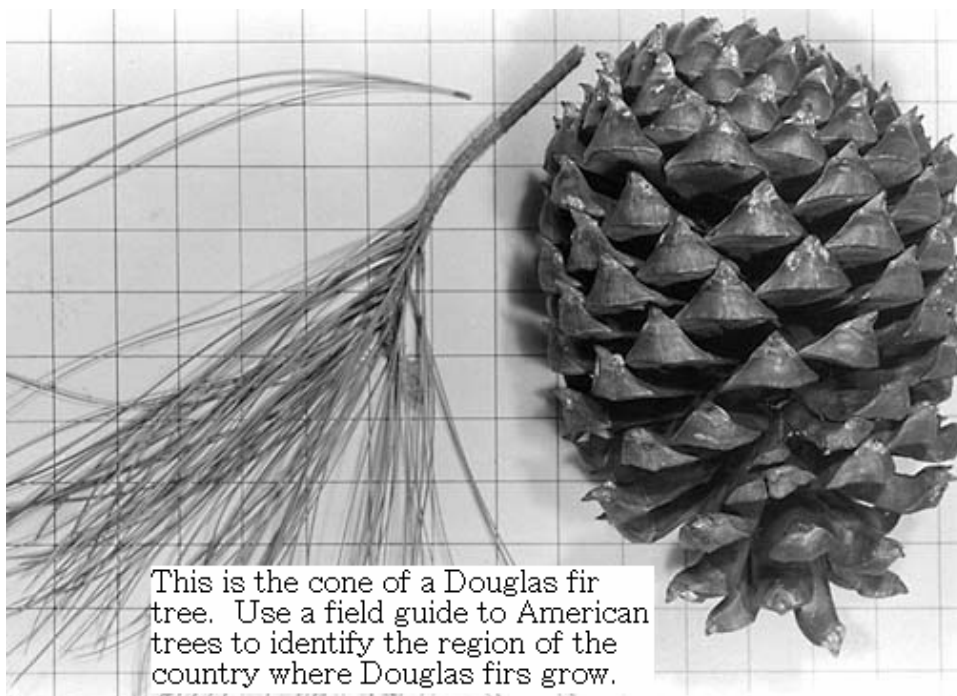


Try to include as many three-dimensional objects as possible in order to make your Artifact Box more interesting.

If you are going to send your box to another student or class, remember that it should be a kind of puzzle. The other students will use research skills to figure out where your box is from. You shouldn't make the puzzle too easy. For example, if you include a map, be sure that it doesn't show the name of your town or state. On the other hand, don't make the puzzle too hard. Make sure there is a way for other students to solve the mystery of each clue. You want your Artifact Box to be a rewarding challenge.

### ***Step 3: Making Clue Cards***

Package each artifact in a separate bag or envelope, and use string to attach a clue card to each item. Clue cards are 3-inch by 5-inch index cards with clues written on them. Make a clue for each item, listing a reference book, a website, or another resource that could be used to identify the artifact and where or when it is from. Here is an example of one kind of clue for an Artifact Box:



A more difficult clue would ask the reader to use a field guide to identify the tree that produced the cone, as well as the region in which it grows.

Make sure that the students studying your Artifact Box will be able to obtain enough information from the clue and the artifact together to be able to identify the item and figure out where or when it came from. When you are finished gathering your items, you should have at least twenty to twenty-five artifacts for your box or capsule in individual bags and with clues.

#### ***Step 4: Categorizing***

Now separate your artifacts and ecofacts into four piles that are arranged into these four categories:

1. Clues that identify the general region of the country
2. Clues that identify the state or province
3. Clues that identify a region of the state or province
4. Clues that identify your city or town

#### ***Step 5: Developing an Answer Sheet***

Now you are ready to develop an answer sheet for your Artifact Box. Begin by numbering your clue cards. The first clues will be the most general ones—those that identify the general region. Save the most specific clues—those that identify your city or town—for last.

List the number on the answer sheet. Next to each number, give the name of the artifact or ecofact and tell why it is useful in identifying your community. For example, if you included a toy tractor and sunflower seeds in your Artifact Box, your answer sheet might read:

1. Toy tractor – This clue shows that our region is mainly agricultural.
2. Sunflower seeds – This clue represents our state flower, the sunflower, which identifies our state as Kansas.

Do you see how these clues become increasingly specific?

Once you are finished with your answer sheet, enclose it in an envelope marked as follows: “Answer Sheet: DO NOT OPEN until you have attempted to solve all the clues!”

## Launching Your Results

### ***Step 6: Sharing Your Artifact Box***

Pack your artifacts carefully in a box with the envelope containing the answer sheet on top. If you are exchanging Artifact Boxes, ask your teacher to send it to the other school.

Making an Artifact Box is a great way to learn more about local history, government, economics, and everyday life. In fact, your Artifact Box should make you a real resident expert on your community! Good luck figuring out your Artifact Box partner’s location!

If you are interested in learning more about artifacts and archaeology, these resources and activities may interest you:

**Archaeology for Young Explorers: Uncovering History at Colonial Williamsburg** by Patricia Samford & David L. Ribblett. (Colonial Williamsburg Foundation, 1995).

ISBN: 087935089X

*Explore Colonial Williamsburg like an archeologist! Learn how artifacts end up in the ground, how archeologists choose dig sites, what types of artifacts have been found and how archeologists make sense of their findings.*

**The Young Oxford Book of Archaeology** by Norah Moloney. (Oxford University Press, 2000).

ISBN: 0199101000.

*Discover the study of archaeology, including the world of underwater archaeology. This book may be a challenge to read, but it will introduce you to many interesting archaeological facts!*

**Archaeology for Kids: Uncovering the Mysteries of our Past** by Richard Panchyk. (Chicago Review Press, 2001).

ISBN: 1556523955.

*Projects in this book will teach you some of the techniques archaeologists use. Build a sifting screen to use at archaeological sites!*

**The Usborne Young Scientist Archaeology** by Barbara Cork. (E.D.C. Publishing, 1985).

ISBN: 0860208656.

*Discover how archaeologists do their job in this cool book.*

### **Artifacts Gallery**

**[www.kidsdigreed.com/artifacts.asp](http://www.kidsdigreed.com/artifacts.asp)**

*Explore artifacts from the Reed Farmstead Archaeological Site in West Virginia.*

### **Dig Magazine Online**

**[www.digonsite.com](http://www.digonsite.com)**

*This archaeology magazine is just for kids, and you can read it online! Read stories about archaeologist's discoveries, and search their "fun factoids" section.*

### **Colonial Williamsburg Archaeology: Kids Page**

**<http://www.history.org/history/argy/argykids.cfm>**

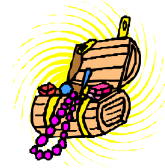
*Take the artifact challenge or stratigraphy quizzes to test your archaeological skills!*

### **Geocaching**

**[www.geocaching.com](http://www.geocaching.com)**

*Geocaching is an activity in which you use a GPS unit to hunt for caches...it's a little like searching for buried treasure. Visit the website to learn more.*

# Treasure Chest of Tools



**Archaeology for Young Explorers: Uncovering History at Colonial Williamsburg** by Patricia Samford & David L. Ribblett. (Colonial Williamsburg Foundation, 1995). ISBN: 087935089X

**The Young Oxford Book of Archaeology** by Norah Moloney. (Oxford University Press, 2000). ISBN: 0199101000.

**Archaeology for Kids: Uncovering the Mysteries of our Past** by Richard Panchyk. (Chicago Review Press, 2001). ISBN: 1556523955

**The Usborne Young Scientist Archaeology** by Barbara Cork. (E.D.C. Publishing, 1985). ISBN: 0860208656.



# Internet

**Epals.com Classroom Exchange**  
[www.epals.com](http://www.epals.com)

**Artifacts Gallery**  
[www.kidsdigreed.com/artifacts.asp](http://www.kidsdigreed.com/artifacts.asp)

**Dig Magazine Online**  
[www.digonsite.com](http://www.digonsite.com)

**Colonial Williamsburg Archaeology: Kids Page**  
<http://www.history.org/history/argy/argykids.cfm>

**Geocaching**  
[www.geocaching.com](http://www.geocaching.com)



## SEM Xplorations

### Create an Historical Diary

Have you ever kept a diary or a journal? You might not realize it, but when you write in a diary or journal, you may be making a record of present life for future **historians**, people who study history. Since historians cannot talk to people from long ago to learn about the past, they use many different sources of information, including old diaries, to answer their questions!

There are two main kinds of sources of information. **Primary sources** are materials that have been preserved from the period of time you want to study. Diaries and journals are great examples of primary sources. **Secondary sources** are materials written by people who have studied the original, or primary, sources. Historians often use **primary sources** to create **secondary sources**, such as books or encyclopedia entries. Diaries and journals from a past time period are very helpful to historians because they show what it was like to live in a particular place, at a specific time, and through certain events. Reading the diary of a person who is no longer alive is the closest thing historians can get to an interview with him or her. Who knows? If you keep a diary, the record you keep now may help historians one day in the future!



## Charting Your Course

Of course, historians are not the only people who are interested in the past. Many people are interested in what life was like long ago. In fact, writers often study history to recreate a time period in books or short stories. This type of writing is called **historical fiction**. Good writers of

historical fiction transport their readers to another place and time and let them walk around in that world without ever leaving the comforts of their own desk! If you have never read a story that tells what it was like to live in a past time period, you should read one! Listed below are a few good books to look for in your school or local library. You may choose to read a story that takes place in a time period you are already interested in, or better yet, read one about a time period about which you know very little!

**A Gathering of Days: A New England Girl's Journal, 1830-32** by Joan W. Blos. (Aladdin, 1990).

ISBN: 068971419X.

*The fictional journal of a 14-year-old girl living in New England in 1830-1832.*

**A Line in the Sand: The Alamo Diary of Lucinda Lawrence, Gonzales, Texas, 1836**, by Sherry Garland. (Scholastic Inc., 1998).

ISBN: 0590394665.

*A resident of the Texas colonies during the years 1835 and 1836, 13-year-old Lucinda describes the Texas revolution in her diary.*

**Anne Frank: The Diary of a Young Girl** by Anne Frank (Bantam, 1993).

ISBN: 0553296981.

*This journal of a Jewish girl in her early teens describes her daily life, throughout the two years she spent in hiding with her family during World War II.*

**Catherine, Called Birdy** by Karen Cushman (Clarion Books, 1994).

ISBN: 0395681863.

*Catherine, the 13-year-old daughter of an English country knight, keeps a journal in which she records the events of her life, particularly her efforts to avoid filling the traditional female role.*

**Cleopatra, Daughter of the Nile** by Kristiana Gregory (Scholastic, 1999).

ISBN: 0590819755.

*While her father is in hiding after attempts on his life, 12-year-old Cleopatra records in her diary how she fears for her own safety and hopes to survive to someday become Queen of Egypt.*

**The Diary of an Early American Boy** by Eric Sloane. (Dover Publications, 2004).

ISBN: 0486436667.

*The diary of a 15-year-old American, Noah Blake, in 1805.*

**Letters from Rifka** by Karen Hesse. (Hyperion Books for Children, 1993).

ISBN: 0140363912.

*Fleeing Russia forin 1919 and hoping to get to America, Rifka, a 13-year-old Jewish girl, keeps a journal by writing letters to her cousin about her travels, hopes, and fears.*

Read over the descriptions of the books listed above. Do you notice anything that many these books have in common? That's right! Most of these books are diaries! A lot of historical fiction is written in the form of a diary or journal. Many writers find that writing a journal as a person who lives in a certain place and time allows them to best show what the character's life was like. Would you like to imagine that you lived in a past time period and write a journal as though you lived then? Read on if you'd like to write your own historical diary!

**Important Note:**

It is important to know that there is a difference between books like *The Diary of Anne Frank* and books like *Letters from Rifka*. Do you know what the difference is? While both books talk about what it was like to be Jewish during World War II, *The Diary of Anne Frank* is a real diary that was actually written by Anne Frank and tells her true-life story. *Letters from Rifka* is not a real diary, but a piece of **historical fiction**. While *The Diary of Anne Frank* tells about the lives of real people, historical fiction, like *Letters from Rifka*, tells about the lives of fictional characters who interact with historical figures and historical events. A good way to tell if a diary you are reading is real or fictional is to look at the author's name. Is the author the same person who is writing each diary entry in the book? If so, then it is a real diary. If not, it is a fictional diary. When you write your historical diary, you will be writing **historical fiction**—fiction based on historical fact. Much of the information you will use in your diary is true, but you may create some of the characters, dialogue (conversation), and events.





## **Historical Research**

One of the most important parts of a historical fiction writer's job is doing good historical research. Why do you think historical research is important for these writers? To write as though they really know what it was like to live in a past time period, writers of historical fiction must be experts on the era about which they are writing! If you want to write a historical diary, you will need to become an expert on your time period, as well! So, put on your thinking cap! You are about to become a historical detective!

## **Selecting Your Topic**

It's time to start the process of writing your own historical diary! Begin by choosing a time period that you find interesting, such as the Revolutionary War days, the Great Depression of the 1930s, or The Civil Rights Movement of the 1950s and 1960s. If you would like to explore different time periods before you make your decision, search this website:

**[The Authentic History Center](http://www.authentichistory.com)**  
**[www.authentichistory.com](http://www.authentichistory.com)**

*Search through music, letters, diaries, and other items from different time periods in America. Choose a time period to explore by clicking on the links on the left-hand side of the webpage. Remember, this site only shows what life was like in America during these time periods, not the entire world. Do you see any time periods you'd like to research further? Perhaps you should choose this era for your diary!*

Next, decide the location for your historical diary. For example, people in the southern United States experienced the Civil War very differently than people in the northern states. The place you choose for your historical character to live will make a big difference in how he or she experiences different historical events!

Now that you know where and when you are writing about, you're ready to create the character from whose **perspective**, or viewpoint, you will write your diary. Will you show how the events of your time period affected a young person like yourself, or will you write from the point of view of an adult at the time, such as an army nurse during World War II? Will your character be male or female? Will he or she be rich or poor? Will your character be of a particular family background, such as Chinese or African-American? Remember to keep these things in mind as you are writing and researching. Here is a list of possible topics to help you get started:

- Have you ever heard of the Pony Express? Long ago, Pony Express riders carried mail to the western United States. Write your diary from the perspective of a Pony Express rider!
- Become a peasant, knight, or royal person living in the medieval period in Europe. What are your responsibilities in this role? What is going on around you?
- Write the diary of a child living in Birmingham, Alabama, during the Civil Rights Movement. In what ways does this movement affect your character's daily life if he or she is African-American? How does it affect your character if he or she is Caucasian? ("Caucasian" is a term that means "white," or from a family that originally came to the United States from a European country such as England, France or Ireland.)
- Become a Pilgrim crossing the Atlantic headed for America! Why are you leaving your home to go to an unknown land? What are your fears?
- Write the diary of a soldier or nurse in World War II. What do you think of the war? What are you experiencing?
- Become a child slave in Ancient Egypt when the pyramids are being built. What do you think of the pyramids? Are they important? What do they mean for your life?

Did this list help you come up with any of your own ideas for possible topics? Or maybe you have your own idea—and that's fine too! Once you have decided when, where, and from whose perspective you will be writing, you are ready to begin your search for information!

## Collecting Your Data

One way to organize your search for information is to think of specific questions that you want to answer. Brainstorming, or thinking of many ideas, is a good way to think of questions. When you're brainstorming, remember to write down all of your ideas, even those that seem out of the ordinary or silly, and to think of as many ideas as you can; often the best ideas come at the end of a brainstorming session. You may want to ask a friend or family member to brainstorm with you and combine your ideas. Here are some questions to help you get started with your brainstorming:

- At this time and location in history, what was life like for an average family?
- How were children treated at home and at school?
- Who were the important people in the news?
- How did people find out what was happening in the country—newspapers, radio, word of mouth, or some other way?
- What technology that we have today, such as airplanes, radios and cars, did not exist or were new inventions then?

What other questions do you want to explore? Try to brainstorm at least five other questions about your time period, and write them in your notebook. Remember, you will probably think of other questions as you do your research. Be sure to write them down.

## Finding Information

Now that you have your questions, you are ready to collect your **data** (information from various sources) to find the answers! You may choose to begin your research with a trip to the school or local library. Start by reading one or more encyclopedia articles about your time period. Doing so will give you an overall idea of what the time was like and may help you narrow your time period even further, or choose a particular event to write about. Next, look in

the card catalog or computer database of your school or public library for subjects that relate to the historical period you are researching. For instance, if you want information about World War II, you can look for subject cards with headings such as World War II, Pearl Harbor, and so on. You will probably find both fiction and non-fiction books listed. The non-fiction books will give you most of the factual information you need to write your diary. The fiction books will give you the flavor of the times and serve as example as you write your diary. You can read entire books, or you can use the index of a book to find the particular material you want.

### **Using the Internet**

The Internet is a wonderful place to find information about what it was like to live in a certain place at a particular time. Some websites allow you to tour houses from a specific time period, while others even allow you to experience what it was like to live in a past time! For example, if you would like to know what it was like to live in England during World War II, go to the [Children of World War II \(BBC\) site](http://www.bbc.co.uk/history/ww2children/): <http://www.bbc.co.uk/history/ww2children/>. This site allows you to explore a typical British home, letters from children who had to evacuate (leave home) because of bombings in London, and other sources. You can even go shopping with a Ration Book. Remember, this is a British site, so these are explanations of what it was like to be a child in Britain during World War II, not America. To find websites that might help you, use a search engine much like you would use a card catalog. Using a search engine such as [www.yahooligans.com](http://www.yahooligans.com) or [www.ajkids.com](http://www.ajkids.com), type words that relate to your topic into the search box. A few good sites to get you started are:

**[BBC History for Kids](http://www.bbc.co.uk/history/forkids/)**

[www.bbc.co.uk/history/forkids/](http://www.bbc.co.uk/history/forkids/)

*Search multiple sites about different places and times throughout the world's history*

### [Wayback: US History for Kids](http://pbskids.org/wayback)

<http://pbskids.org/wayback>

*Explore different eras in United States history on this interactive site that includes many primary sources.*

### [Authentic History Center](http://www.authentichistory.com)

[www.authentichistory.com](http://www.authentichistory.com)

*Now that you have decided on your topic, use this site to uncover even more information about your time period! This is a wonderful place to find **primary sources**, source, such as newspapers, advertisements, letters, diaries, and so on.*

## **Taking Notes**

As you read to find information, you will need to take notes to help you remember information you find in your sources. Notes are much more helpful if they are organized so you can use them easily. One way to organize your notes is to start with the questions you want to answer. From the list of questions you made, choose those that you think will be the most interesting to answer. Write each question at the top of a piece of notebook paper or an index card. As you read and find information for each question, write it down on the corresponding card or sheet of paper. Notes don't have to be long. They don't even have to be complete sentences. The best notes are just words and phrases that help you remember what you read.

Your notes may contain the following:

- Summaries of the main ideas and important details
- Lists of important facts
- Sketches of illustrations with the important parts labeled
- Ideas of your own that your research triggered
- Other information you feel is important or interesting

When you take notes, write the facts and information in your own words.

When you have finished all your research and found answers to all your questions, look over your notes. Ask yourself: Are they complete? Do they make sense? Am I an expert enough on this time period to pretend that I lived then? If so, then it is time to start writing your diary!

# Launching Your Results



## Creating Your Diary

### Planning Your Diary

You are now an expert on your time period! It's time to show all you learned by putting your information together in the form of a diary. To show what you've learned, plan to write between 10 and 15 diary entries. Before you begin writing, decide how you would like to organize your diary. Look over your notes and think about what topics you would like to cover. Did a particular aspect of life in your time period interest you? Be sure to include that topic in your entries! Will your character live through actual historical events and interact with real historical figures? If so, use your research notes to make your entries historically accurate!

### Writing Your Entries

Start your diary by writing a rough draft. Don't worry about making mistakes right now. For your first entry, it is a good idea to introduce the person from whose perspective you are writing. Let the reader know what year it is and where he or she lives. Remember to put yourself in your character's shoes! Since this is a diary that was supposed to be written in the past, when you write your diary entries, you have to pretend as though you live in that long ago time period! The diary should not be what you think of the events of your time period, but how your character viewed his or her life. Writing from another person's perspective can be difficult and requires creativity, but you can do it!

Once you have introduced yourself to your readers, you can write the rest of your entries in rough draft form. Each entry in a diary begins with a date to let the reader know when the events you are describing happened. Don't forget to date all your entries. Refer to your notes to

make your dates accurate. If you were writing as a Pony Express Rider, your diary entry might look like this:

*June 8, 1861*

*What a day! I set out about 6 a.m. and soon came to a river. My horse, Buck, seemed wary of crossing the river, and I usually trust his instinct. But, I thought I knew this river well. It's usually deep this time of year because of all the rain, but since it's been a dry month, I was sure the river would be shallow enough to cross. I guess I should have trusted Buck! Right in the middle of the river, Buck's foot...*

If you were writing as a girl who evacuated London during World War II with her siblings but without her parents, your diary entry might look like this:

*May 12, 1941*

*News of a terrible raid on London reached us today. I am so worried about mum and daddy! Being so far away from London, it's sometimes hard to picture that these terrible things are actually happening. I wonder if I'll even recognize London when I return.*

*Today I unwound the wool from two of little Mary's sweaters to make her another one. She is growing so fast, it's hard to keep up with making her new clothes from old ones. This is the 4<sup>th</sup> time we've reused the wool from her*

Make your diary as exciting, interesting, and informative as you can, and keep in mind that you are writing historical fiction. You can make up characters, conversations, and events, but the historical facts must be accurate. What can you tell about the lives of the two characters above from their diary entries?

## Editing Your Diary Entries

After you have put your ideas down on paper, read them over. Have you said what you want to say? Is your writing clear? Should any sentences be moved, cut, added, or rearranged? Read your draft to someone else or ask someone else to proofread it for you. You and your proofreader may find the following **Proofreading Checklist** helpful:

### Proofreading Checklist

Ask yourself these questions:

- ☛ 1. Did I spell all the words correctly?
- ☛ 2. Did I indent each paragraph?
- ☛ 3. Did I write each sentence as a complete thought?
- ☛ 4. Do I have any run-on sentences?
- ☛ 5. Did I begin each sentence with a capital letter?
- ☛ 6. Did I use capital letters correctly in other places?
- ☛ 7. Did I end each sentence with the correct punctuation mark?
- ☛ 8. Did I use commas, apostrophes, and other punctuation correctly?

## Making a Final Draft

Once you have edited and proofread your diary, you're ready to make your final draft! Before you write a final copy of your diary, think about how you want your diary to look. Do you want it to look like it was actually written in your time period? How will you achieve that look? Will your diary have a cover? Will you include pictures and diagrams? If so, where will you put them? You can draw and color your own illustrations, trace pictures from books, include



photographs, cut pictures out of magazines, or print pictures from your computer. Be sure to ask permission from your teacher or parent if you choose to cut magazines or print pictures from your computer. You may be able to think of other ways to include pictures. Use your imagination to make your booklet unique and interesting to read. When you have decided how you want to present your diary, write your final copy, being sure to leave the appropriate spaces for pictures and diagrams if you are including them.

### **Sharing Your Diary**

Wow! You've written an historical diary! Read it. Share it. Be proud of it. It's your very own. Now that you have completed your diary, you will want to find an audience for it. Ask your teacher if you may read it to your class or to another class. Check with the school librarian to see if your diary can be kept in the library, or ask the local historical society to see if they would like a copy of it. Congratulations on becoming a historian! What area of history will you discover next?

Treasure Chest of Tools



**A Gathering of Days: A New England Girl's Journal, 1830-32** by Joan W. Bloss. (Aladdin, 1990). ISBN: 068971419X

**A Line in the Sand: The Alamo Diary of Lucinda Lawrence, Gonzales, Texas, 1836** by Sherry Garland. (Scholastic Inc., 1998). ISBN: 0590394665.

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**Letters from Rifka** by Karen Hesse. (Hyperion Books for Children, 1993). ISBN: 0140363912.



## Internet

**The Authentic History Center**

[www.authentichistory.com](http://www.authentichistory.com)

**BBC History for Kids**

[www.bbc.co.uk/history/forkids/](http://www.bbc.co.uk/history/forkids/)

**Wayback: US History for Kids**

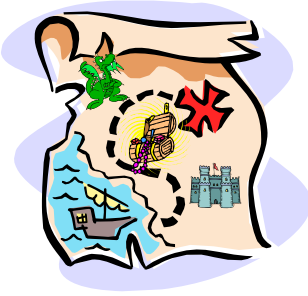
<http://pbskids.org/wayback>

**Authentic History Center**

[www.authentichistory.com](http://www.authentichistory.com)

**Children of World War II**

<http://www.bbc.co.uk/history/ww2children/>



## SEM Xplorations

### Creating a Model for a Future City

Can you imagine how people lived one hundred years ago? Can you imagine a world without cars, televisions, computers, or fast food restaurants? People who lived in the past experienced different lives than people of today. Knowing that the world changes with each passing year, stop for a moment to think about how our world will change in the future. What exactly will change, and will those changes improve or make problems for our world? No one can be quite sure, but if people are trained about how to solve problems, the world of the future can be better in many ways than the world of today. The website below provides some interesting pictures and ideas about the future. What do you think? Is this our future?

#### **Future City Painting**

<http://davidszondy.com/future/city/futurecity.htm>

*Take a look at Frank R. Paul's painting of his vision of future and scan the contents of the website as it illustrates varying views of future throughout different times.*

One of the changes that some people have predicted for our future is that more people will live in cities. Have you ever traveled to a city? Think about what you see and hear in a city. Do you hear traffic? How about sirens? Do you hear wind or birds?

Cities are different than towns because more people live in cities. In fact, large cities such as New York, Tokyo, and Paris, are home to millions of people! How do so many people live and work in the same area? Today the answer seems simple: architects and engineers designed big buildings, known as skyscrapers, to provide more space for city dwellers. This

“simple” idea, however, revolutionized city living. Today, most of our cities are shaped by the idea that the best way to fit large numbers of people into small areas is to build up into the air.

Do you know any cities that have skyscrapers?

Today, the most densely populated cities in America are New York, Los Angeles and Chicago. The first skyscraper was built in 1885 in Chicago and was named the Home Insurance Building. Often, people see large skyscrapers and busy streets and this becomes the definition of a city, but there are many other important features of a city, such as laws, transportation and cultural diversity. In this project you can plan a future city of your own. To do so, you will have to think imaginatively and productively. And remember, persons who plan cities know that there are no wrong answers, just careful planning.



This section will explain some unique features of cities that are important to consider when designing a city. Cities have a large concentration of persons from different cultures in one place, and they are known for their cultural diversity. A person’s culture refers to their traditions, holidays, and their beliefs, as well as their family’s country of origin. Persons from many cultures live in cities because housing is affordable and jobs are more plentiful. Plus, some people just love cities! They find the energy and excitement of cities fulfilling and interesting.

The mix of cultures in cities results in diverse neighborhoods, buildings, and activities. If you were traveling to a big city you might notice a variety of houses of worship, plus culturally diverse restaurants and grocery stores that are different from those you find in rural or suburban areas. For example, in a single city, you may find Korean, Spanish, Italian, and Ethiopian restaurants—just to name a few. You may also see Cuban groceries, Polish delis and French

bakeries. Cities are a wonderful for people who enjoy variety! Additionally, cities are places where art and culture can grow! You may see art museums, city libraries, courts, symphony halls, and opera halls. You may also find sports arenas, parks, fire stations, cemeteries, hotels, and hospitals. All of these services are close to each other and help to provide a variety of services to the people who live in a city. Part of the reason that so many people live in cities is that they provide many opportunities to find jobs, and a wide array of services. This is also what makes cities crowded and what makes each city unique.

Cities require special laws so people can live together fairly and peacefully—and each city may choose different types of laws. For example, the city of Salt Lake in Utah adopted a liquor policy that reduces the number of places where alcoholic beverages can be purchased. Many cities have adopted laws making cell phone use while people are driving illegal. These types of laws were enforced to protect the people who live in the city.

Some laws are not as clear. For example, in Hartford, CT, a law says that people may not educate dogs. What does this mean? Does this mean you can't take your dog to obedience school? That you can't send him or her to college? It's difficult to know the exact intention of this law! But Hartford isn't the only city in the country to have unusual laws. In Anniston, AL, it is a law that people may not wear blue jeans on Noble Street. And in Cape Coral, FL, it is unlawful to hang clothes on a clothesline outside. Are these laws reasonable? Helpful? What types of laws do you want for your city? Jot down a few ideas for important laws for your city.

In addition to considering buildings and laws for your city, you will need to think about Transportation. Many people do not use cars in large cities because parking is difficult and expensive, and too many cars cause traffic. People have worked to create easier ways to get around cities, such as subways, which are trains that run underground—or, in the case of

Chicago, IL, in the air! It helps to have trains underground or elevated above the street so they take up less space in the city. Thirteen major cities in America have subway systems that are both inexpensive and convenient to ride, and most cities have public bus systems. Railroads work with subways and busses to help people travel longer distances. Finally, airports were built in the largest cities in the world. Airports help to transport people, packages and goods across very long distances quickly and efficiently. All of these forms of transportation are important to help the city function well. What types of public transportation have you used? What kind would you like to try? How will public transportation fit into the city you are planning?



Planning your city design will be easier with the help of a few good websites.

### **Building the Windy City**

<http://library.thinkquest.org/J002846/>

*Take a virtual field trip to see unique buildings and learn about people who make Chicago a great place to visit and live.*

### **What is a City Planner?**

<http://www.planning.org/kidsandcommunity/whatisplanning/Default.htm>

*Read about two people's experiences that helped them become city planners and what each person's job requires.*

### **City Creator**

<http://www.citycreator.com/>

*Try your hand at designing a city of dreams. Pick a city theme, buildings, streets and even people to make a city you can call your own! This is a great place to spend some time understanding the elements of city design. City Creator allows you to suggest your own city theme for future consideration*



## Launching Your Results

Are you ready to begin designing your city? Remember that many cities have problems with transportation and new cities have to be planned carefully to avoid these transportation problems. Consider the forms of transportation to use for this project and the types of people you hope will live in your city. If you want to have a diverse culture, a variety of exciting restaurants and places should be included in your city. Last, once your city is designed, you may want to have some laws that meet the special needs of your city. Remember laws are meant to help people live happier and safer lives.

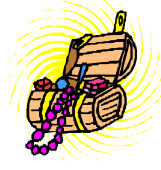
Consider these three possibilities when designing your city: ask your teacher if you can use a bulletin board to create a mural of your city, use clay or other materials to create a city by hand, or use computer animation program to create a city. For practice, you may want to try this cool website:

- ❖ [City Creator \(http://www.citycreator.com/\)](http://www.citycreator.com/).  
*Choose buildings, streets, walkways, vehicles and people to create your own, unique city. You can select from three different types of city to create a variety of looks and designs.*

Regardless of how you design your city, when you are finished, check to be sure that you have included businesses and attractions that will appeal to a variety of people. Do you have enough buildings for people to live and work in? Did you include a wide choice of transportation? If so, congratulations! You have designed your first city. This is a big accomplishment!

Did you enjoy this project? Just think: someday you may have the opportunity to design a real city. It's a big job, but somebody has to do it. Why shouldn't it be you?

# Treasure Chest of Tools



**City: A story of Roman Planning and Construction** by David Macaulay (Houghton Mifflin/Walter Lorraine Books, 1983). ISBN: 0395349222.

**The Supernaturalist** by Eoin Colfer (Hyperion, 2004). ISBN: 0786851481

**Girl Who Owned a City** by O.T. Nelson. (Sagebrush, 2003). ISBN: 0613646258

**Crispin: The Cross of Lead** by Avi (Hyperion, 2002). ISBN: 0786808284.



## Internet

### **Future City Painting**

<http://davidszondy.com/future/city/futurecity.htm>

### **Building the Windy City**

<http://library.thinkquest.org/J002846/>

### **What is a City Planner?**

<http://www.planning.org/kidsandcommunity/whatisplanning/Default.htm>

### **City Creator**

<http://www.citycreator.com/>





## SEM Xplorations

### **Dig In!: Write a Handbook for Amateur Paleontologists**

Have you ever seen pictures of dinosaur bones in a book, on television, or in a movie? Maybe you've had the chance to see actual dinosaur bones in a museum! What do you think makes these bones so special? How are these bones different from chicken bones that may have been left over from last night's dinner? The main difference between your leftovers and dinosaur bones is that dinosaur bones are a type of **fossil**, or the remains of an organism that no longer exists. Fossils have been preserved for many years in the earth's crust. What would have to happen for last night's chicken bones to become fossils?

People who discover, collect, and identify fossils are called **paleontologists**. Paleontologists are scientists who study organisms that lived in time periods long before the one in which we live by examining fossils. Although paleontologists search for fossils as their job, fossil study and collecting is a popular hobby for people of all ages all over the world. In fact, twelve-year-old **Mary Anning** of Britain discovered the *ichthyosaur* species while on a fossil hunt. Fossilized shells, sea urchins, corals, and plants can tell a story about the past, and they are more common to find than dinosaur bones. Another benefit of this type of fossil is that since they are small, they are easy to collect and display.

Fossil collecting can be a single "one-time" adventure that you might really enjoy, or it can become a hobby that you continue to pursue. By investigating a number of sources of information about fossils, you can become an amateur paleontologist. You can use the

information you collect as a paleontologist to write a handbook about fossils! If other people in your class or in your school become interested in studying fossils or starting a fossil collection, your handbook can help them get started. You may decide to start your own fossil collection, too.

To keep track of all the new things you learn about fossils and all the ideas you have for your handbook, you will need a notebook and pencils, or if you prefer you can use a computer to record and organize your ideas. You will need to take notes as you read about fossils and talk to people about them.



There are several different places where you can get information about fossils. Try to use as many different sources as you can because your interests may be sparked by different ideas!

### **The Library**

Begin your search with a trip to your school or public library. You can find useful books on fossils in both children's section and in the adult section of your public library. Look in the card catalog or library database for subject headings such as *Fossils*, *Paleontology*, and *Dinosaurs*. Some books you might look for are:

**Bones Rock! : Everything You Need to Know to be a Paleontologist** by Peter Larson and Kristin Donnan (Invisible Cities Press, 2004).

ISBN: 193122935X

*Here you will find true stories about kids who have made discoveries in paleontology and information about how to collect, clean, and study fossils. This book also provides information about special paleontological summer camps.*

**Fossils** by Frank H. Rhodes. (Golden Books Publishing Company, Inc., 2001)  
ISBN: 1582381429

*This introduction to fossils includes descriptions of the typical plants and animals of major geological eras, maps showing where fossils can be found, and the history of the development of life on earth.*

**Eyewitness: Fossil** by Paul D. Taylor and Colin Keates (DK Publishing, Inc, 2000).  
ISBN: 0789458403

*Be an eyewitness to how fossilized shells, bones, skulls, teeth, and plants paint a picture of the world that existed before modern man.*

## **Fossil Clubs**

A library is a good place to begin reading about fossils, but there are other excellent sources of information. For instance, clubs or groups of fossil collectors meet in many towns, and there may be such a club in your town.

One place to find out about fossil clubs would be at shops that sell rocks and minerals. People who are interested in rocks are often interested in fossils as well. Another place to look for information about fossil clubs is the newspaper. Clubs often run classified ads or notices in the local news sections to notify people about their meetings.

If you find a fossil club, you may be able to attend a meeting and see some fossils. Members of the group will probably be glad to answer any questions you have. They may also be interested in seeing your handbook when you have finished it. Before going to a meeting, you may want to read a little bit about the club and get some of their newsletters or information.

## **Office of Geological Surveys**

Another source of information about fossils is the office of geological surveys for your state or region. These offices provide maps, lists of places where fossils may be found, names of

books about fossils, and dates of planned field trips to fossil beds. You can find a list of addresses to these offices in:

**The Audubon Society Field Guide to North American Fossils** by Ida Thompson (Knopf, 1982).

ISBN: 0394524128

*The first all-photographic field guide to fossils found in the United States and Canada contains 474 pictures of fossils—sponges, corals, trilobites, shells, and many others.*

**Discovering Fossils: How to Find and Identify Remains of the Prehistoric Past (Fossils and Dinosaurs)** by Frank A. Garcia, et al. (Stackpole Books, 1998).

ISBN: 0811728005

*This book provides information about where to search for fossils, how to look for the right texture and shapes, and how to collect and protect your finds. Here you will also find advice on what to wear and which tools to carry, pictures for identifying and comparing common fossils, and listings of fossil exhibits, clubs, and sites.,*

## **Museums and Collections**

In **The Audubon Society Field Guide to North American Fossils** you can find a list of major fossil collections in the United States and Canada. A visit to a collection can provide you with a wealth of information about the fossils. The pamphlets, books, lectures, and films you may see along with the collections can also help. You may want to include in your handbook the addresses of your state or regional geological survey and the major fossil collections near your area.

## **The Internet**

The Internet is a great resource for researching information about fossils and looking up addresses for fossil clubs, museums, and collections. Search engines like [www.yoohooligans.com](http://www.yoohooligans.com) and [www.ajkids.com](http://www.ajkids.com) are very helpful. Here are some other sites you might find useful:

### **PaeleontOlogy: The Big Dig**

<http://ology.amnh.org/paleontology/>

*Take a virtual field trip to a paleontological dig site, and read “interviews” with fossils to learn how they became fossil, and what scientists discover by studying them. This site also has many other paleontology-related activities for you to do, such as learning how to keep a field journal!*

### **Yahooligans Science: Fossils**

<http://yahooligans.yahoo.com/content/science/brainpop/movie?id=fossils>

*Watch an animated movie about the different types of fossils and the way they form, and then take a quiz to show what you learned!*

### **Science News for Kids: Dinosaurs & Fossils**

<http://www.sciencenewsforkids.org/pages/search.asp?catid=33>

*Read articles about the new discoveries made by paleontologists in their study of fossils.*

### **Getting into the Fossil Record**

[www.ucmp.berkeley.edu/education/explorations/tours/fossil/5to8/Intro.html](http://www.ucmp.berkeley.edu/education/explorations/tours/fossil/5to8/Intro.html)

*This site includes animated and illustrated pictures of how organisms become fossils and how scientists discover and learn from them.*

### **Sue at the Field Museum**

[www.fieldmuseum.org/sue/](http://www.fieldmuseum.org/sue/)

*Get to know Sue, “[t]he largest, most complete, best-preserved T. Rex” ever found. You can learn about her height, weight and brain size, her discovery, and her significance to the field of paleontology on this virtual field trip of The Field Museum in Chicago.*



## **Planning Your Handbook**

As you do your research, you must decide which information about fossils to include in your handbook. The subject is just too big to include everything! But how will you know what to include and what to leave out? On the following pages you will find some things to consider when making your decisions.

## **Audience**

Think about your audience. Who will be using your handbook? If students younger than you will use it, you must keep in mind what they can understand as you choose your topics and words. If you plan to share the handbook with students your own age or slightly older, you should write with their interests and abilities in mind. You might find it helpful to ask a few students in different age groups what kinds of information they would like to see in a handbook about fossils.

## **Topics**

The following list suggests topics you might want to include in your handbook. Remember, you do not have to include all of these topics in your handbook; you may think of other topics to add instead. That decision is yours.

- The stories fossils tell
- How fossils are formed
- The different types of fossils
- The different types of fossil-bearing rock
- The best places to search for fossils
- Tools needed for fossil collecting
- How to remove fossils from rock
- How to clean and care for fossils
- How to label and display fossils
- Making casts of fossils
- How to identify fossils

# Launching Your Results



## **Making Your Handbook**

Now you are ready to write your handbook. As you are writing your handbook for other students, remember to keep in mind the age of your audience. First, write a rough draft to get all your ideas down on paper. Then reread it to make sure the ideas are in a logical order. Try reading it to someone in the age group it is meant for and asking for comments and suggestions.

You may have to write parts of your handbook more than once to get it just the way you want it. Most writers call this “**Revision.**” Don’t get discouraged! Revising is a process that all writers use to make their work better.

When you have expressed your ideas the way you want, check your spelling and punctuation to make sure they are correct. Since you are writing your handbook for other people to use, you want to make sure that it is as clear and readable as possible. Another great editing technique is to ask a friend to proofread your handbook. You and your friend can use the Proofreading Checklist to help you edit:

## Proofreading Checklist

Ask yourself these questions:

- ☛ 1. Did I spell all the words correctly?
- ☛ 2. Did I indent each paragraph?
- ☛ 3. Did I write each sentence as a complete thought?
- ☛ 4. Do I have any run-on sentences?
- ☛ 5. Did I begin each sentence with a capital letter?
- ☛ 6. Did I use capital letters correctly in other places?
- ☛ 7. Did I end each sentence with the correct punctuation mark?
- ☛ 8. Did I use commas, apostrophes, and other punctuation correctly?

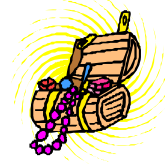
Before you make your final copy, decide how you are going to illustrate your handbook. Will you draw pictures yourself, trace them, or ask a friend to draw them? Will you leave the illustrations black and white or color them with crayons, paints, or markers? Plan where your illustrations will go, so you can leave room for them on the right pages. Then write your final copy and add the illustrations.

Put the pages together in a three-ring binder or make a cover from construction paper. You can use colorful stickers or drawings to decorate the cover. Don't forget to give your handbook a title and put your name on the cover as the author. If a friend did the illustrations, write "*Illustrated by*" and your friend's name on the cover.



Now you're ready to share your handbook with other students and fossil collectors! If you enjoyed this project, you might want to consider starting your own fossil collection. You might also consider a career as a paleontologist!

# Treasure Chest of Tools



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**Fossils** by Frank H. Rhodes. (Golden Books Publishing Company, Inc., 2001). ISBN: 1582381429.

**Eyewitness: Fossil** by Paul D. Taylor and Colin Keates (DK Publishing, Inc, 2000). ISBN: 0789458403

**The Audubon Society Field Guide to North American Fossils** by Ida Thompson (Knopf, 1982). ISBN: 0394524128.

**Discovering Fossils: How to Find and Identify Remains of the Prehistoric Past (Fossils and Dinosaurs)** by Frank A. Garcia et al. (Stackpole Books, 1998). ISBN: 0811728005.



## Internet

**PaleontOlogy: The Big Dig**

<http://ology.amnh.org/paleontology/>

**Yahooligans Science: Fossils**

<http://yahooligans.yahoo.com/content/science/brainpop/movie?id=fossils>

**Science News for Kids: Dinosaurs & Fossils**

<http://www.sciencenewsforkids.org/pages/search.asp?catid=33>

**Getting into the Fossil Record**

[www.ucmp.berkeley.edu/education/explorations/tours/fossil/5to8/Intro.html](http://www.ucmp.berkeley.edu/education/explorations/tours/fossil/5to8/Intro.html)

**Sue at the Field Museum**

[www.fieldmuseum.org/sue/](http://www.fieldmuseum.org/sue/)



## SEM Xplorations

### **Embody Your Dreams!: Become a Choreographer**

Have you ever seen a music video in which your favorite singer or rapper performs in front of a group of talented dancers? Have you ever watched a ballerina soar across a stage? If so, your attention was probably focused on the physical grace and presence of the performers. The interesting thing about dance, however, is that there is a person you never see onstage who is present in every perfect move. This person is the choreographer. A choreographer is an artist who builds a story to express a piece of music. It would not be an exaggeration to say that a dance is the physical embodiment of the choreographer's imagination.

Would you like to see your ideas take life in dance? If so, you could try choreography. You don't even need to have any dance training! Dancing and choreographing, although related, are very different skills. Many of the best dancers never attempt choreography, and many choreographers are much more skilled at designing dances than performing them.



## Charting Your Course

There are several stages to choreographing:

- Create a dance plan for a piece of music.
- Conduct rehearsals with a group of dancers until they know the movements you have planned and can work well together.

- Stage a performance! If your school or class is presenting a play, perhaps you can plan a dance that will be part of the show. Otherwise, you can plan in advance to present your dance by itself or along with dances choreographed by other students.

### **Creating a Dance Plan**

There is no one right way to create a dance, but you may find that these five steps work well for you as you choreograph:

#### **1) Choose your music.**

If you and your dancers do not have dance experience, you should begin by choosing music that has lyrics or words. Music without words can be harder to interpret effectively. It is easier to create and use pantomime movements that express the meaning of the words to a song.

For example, think about how you could create movements that would show the following situations:

- A person caught in a strong wind
- A person trapped in a spider web
- A person being chased by something frightening
- A flower blooming
- An ant carrying a crumb

Once you have chosen your song, listen to it several times. Try to visualize what the dancers must do to communicate the meaning in the lyrics to the audience.

**2) Decide what mood you want to convey.**

What feelings do you want the dancers to convey to the audience—happiness, sorrow, fear, surprise? Are there other emotions that may better fit the music? How could a dancer show each of those feelings just by walking across a stage? How should a dancer move to show each of those emotions? What should the dancer's facial expression be for each emotion?

**3) Determine the tempo.**

Clap your hands to the beat of the music to help you determine the tempo, or speed. Is the music lively, slow, or changing? You will want your dancers to move to the beat.

**4) Decide what characters the dancers will represent.**

Make a list of the different characters you will need to tell the story in your song. Think about how each character should move. Would a character dancing the part of a cowboy move the same way as a dancer dancing the part of a swan? Probably not, right? What about a very young child? How would he or she move? Or a person on horseback, or a shooting star speeding across the sky?

**5) Create your dance plan.**

On a sheet of paper, write or type the lyrics of the song you have chosen, leaving lots of space between the lines. Now listen to the music again and write a description under each line of the lyrics telling how you want the dancers to move. Try the movements yourself to be sure they work. Try them with a mirror—do they look the way you thought they would? Do they visually convey the emotions you intended? You might be surprised at what you see!

You will probably change your plan in some ways after you begin rehearsing and can see other people carrying out your ideas. This is to be expected. Write your dance plan in pencil so you can revise it or make changes as you go along.

Here is an example of how one student choreographer followed the five steps to work out a dance plan:

1. Knowing that the dancers had no dance experience, the choreographer chose to choreograph a dance to the song “The Lonely Goatherd.” “The Lonely Goatherd” is an expressive song from the musical *The Sound of Music*. It was a good choice for this new choreographer because it has playful lyrics that would be relatively easy to interpret. You can click [here](http://www.sunnycorner.com/movies/featured/som/music/goatherdsom.php) (<http://www.sunnycorner.com/movies/featured/som/music/goatherdsom.php>) to hear the song and read the lyrics.
2. Based on the words of the song, the choreographer decided to convey a silly, happy mood to the audience.
3. After clapping the beat of the music, the choreographer determined that the tempo of the song was quick and lively.
4. The choreographer then thought about the characters in the song—the goat, the goatherd, the townspeople, and others. Then the choreographer made notes about how each dancer should move to tell the story while following the beat of the music. Among the questions the choreographer considered was how the goat’s movements would be different from those of the people.

5. The choreographer created a dance plan by writing ideas between the lines of lyrics and by making diagrams. The diagram on the following page shows part of the plan. Notice how the characters move to the front and center of the performing area.

### **The Lonely Goatherd**

(Each X represents a dancer. The letters A and B represent the main dancers.)

- 1 Lyrics: *High on a hill was a lonely goatherd*
  - ⇒ Goatherd (A) moves to center front of stage.
  - ⇒ Others move heads and arms from side to side. (Positions 1 and 2)
- 2 Lyrics: *Lay-ee odl, lay-ee o-dl, lay-ee-oo*
  - ⇒ Goat (B) moves to front of stage.
  - ⇒ Others continue moving from Position 1 to Position 2.
- 3 Lyrics: *Loud was the voice of the lonely goatherd,*
  - ⇒ Goatherd (A) puts hand to mouth as if calling.
  - ⇒ Others cup hands to ears to listen.
- 4 Lyrics: *Lay-ee o-dl, lay-ee o-dl-oo*
  - ⇒ All except Goat and Goatherd form circle.
  - ⇒ Goat looks to Goatherd, who mimes yodeling.
- 5 Lyrics: *Folks in the town that was quite remote heard...*
  - ⇒ Dancers circle left to the beat of the music.
  - ⇒ Goat moves behind Goatherd and over to his other side.

6 Lyrics: *Lay-ee o-dl, lay-ee o-dl, lay-ee-oo*

⇒ Dancers circle right.

⇒ Goat returns to original position.

You can work with your plan until you have it just right. But remember, watching dancers perform your choreography may allow you to see places where the dance doesn't work. If that's the case, go ahead and make changes! Your dancers may even have some suggestions that would be helpful



### **Planning and Conducting Rehearsals**

Before you start rehearsals, you need to choose your dancers. If your dance is part of a class or school play, you may be working with students who already have parts. Costumes and scenery will also be provided for you.

If you are planning a dance on your own, you will have to ask students in your class or your school if they would like to be in it. It might be fun to use simple costumes, scenery or props if you wish.

Next you need a place to rehearse. Choose a place where there is enough room to move around and where the noise of your rehearsals won't bother other classes or neighbors. If you would like to use a classroom, auditorium or other place at school, make sure to ask your teacher if it's okay.

As the choreographer you must make certain that your dancers know the dance and are confident of their abilities before the performance. You may want to plan on rehearsing understudies, or substitutes, who can dance the main parts in an emergency, as the famous



ballerina [Maria Tallchief](http://www2.lhric.org/pocantico/womenenc/tallchief.html) (<http://www2.lhric.org/pocantico/womenenc/tallchief.html>) did when another dancer, [Nathalie Krassovska](http://www.ballerinagallery.com/krassovska.htm) (<http://www.ballerinagallery.com/krassovska.htm>), injured her foot.

Remember that enough rehearsals and effective rehearsals are the keys to developing your dancers' confidence. To assure that they are confident and ready by the performance date, follow these steps:

- ★ Give all the performers a written or typed schedule of rehearsal dates and post a calendar with the rehearsal dates clearly marked.
- ★ Set up a phone or email network so your dancers can be notified if rehearsal dates have changed.
- ★ At the beginning of each rehearsal, tell the dancers what you hope to accomplish that day.
- ★ At the end of the rehearsal, plan a few minutes for everyone to assess the group's progress. Be open to a variety of ideas. Present any criticism that you may have as suggestions. As the choreographer, you are in a position of responsibility. If you are mindful of the dancers' feelings when you present criticism, they will be more likely to feel good about taking your suggestions. In addition, you will set a good example and encourage the dancers to also offer suggestions rather than criticism. Here are two questions that will prompt someone to rephrase a criticism as a suggestion:
  - How can I help you with that problem?
  - What do you see as a way to solve the problem?

These questions will help the other person to stop pointing out what's wrong and start thinking about what can be done to fix the problem. This is a much more productive way to think!

## Launching Your Results



### **Performing Your Dance**

If your dance is part of a school or class play, you already know when and where the performances will be. If not, you will have to arrange to use an appropriate space for one or more performances. Also, even if your dance is part of a play, you may find that your dancers would like to stage the dance again as a separate performance.

You may be able to arrange to perform for the PTA or another school group, at a senior citizen center, for another class or for a community organization. If you plan several performances keep in mind that your dancers will probably gain confidence if your first performances are staged for a smaller audience.

During the performance, you, as the choreographer, can choose to direct the dancers from backstage or you can just sit back and enjoy the show. After all, you and your dancers have worked hard to ensure that the performance goes as planned. Maybe now it's time to step back and watch as the dancers bring your visions to life!

### **Learning More about Choreography**

Congratulations! You have completed a creative project that required you to use several different types of skills:

- The artistry to interpret the mood and story of a piece of music
- The imagination to see the dance in your head and to put it down on paper

- The ability to teach the dance successfully to your performers
- The organization to find a practice and/or performance space, create a rehearsal schedule and manage any details such as costumes and scenery that you may have used in your dance
- The skill to oversee rehearsals involving multiple people, each with his or her own opinions and feelings

This was a big job! You should be proud of yourself and all you have accomplished with this project. What type of dance will you choreograph next?

If you would like to learn more about choreography and some famous choreographers, you might enjoy the biographies, written for kids, below:

**Legends of American Dance and Choreography (Collective Biographies)**, by Carin T. Ford (Enslow Publishers, 2000).

ISBN: 0766013782.

*This collection of biographies includes famous choreographers such as Martha Graham, Twyla Tharp, Bob Fosse, and many more. The book tells the stories of their early years in dance, turning points that led them to the stage, their setbacks and their successes.*

**Savion! : My Life in Tap**, by Savion Glover (HarperCollins, 2000).

ISBN: 0688156290.

*This book is about Savion Glover, a very young, world-famous tap dancer and choreographer. Savion started tap dancing as a young boy and performed on Broadway at age eleven! Many people believe that he has single-handedly made tap popular again among young people. He's a pretty cool guy!*

**Mikhail Baryshnikov: Dance Genius**, by Bruce Glassman (Blackbirch Press, 2001).

ISBN: 1567115071.

*Best known for his legendary ballet artistry, Baryshnikov was also a productive choreographer. This book, designed for students in grades five through eight, describes his work, as well as his defection from the Soviet Union, and other details of his personal life. There are also photos of his dance performances.*

These camps offer dance classes that incorporate choreography:

**Joy in Motion Classes, Washington, DC**

[http://joyofmotion.org/old\\_semesters/summer\\_2004/dancecamp\\_2004.htm#PERFORMANANCE%20DANCE%20CAMP](http://joyofmotion.org/old_semesters/summer_2004/dancecamp_2004.htm#PERFORMANANCE%20DANCE%20CAMP)

*Joy in Motion Dance Center is a nonprofit organization that helps people of all ages learn to dance. Students can take ballet, jazz, street jazz (which incorporates funk, hiphop and more modern dance styles), tap and more. Class schedules changes with the seasons. The classes listed below are examples of past classes that have included choreography.*

➤ **Joy in Motion Performance Dance Camp**

*Students grades six to eight will learn Jazz, Broadway Jazz, Street Jam, Tap and Ballet, and will participate in both technique and choreography classes. Students will also learn about other parts of a performance, including costume design, make-up, sets, lights and more. You must have taken jazz dance classes to go to this camp. The cost is \$425 for four weeks. For more information,*

➤ **Joy in Motion Ballet Intensives**

*Students in grades six to eight will learn basic ballet positions, build strength, and increase flexibility. Students will also learn basic ballet choreography that will be presented the last day of class for friends and family. You must have taken ballet before to go to this class. The cost is \$150 for a week.*

➤ **Joy in Motion Jazz Intensives**

*These classes for sixth to eighth graders will focus on learning about the energy and style of jazz. Students will have a jazz technique class and a jazz choreography class that will be presented to friends and family on the last day of class. You must have experience with jazz dancing to take this class. The cost is \$150 a week.*

➤ For information about any of these classes, you can contact Joy in Motion Dance Center using the information below.

Joy in Motion Main Office  
2201 Wisconsin Ave, NW Suite C130  
Washington, DC 20007  
(202) 333-6801  
(202) 333-4559 fax  
[jom@joyofmotion.org](mailto:jom@joyofmotion.org)

**Luna Kids Dance Teen Technique & Choreography, East Bay and Marin County, CA**

*This is a combined dance and choreography class for kids ages 12 to 17. Students may choreograph solos, duets or group dances. Luna Kids classes are offered at different times throughout the year. There is a fee for every class a student attends, plus a \$25 registration fee per year for a family to take classes. Scholarships are available to some*

students. For more information about this class, you can contact Luna Kids by email, phone or mail:

Luna Kids Dance  
P.O. Box 8058  
Berkeley, CA 94707  
510.644.3629  
[Kids Program](#)  
[kids@lunakidsdance.com](mailto:kids@lunakidsdance.com)

The choreography contest on the following page is open to kids like you:

**[National Tap Ensemble American Tap Dance Choreography Showcase](http://www.usatap.org/cs.htm)**  
**[\(http://www.usatap.org/cs.htm\)](http://www.usatap.org/cs.htm)**

*This contest is for kids and adults ages eight and up. At the beginning of each year, there will be regional auditions and workshops across North America for the contest. If you are selected, you will participate in the [annual American Tap Dance Institute "Spirit Of Tap" Conference](#) (<http://www.usatap.org/ATDIconference.htm>). At the end of the workshop, participants will stage their work at a national showcase.*

*There is a \$45 audition fee for participants who choreograph solo dances. Dances featuring three or four tappers cost \$35 per dancer. For groups of four or more, you will pay \$20 per dancer. Check the American Tap Dance Choreography Showcase website above (<http://www.usatap.org/cs.htm>) for updates about a regional showcase/audition near you. Once the information is posted and a link provided to a registration form, you may register online.*

Just remember, this is a very challenging contest that even professional choreographers will enter. Don't get discouraged if you don't get in the first year you apply, just try again the next year! It might be easy to think that a kid like you couldn't compete against adults, but the planners of this contest allow kids to enter for a reason: because talented kids like you can accomplish great things when they set their minds to it!

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**Savion! : My Life in Tap**, by Savion Glover (HarperCollins, 2000). ISBN: 0688156290.

**Mikhail Baryshnikov: Dance Genius**, by Bruce Glassman (Blackbirch Press, 2001). ISBN:  
1567115071.



## Internet

### **Joy in Motion Classes, Washington, DC**

[http://joyofmotion.org/old\\_semesters/summer\\_2004/dancecamp\\_2004.htm#PERFORMANCE%20DANCE%20CAMP](http://joyofmotion.org/old_semesters/summer_2004/dancecamp_2004.htm#PERFORMANCE%20DANCE%20CAMP)

### **Luna Kids Dance Teen Technique & Choreography, East Bay and Marin County, CA**

<http://www.lunakidsdance.com/LunaClasses.html>

### **National Tap Ensemble American Tap Dance Choreography Showcase**

<http://www.usatap.org/cs.htm>



## SEM Xplorations

### From American Toads to Zebra Swallowtails: Become an Amateur Zoologist!

Have you ever heard of a Gila monster? How about a meerkat or a Gilbert's Skink?

There are so many different **species**, or kinds, of animals in the world; there are probably many that are completely unfamiliar to you! A great way to discover the existence of species of which you are currently unaware is to do research and make a **field guide** of animals. If you try to find at least one type of animal species that begins with each letter of the alphabet, you will encounter many species of animals that you did not even know existed! Let's get started!



In this project, you will become an amateur **zoologist**, or a scientist who studies biology of the animal kingdom. When zoologists research animals, they write what they observe in a **field journal**, or notebook. For this project, you will need a field journal of your own to record all of your research!

The first thing to do in your field journal is write down the type of animals you are interested in researching. Are you interested in a particular type of animal? Maybe you're interested in animals of the desert, the ocean, or a particular continent. Perhaps reptiles, mammals, fish, birds, insects, or amphibians intrigue you. Whatever your interests, you can do research within your area of curiosity to find information about many different animal species.

Remember, for your field guide you want to research different *species* of animals, not just the **genus**. A genus is usually made up of a group of similar species. For example, there are many **species** within the **genus** *Alligator*. However, *Alligator mississippiensis* is the species name for the American alligator, a specific kind of alligator. In your field guide, if you are interested in insects you could include Ants, Beetles, and Centipedes for “A,” “B,” and “C.” However, there are many types of ants, beetles and centipedes, and each one is unique. A more interesting option would be to choose specific species beginning with each letter of the alphabet. For example, for “A,” “B,” and “C,” you could include the American House Spider, the Bald-faced Hornet, and the Carolina Locust. It will be much easier to find animal species within your area of interest for each letter of the alphabet if you are more specific about the animals you include.

## **Research**


Once you have decided on the subject of your field guide, you can begin your research. While part of your research will be finding types of animals that begin with each letter of the alphabet, that will not be the end of your research! A **field guide** always includes detailed information about each species it includes. You need to decide what type of information you would like to include about each species you choose to exhibit in your field guide. Some questions you might want to investigate are:

- What is this species’ scientific name?
- Where does this species primarily live?
- How might someone recognize this species?
- What climate does this species prefer?



You may have your own questions that you would like to answer about each species, as well.

You may choose to include any further information that you find interesting! If your field guide focuses on reptiles, here is an example of what a page in your field guide might look like:



**G** is for Gila Monster:

**Species Name:** *Heloderma suspectum*

- **Interesting Facts:** "Gila" is pronounced "HEE-la"; *One of the world's two venomous lizards*
- **How to Recognize:** Grows to between 18 and 24 inches, moves slowly, has a black snout, broad head, sausage-shaped tail, and body is covered with bead-like scales
- **Range:** Can be found in the United States between Western Arizona and southern Nevada
- **Habitat:** Prefers rocky foothills, canyons, oak woodlands, and desert scrub

- Information from Ranger Rick Field Guides;  
<http://yahooligans.yahoo.com/content/animals>

Remember, this page is only one example. Your field guide pages may be very different from this one based on your personal interests and preferences!

## The Library

The library is a great place to search for information. At the library, look in the card catalog or library computer system to find books about your topic. For example, if you were to decide to focus your field guide on reptiles, you could look for books about *reptiles*, *lizards*, *alligators*, *crocodiles*, *snakes*, or *turtles*. What words would you look up in the card catalog or library computer system to find information for your field guide? Take a moment to brainstorm some

words in your field guide. This way you will have a place to start when you go to the library.

Here are some good general animal books you may want to look for:

**Animal: The Definitive Visual Guide to the World's Wildlife** by David Burnie & Don E. Wilson (DK Publishing Inc, 2001).

ISBN: 0789477645

*Learn about the amazing range of different beasts in the animal kingdom with this fun guide.*

**Blue Planet** by Andrew Byatt, Alastair Fothergill, Martha Holmes, & British Broadcasting Corporation (DK Publishing, 2002).

ISBN: 0789482657

*Do you think fish are boring? This book will make you think again! Here you will find a whole world of mysterious creatures—all living in the dark heart of the ocean's depths. Meet itty bitty copepods, enormous blue whales and everything in between. Looking for something strange? Learn about the anglerfish, which is covered in hair, and, the tripod fish, which stands on three slender legs as it awaits unsuspecting prey. What other beasts live under the sea? Read this book and find out.*

**National Geographic Animal Encyclopedia (National Geographic Society, 2000).**

ISBN: 0792271807

*Learn about mammals, birds, reptiles, Amphibians, fish, and insects in this cool book. Lots of information and lots of variety to give you a broad look at the animals who share our planet.*

**The Life of Mammals** by David Attenborough (Princeton University Press, 2002).

ISBN: 0691113246

*Look through pictures of sloths, bats, wild dogs, and more while learning about animal behavior.*

**The Life of Birds** by David Attenborough (Princeton University Press, 1998).

ISBN: 069101633X

*Here you will find more than 200 photographs plus interesting facts about birds.*

**A Gap in Nature: Discovering the World's Extinct Animals** by Tim F. Flannery & Peter Schouten (Atlantic Monthly Press, 2001).

ISBN: 0871137976

*What animals lived on this continent before Columbus first came to America? Learn about more than 100 species that have disappeared since the days of the famous explorer.*

**Everything Bug: What Kids Really Want to Know About Insects and Spiders** by Cherie Winner (Northword Press, 2004).

ISBN: 1559718900

*Why are bugs important? How long have they've existed? Do spiders make noise? Learn the answers to these and other questions in this creepy crawly book.*

**Eyewitness: Amphibian (Eyewitness Books)** by Barry Clarke (DK Publishing, 2000).

ISBN: 0789457547

*Explore amphibians' anatomy, behavior, and pivotal place on the evolutionary time line.*

**Eyewitness: Fish (Eyewitness Books)** by Steve Parker (DK Publishing, 2000).

ISBN: 0789458101

*What do fish do all day? Photographs, diagrams, and facts provide information about every part of fish life.*

**Eyewitness: Reptile (Eyewitness Books)** by Colin McCarthy (DK Publishing, 2000).

ISBN: 0789457865

*Lots of pictures and facts about snakes, crocodiles, turtles and other reptiles. Here you will learn about their behavior and lives.*

**Eyewitness: Bird (Eyewitness Books)** by David Burnie (DK Publishing, 2000).

ISBN: 0789458004

*Here you will find pictures, pictures and more pictures of birds! Learn about these interesting creatures while examining tons of photographs of their wings, eggs, nests and more.*

If you cannot find these books, remember, there are many good books at your school or local library that will help you identify species of animals within your area of interest.

## **The Internet**

The Internet is also a wonderful resource for information about animals. Like you did with the card catalog or library computer system, you can search the Internet using key words such as *lizards* and *snakes* on sites like [www.yahooligans.com](http://www.yahooligans.com) or [www.ajkids.com](http://www.ajkids.com). Here is a list of other sites you can explore, as well.

### **Animal Bytes at Sea World.com**

[http://www.seaworld.org/AnimalBytes/animal\\_bytes.html](http://www.seaworld.org/AnimalBytes/animal_bytes.html)

*Animal Bytes were specifically designed to help you quickly find information about some of the unique creatures found in the animal kingdom. Find species' scientific classification and other facts.*

### **Creature World**

<http://www.pbs.org/kratts/world/>

*Explore the animals from each of the world's continents that are home to animals.*

### **Desert USA Animals**

<http://www.desertusa.com/animal.html>

*Learn about reptiles, mammals, birds, fish and amphibians that have adapted to harsh life in the desert.*

### **Ranger Rick Field Guides**

<http://yahooligans.yahoo.com/content/animals/>

*Search facts about mammals, fish, insects, birds, amphibians, and reptiles! Also explore questions such as "What makes a bird a bird?"*

### **Dinopedia by The Jurassic Park Institute**

<http://yahooligans.yahoo.com/content/science/dinosaurs>

*Discover information about dinosaurs and other interesting extinct species! Learn about a five-eyed prehistoric sea creature and an animal like an armadillo whose shell was so large that prehistoric man used to make a house out of the shell!*

### **Dog Breed Guide**

<http://yahooligans.yahoo.com/content/animals/dogs/>

*Find information on appearance, care, and temperament, as well as fun facts and pictures for each breed in this helpful guide! Learn about all seven dog breed groups.*

### **Animals A to Zoo: Animal Planet**

<http://animal.discovery.com/guides/atoz/atoz.html>

*Explore videos, photo galleries, fact sheets, and more of all of your favorite animals. Discover big cats, water life, and more!*

### **Kids Click! Animals**

<http://sunsite.berkeley.edu/KidsClick!/midanim.html>

*Find many great sites about the type of animals that interest you!*

### **Sounds of the World's Animals**

[www.georgetown.edu/faculty/ballc/animals/animals.html](http://www.georgetown.edu/faculty/ballc/animals/animals.html)

*Animals make the same sounds no matter where they live, but each language expresses them differently. Explore the sounds of the world's languages through the sounds of the world's animals.*

### **National Marine Mammal Laboratory (NMML) – About Marine Mammals**

<http://nmml.afsc.noaa.gov/education/marinemammals.htm>

*Did you know that polar bears are a type of marine mammal? Explore facts about marine animals like whales, dolphins, manatees, seals, polar bears, sea otters, and more!*

As you explore the library and the Internet, record the information you find in your field journal.

Just remember to also record where you found that information. It is important to **cite**, or give credit to, the book or website that helped you in your research process!



### **Writing and Illustrating Your Field Guide of Animals**

#### **Planning Your Field Guide**

Once you have all of the information you need written in your field journal, you're ready to begin creating your field guide! A great way to start writing your field guide of animals is to make an outline. Make your outline in your field journal. Your field guide will be easier to use if you put the animals in alphabetical order. Once you have alphabetized your entries, you can follow this form for each of your species if you like:

#### **I. Animal Name**

- ❖ Scientific name
- ❖ Interesting facts about this species

- ❖ Information about how the animal looks
- ❖ Location of animals in the world
- ❖ Habitat of the animal
- ❖ Other interesting information about the animal

Repeat this process for all of the species you will include in your field guide.

### **Text for your Field Guide**

Now that you have an outline of your field guide, you can write a rough draft of the text, or the words, of your book. It is very important to think about who will be using your field guide so you can make your words suitable for your audience.

Read over your text several times to be sure it says what you want it to say. Ask a friend to **proofread** your text for you to check for incorrect spelling and grammar. You and your friend may want to use the **proofreading checklist** below to help with the editing process.

#### *Proofreading Checklist*

Ask yourself these questions:

- ☞ 1. Did I spell all the words correctly?
- ☞ 2. Did I indent each paragraph?
- ☞ 3. Did I write each sentence as a complete thought?
- ☞ 4. Do I have any run-on sentences?
- ☞ 5. Did I begin each sentence with a capital letter?
- ☞ 6. Did I use capital letters correctly in other places?
- ☞ 7. Did I end each sentence with the correct punctuation mark?
- ☞ 8. Did I use commas, apostrophes, and other punctuation correctly?

## **Pictures and Maps**

Before writing or typing a clean, neat final draft of your field guide, decide where you would like to place illustrations, photographs, or maps. Then you just need to choose your pictures. You may want to draw your own pictures based on the illustrations in the books or other materials you used. If you like, you can use tracing paper or other thin paper to trace pictures, parts of pictures, or maps. Then you can glue or paste your tracing to a piece of construction paper or other paper. You may decide to leave your pictures in black and white or to color them with markers, paints, or crayons. You may decide to cut out and use photographs from magazines, or print some off the Internet. If you choose to print pictures from the computer or cut pictures out of magazines, you should first check with your teacher, parent, or guardian. Printing pictures uses a lot of ink, and people don't always like having their magazines cut up.

Since your field guide may include animals from all over the world, you may want to print blank maps off the Internet and mark where each species lives for that entry in your field guide. If you've chosen to focus your field guide on animals from a particular country or continent, you may choose to print a map of that country or continent to use as the cover of your field guide. You can print maps of the whole world, countries, or regions from this website:

### **National Geographic Xpeditions: Atlas**

[www.nationalgeographic.com/xpeditions/atlas](http://www.nationalgeographic.com/xpeditions/atlas)

*This site has hundreds of printable maps of countries all over the world.*

# Launching Your Results



## Putting Your Guide Together

Once you have planned where you would like your text and pictures to go in your field guide, you are ready to create your final draft. You will now have to choose a way to put your guide together. You can use a three-ring binder or a scrapbook or maybe you can think of another way to create a booklet. A couple of books with great ideas for bookmaking are:

**Cover to Cover** by Shereen LaPlantz (Sterling Publishing: 1995).  
ISBN: 0937274879.

*This book is filled with creative ideas for making books. Learn basic folding, pasting, and binding techniques as well as more complicated methods for creating books.*

**Making Books by Hand** by Mary McCarthy & Philip Manna (Quarry Books: 2000).  
ISBN: 1564966755.

*Illustrated step-by-step instructions show book lovers how to make their own journals, scrapbooks, and more.*

You can find some bookmaking ideas on the Internet, as well.

**[Making Books: Kids' Page](http://www.makingbooks.com/kids/)**  
[www.makingbooks.com/kids/](http://www.makingbooks.com/kids/)

*The Kids Page was created to get you started making books. There are directions for some simple books in the Bookmaking Projects section. The materials are easy to find and the directions are easy to follow.*

How else could you present your research? Is there any way you might use the computer to make your field guide of animals?

Finally, you need to decide what kind of cover to make for your field guide. What will the title be? Should there be a picture or map?



## Sharing Your Field Guide

When your field guide is finished, display it in your classroom, and make a copy for your school library. You probably have learned a lot by doing this project, and now your research can help others learn, too!

Maybe this project inspired you to learn more about the animals of the world—there are so many interesting species that you can discover! If so, keep researching the animals in your area of curiosity or begin investigating another area that sparks your interest. The research you do now may help in the future if you become a **marine biologist, zoologist, primatologist, conservation biologist, ethologist, entomologist, or veterinarian!** If you don't know what these scientists study, find out at Merriam-Webster's online dictionary at [www.m-w.com](http://www.m-w.com), or explore The Wild Ones Scientist Network (<http://www.thewildones.org/scientists.html>) to learn what different scientists' jobs are like. You never know! You just might be one of these scientists some day!



**Animal: The Definitive Visual Guide to the World's Wildlife** by David Burnie & Don E. Wilson (DK Publishing Inc, 2001). ISBN: 0-7894-7764-5.

**Blue Planet** by Andrew Byatt, Alastair Fothergill, Martha Holmes, & British Broadcasting Corporation (DK Publishing, 2002). ISBN: 0-7894-8265-7.

**National Geographic Animal Encyclopedia (National Geographic Society, 2000).** ISBN: 0-7922-7180-7.

**The Life of Mammals** by David Attenborough (Princeton University Press, 2002). ISBN: 0-6911-1324-6.

**The Life of Birds** by David Attenborough (Princeton University Press, 1998).  
ISBN: 0-6910-1633-X.

**A Gap in Nature: Discovering the World's Extinct Animals** by Tim F. Flannery & Peter Schouten (Atlantic Monthly Press, 2001). ISBN: 0-8711-3797-6.

**Everything Bug: What Kids Really Want to Know About Insects and Spiders** by Cherie Winner (Northword Press, 2004). ISBN: 1-5597-1890-0.

**Eyewitness: Amphibian (Eyewitness Books)** by Barry Clarke (DK Publishing, 2000). ISBN: 0-7894-5754-7.

**Eyewitness: Fish (Eyewitness Books)** by Steve Parker (DK Publishing, 2000). ISBN: 0-7894-5810-1.

**Eyewitness: Reptile (Eyewitness Books)** by Colin McCarthy (DK Publishing, 2000). ISBN: 0-7894-5786-5.

**Eyewitness: Bird (Eyewitness Books)** by David Burnie (DK Publishing, 2000). ISBN: 0-7894-5800-4.



## Internet

### **Animal Bytes at Sea World.com**

[http://www.seaworld.org/AnimalBytes/animal\\_bytes.html](http://www.seaworld.org/AnimalBytes/animal_bytes.html)

### **Creature World**

<http://www.pbs.org/kratts/world/>

### **USA Desert Animals**

[www.usadesert.com/animal.html](http://www.usadesert.com/animal.html)

### **Ranger Rick Field Guides**

<http://yahooligans.yahoo.com/content/animals/>

### **Dinopedia by The Jurassic Park Institute**

<http://yahooligans.yahoo.com/content/science/dinosaurs>

### **Dog Breed Guide**

<http://yahooligans.yahoo.com/content/animals/dogs/>

### **Animals A to Zoo: Animal Planet**

<http://animal.discovery.com/guides/atoz/atoz.html>

**Kids Click! Animals**

<http://sunsite.berkeley.edu/KidsClick!/midanim.html>

**Sounds of the World's Animals**

[www.georgetown.edu/faculty/ballc/animals/animals.html](http://www.georgetown.edu/faculty/ballc/animals/animals.html)

**National Geographic Xpeditions: Atlas**

[www.nationalgeographic.com/xpeditions/atlas](http://www.nationalgeographic.com/xpeditions/atlas)

**National Marine Mammal Laboratory (NMML) – About Marine Mammals**

<http://nmml.afsc.noaa.gov/education/marinemammals.htm>



## *SEM Xplorations*

### **Get into the Groove: Learn to Write Song Lyrics!**

Many people dream of becoming performers like those we see in concerts and plays, or on television. All performers, however, need the skills of many other talented people before they can entertain. One such important artist is the lyric writer, or lyricist.

Lyrics are the words that are put to music. A songwriter may write both the music and the lyrics, or a lyric writer may put words to a tune that someone else has written. Either way, the same skill is required in choosing and arranging just the right words.

Have you ever written words to a song? Have you ever thought about the different ways in which messages are communicated by songs?

If you are interested in writing lyrics, you can write some of your own. Here are four major steps you can follow for this project. Good lyrics don't happen by accident!

- I. Learn about lyrics and lyric writing.
- II. Substitute new words to a simple song.
- III. Write new verses to a song you choose.
- IV. Find a way to use your skill.



# Charting Your Course

## **Step I: Learn about lyrics and lyric writing**

The following questions and suggestions may help you with this step.

1. Can you think of some radio and television commercials that use songs? What words in the songs tell you the most about the product? How often do you hear the commercial in a day? About how many weeks do you continue to hear the commercial before it is changed? Are there differences in the kinds of words used to advertise different types of products? What are your favorites and why?
2. Do the theme songs of your favorite television shows have lyrics? Are they sung at the beginning or at the end of the show? What do the songs tell you about the shows?
3. What is your favorite movie or play soundtrack? How many different lyric writers were involved in writing the various songs? What kinds of words or phrases are used in the songs? How do they help express the different feelings portrayed in the movie or the play?
4. Does your school have an official school song? What does it say about your school? If it was written a long time ago, are the things it says about your school still true?
5. Who are your favorite recording artists? Does he or she provide lyrics for his or her own music? If you have an artist's liner notes (the booklets or pamphlets that come with a CD, tape or record) or songbook, you can tell if he or she writes the lyrics or has a favorite lyric writer. Compare the liner notes or songbooks of different artists to see if they use some of the same lyric writers.

6. Investigate some other kinds of songs, such as campfire songs, religious songs, or patriotic songs. When were these songs written? Who wrote them? Most public libraries have a section in which you can find information about songs and songwriters. An Internet search engine such as Yahoooligans (<http://www.yahoooligans.com>) or Ask Jeeves for Kids (<http://www.ajkids.com>) may also help you find what you need.

## **Step II: Substitute new words to a simple song**

Have you ever heard of Lauryn Hill, David Gray or Cheryl Crow? These popular singers are all well-known for writing powerful and inspiring lyrics. How did they learn to write great lyrics? Do you think they were just lucky? Or do you think they had some tips to help them get started and then worked hard to develop their craft?

If you said they had tips and worked hard, you're probably right. It takes information, practice and time to become an expert at something. To help you on your journey as a lyrics writer, here's a tip for you:

Well-known lyricist, Sammy Cahn, who has received over forty Academy Award (Oscar) nominations, tells us that he learned to write lyrics by playing a kind of game. He took popular songs and changed the words. Want to try Sammy's game? Here's how—

Select a very simple tune, for example, the children's song "Row, Row, Row Your Boat." Then use the technique of substitution to change the lyrics to fit any topic you choose.

For example, you could substitute the idea of a bike for the boat in the song. Instead of "Row, row, row..." you might say "Push, push, push..." Brainstorm as many different first lines as you can for a song about a cart. Your list might begin like this:

### **Writing Line One**

- Example: 1. Ride, ride, ride your bike  
Example: 2. Push, push, push your bike  
3.  
4.

### **Writing Line Two**

Now think of ways to change the second line to fit the idea of a bike.

Original: Gently down the stream

- Example: 1. Gently down the road  
Example: 2. Slowly up the hill  
3.  
4.

### **Writing Line Three**

Think of how you can change the third line. One way is to use a word similar to “merrily” to describe how the singer feels or acts. What words or phrases can you think of that describe a feeling or an action?

Original: Merrily, merrily, merrily, merrily

- Example: 1. Sadly, sadly, sadly, sadly (feeling)  
Example: 2. Slowly, slowly, slowly, slowly (action)  
3.  
4.

Here’s another way you can change the third line – use words that imitate sounds. How many different ways can you think of to replace the third line with words like this?

Original: Merrily, merrily, merrily, merrily

Example: 1. Clickety, clackety, clickety, clackety

Example: 2. Whoosh, whoosh, whoosh, whoosh

3.

4.

### **Rhyming the Last Line**

Think about the last line of the song. Do you want it to rhyme with the second line? If you do, select the second line that you will use. Brainstorm all the words you can that rhyme with the last word of that line.

Original: Gently down the stream

New line: Slowly up the hill

Word to rhyme: hill

Example: 1. bill

Example: 2. still

3.

4.

Another method for finding rhyming words is to use a rhyming dictionary. It takes a little while to get used to a rhyming dictionary because it is organized by sounds, not alphabetically.

For example, if you were looking for words to rhyme with stream, you would look in the section for the vowel sound *e* ending with the consonant *m*. There you would find a list of single-syllable rhyming words such as *beam*, *cream*, *deem*, *dream*, and so on. This list can give you many different ideas for ending a sentence so that it rhymes with *stream*. You may be able to find the book below in your school or public library:



**Sammy Cahn's Rhyming Dictionary** by S. Cahn (Cherry Lane Music, 2002).

ISBN: 1575606224.

*This book contains 50,000 words arranged by their vowel sounds to make finding rhymes easy.*

### **Writing the Last Line**

After you have compiled a list of rhyming words, think of phrases to replace the last line.

Original: Life is but a dream

New line: Slowly up the hill

Word to rhyme: hill

Example: 1. Building takes some skill

Example: 2. Now we're standing still

3.

4.

Now you can combine the phrases you have created to write a new verse to "Row, Row, Row

Your Boat."

Example: Ride, ride, ride your bike

Slowly up the hill

Sadly, sadly, sadly, sadly

Now we're standing still

Here's another example using a different song:

### **Original Song:**

#### **Do Your Ears Hang Low?**

*Do your ears hang low?*

*Do they wobble to and fro?*

*Can you tie them in a knot?*

*Can you tie them in a bow?*

*Can you throw them over your shoulder*

*Like a continental soldier?*

*Do your ears...*

*Hang...*

*Low?*

**Exercise:**

Original beginning: *Do your ears hang low?*

**New beginning:** *Do your toes grow mold?*

Original line: *Do they wobble to and fro?*

**New line:** *Do they perfume high and low?*

Original line: *Can you tie them in a knot?*

**New line:** *Can you smell them when you're hot?*

Original line: *Can you tie them in a bow?*

**New line:** *Can you smell them when you're cold?*

Original line: *Can you throw them over you shoulder*

**New line:** *Do you dream that when you're older*

Original line: *Like a continental soldier?*

**New line:** *They will cease to stink and molder?*

Original ending:

*Do your ears...*

*Hang...*

*Low?*

**New ending:**

*Do your toes...*

*Grow...*

*Mold?*

**New Song:**

**Do Your Toes Grow Mold?**

*Do your toes grow mold?*

*Do they perfume high and low?*

*Can you smell them when you're hot?*

*Can you smell them when you're cold?*

*Do you dream that when you're older*

*They will cease to stink and molder?*

*Do your toes...*

*Grow...*

*Mold?*

How many new verses can you create? Try substituting different phrases for different lines. You may think of some new ideas you want to try, also.



### Step III: Write new verses to a song you choose

Now that you have practiced creating new verses to a simple tune, you will want to try it with a more difficult song. Where can you find a song to start with? The Yahoo!igans! website below provides twenty links to sites with song lyrics. This may be a good place begin your search for lyrics.

[Yahoo!igans! "lyrics" search results](#)

<http://search.yahoo!igans.yahoo.com/search/ligans?p=lyrics&y=y&r=School+Bell%02Music+Education>

*This website provides links to song lyrics by John Lennon, U2 and even the Grinch!*

But where can you find a topic to write about? Ideas for songs can come from many places—newspaper stories, books, social issues, films, or videos. You may want to write about something from your own life experiences. Brainstorm all the topics you can think of that are related to things you do. Your list may start like this:

1. Taking tests
2. Making friends
3. Eating pizza
4. Learning to use in-line skates
- 5.
- 6.
- 7.

Select from your list the topic you want to write about. Next select a song you like. It can be a popular song or a song you learned from camp or school. Any tune that you know well and like will be fine.

Writing new verses to the song you choose may take time, practice, and lots of rewriting. Try singing your phrases to be sure they fit the tune. Do you need to add or remove a word or phrase? Should you rewrite a phrase to make it fit?

This technique of substituting new words for familiar ones has been used successfully by both advertisers and popular songwriters. If they are using someone else's song, they must obtain permission from the composer or the composer's publisher.

Many successful songwriters keep notebooks of their work. You can do the same. As you write new verses to more songs, you can add them to your notebook. The world is full of tunes to which you can write your own words!

Music composition—writing the tunes for songs—often requires a knowledge of music theory and the skill to play a musical instrument. Do you have these skills or do you think you can learn them? If so, you may want to compose your own music as well as write your own lyrics. If you don't have music composition skills, do you know someone who does? The two of you may want to collaborate. Many great songs have resulted from this kind of musical collaboration between a musician and a lyricist.

# Launching Your Results



## Step IV: Find a way to use your skill.

Writing new lyrics to songs can be fun and challenging. Now do you want to do something more with your new skills? Here are a few suggestions. You may be able to think of others. Keep in mind that you must obtain permission if you plan to use someone else's tune in any commercial way.

- ☺ Write lyrics for a commercial about your favorite product—a snack, breakfast cereal, toothpaste, or whatever you choose. Find the address of the manufacturer on the box or wrapper. If you don't have the packaging, you may be able to find the address on the Internet. Send your lyrics to the company and see if they might be interested in using your idea.
- ☺ Write lyrics for a songwriting contest. You may need to set your lyrics to a melody for some songwriting contests. You can write the melody yourself or collaborate with someone else. The links below provides information about contests that might interest you.

### **TeachingKidsBusiness.Com Song Contest:**

<http://www.teachingkidsbusiness.com/songwriting-contest.htm>

*This song contest was developed to give kids a chance to communicate through music and to practice the art of songwriting.*

### **Fischy.com songwriting competition:** <http://www.fischy.com/kids/songcomp.html>

*Everyone who enters this contest receives a free bookmark. Winners receive a Fischy CD of music for kids, and a chance to have their song on an album for kids.*

- ☺ Rewrite your school song and bring it up to date so that it expresses the positive qualities you see in your school today. Share it with your friends. If they like it, take the new verses to your school principal. Maybe you and your classmates can sing it at your next assembly.
- ☺ Write a class song and share it with your classmates and teacher.

- ☺ Find out if your state has a state song. If it does, try to get a copy of it. Maybe you can add a new verse. You could send a copy to your state legislator. If your state does not have a song, you can write one. You might start by brainstorming things that are special about your state.
- ☺ Do you belong to any youth organizations? You may want to write new verses to songs that are frequently sung at your meetings or gatherings. Scouts and campers always need new songs to sing around the campfire.
- ☺ Are you interested in more professional outlets for your work? The book Songwriter's Market gives the names and addresses of music publishing companies. It also gives you valuable advice on how to publish your songs without getting involved with "songsharks." A new edition comes out each year.

Here are some books you might find helpful as you learn to write song lyrics:

**Songwriting for Dummies**, by J. Peterik, D. Austin and M. Bickford (For Dummies; 1 edition, 2002).

ISBN: 0764554042.

*This book provides step-by-step instruction for writing song lyrics, and for writing songs.*

**Successful Lyric Writing: A Step-By-Step Course & Workbook** by Sheila Davis (Writer's Digest Books; 1st ed edition, 1988).

ISBN: 0898792835.

*This book contains advice and exercises to help you develop ideas for lyrics and for how to write them well.*

**2004 Songwriter's Market** edited by I. Bessler (Writers Digest Books, 2003).

ISBN: 1582971889.

*This book provides information about how to get your songs published and recorded.*

Here are some songwriting resources on the Internet:

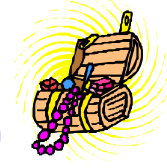
**Kidsrock.org:** <http://www.kidsrock.org/news.html>

*This website provides information to help kids with the inspiration, structure, and details of their songs.*

**Fischy.com:** <http://www.fischy.com/kids/whatfish.html>

*Visit this website to hear music from some albums for kids, read lyrics by kids, and see artwork related to music done by kids.*

# Treasure Chest of Tools



**Sammy Cahn's Rhyming Dictionary** by S. Cahn (Cherry Lane Music, 2002). ISBN: 1575606224.

**Songwriting for Dummies**, by J. Peterik, D. Austin and M. Bickford (For Dummies; 1 edition, 2002). ISBN: 0764554042.

**Successful Lyric Writing: A Step-By-Step Course & Workbook** by Sheila Davis (Writer's Digest Books; 1st ed edition, 1988). ISBN: 0898792835.

**2004 Songwriter's Market** edited by I. Bessler (Writers Digest Books, 2003). ISBN: 1582971889.



## Internet

**Yahooligans! "lyrics" search results**

<http://search.yahooligans.yahoo.com/search/ligans?p=lyrics&y=y&r=School+Bell%02Music+Education>

**TeachingKidsBusiness.Com Song Contest:**

<http://www.teachingkidsbusiness.com/songwriting-contest.htm>

**Fischy.com songwriting competition**

<http://www.fischy.com/kids/songcomp.html>

**Kidsrock.org**

[www.kidsrock.org/songwriting.html](http://www.kidsrock.org/songwriting.html)

**Fischy.com**

<http://www.fischy.com/kids/whatfish.html>



## *SEM Xplorations*

### **Have the Last Laugh!**

#### **Learn to Draw Comics**

Do you like to read the comics in the newspaper on Sunday mornings? Do you enjoy comic books as much as the books you read in school? Would you be interested in drawing a comic strip? Well you can do just that—even if you have never drawn comics before or heard about how comic artists work. All you need is your imagination and a few supplies! Here is a list of materials you will need for this project:

- ★ A notebook for ideas and rough sketches
- ★ A drawing pad with unlined paper (You can buy these at any grocery store, pharmacy or art store. Your school art teacher may also be able to give you some drawing paper. You can staple the pages together to make a homemade sketchbook.)
- ★ Sharp pencils
- ★ Some pens with black ink
- ★ Colored pencils, crayons or other drawing supplies to color your comic
- ★ Some great ideas!





# Charting Your Course

What do you think of when you think of a comic strip? Do you think of silly characters and jokes? Or superheroes? These are popular types of comics, but there are other types of comics that might interest you as well.

## Graphic Novels

Did you know that in 1992 a long comic book won the most famous literature prize in the country? This book was called Maus. It was a serious story about World War II. Book-length comics—called graphic novels—may be serious or funny, but they always tell interesting stories. They are becoming increasingly popular as people realize that they are informative, beautiful, and fun to read. Some students are even reading them for school. If graphic novels sound interesting to you, you may want to read some, such as those listed below. You can ask your school or local librarian where to find these and other graphic novels:

**Out From Boneville (Bone, Book 1)**, by Jeff Smith (Cartoon Books, 1996).  
ISBN: 0963660993.

*After being kicked out of their hometown, three cousins, Fone Bone, Phoney Bone, and Smiley Bone, wander into a magical valley. There they find wondrous beings, a human girl named Thorn, and terrible rat creatures. This is the first book in the very popular Bone series.*

**Amy Unbounded: Belondweg Blossoming**, by Rachel Hartman (Pug House Press, 2002).

ISBN: 0971790000.

*Amy is like many nine-year-old-girls: She's excited for her tenth birthday, doesn't always feel like doing her chores, and has a crush on a neighborhood boy. But Amy lives in a medieval town called Goredd, where sometimes dragons disguise themselves as humans and statues talk to surprised strangers. This is a fun graphic novel about a kid whose life is different, or maybe not so different, from yours!*

**Clan Apis**, by Jay Hoseler (Active Synapse, 2000)

ISBN: 096772550X.

*Do you like bees? You might after reading this graphic novel! Nyuki, a worker bee, has lots of adventures with her family and friends as she grows up in her hive. This book is funny, interesting and very cool!*

## Political Cartoons

Political cartoons are another important type of comic. Political cartoons use humor to share ideas about government and important events. Many people read political cartoons because they are funny—even if they usually find politics boring or hard to understand. For this reason, political cartoons are a very powerful way for cartoonists to express opinions about what is happening in the world. For example, a political cartoonist may think that a government official (also called a “politician”) has made a bad decision. The cartoonist might create a cartoon that shows the politician doing or saying something very foolish. The cartoonist may also exaggerate the politician’s features, so that he or she has a huge nose, giant ears or buckteeth. This type of drawing—an exaggeration of a famous person—is called a “caricature.” Political cartoonists have been drawing caricatures for hundreds of years. You can still find caricatures and political cartoons in any newspaper today.



Of course, some comics tell stories just for fun. The comics below are good examples of some fun comic strips. Reading them may give you some ideas of your own!



to [snoopy.com](http://www.snoopy.com) **Snoopy.com**

(<http://www.snoopy.com/comics/peanuts/index.html>)

*This website provides information and sample comic strips from the famous “Peanuts” cartoons. You can read about Snoopy, Charlie Brown and all their friends in the comic strip of the day. You can also see “[A Month of Peanuts](http://www.snoopy.com/comics/peanuts/archive/index.html)” (<http://www.snoopy.com/comics/peanuts/archive/index.html>)” by clicking on this link or the link on the Snoopy.com homepage.*

**Amazing Kids Comics** (<http://www.amazing-kids.org/akcomics.htm#akcindex>)

*This website has a number of comic strips drawn by kids. Check out Amazing Kids Comics Adventures, by seventeen-year-old Laura Tisdale and Kid Works, by twelve-year-old Betsy Brown. You can link to other kid comics through this page as well.*

Short, fun comic strips like Peanuts or Amazing Kids Comics Adventures may be good models for a new comic artist like you. But how do you begin your comic strip? There’s no one right way, but the steps below may be a good guide for this project.

### **Steps for Creating a Great Comic Strip**

- 1) Develop a story that you would like to show in your strip.
- 2) Choose a character or characters for your strip.
- 3) Choose main ideas for the squares of your strip.
- 4) Create a “storyboard”
- 5) Draw your strip.
- 6) Ink or color your strip.

### **Developing Your Story**

Most comic strips show characters acting out very simple stories or jokes. You can get ideas for a story from your own life. Funny things make good comic strips, but you can also make a comic strip about surprising, scary, or exciting events. Any story that can be told with a

few pictures and words, and that also has an interesting point at the end, can make a good comic strip.

For example, maybe you recently had your first rollercoaster ride. You could write a comic strip about what happened before, during or after the ride. You might write about how you felt while you were waiting, how you behaved during the ride, or how others acted around you.

Or maybe you have had a bad day recently, and that's what you want your comic strip to be about. That's fine too. Take out your Comic Strip Notebook and write down all the things that made the day bad for you. Your list might look like this:

### **A Bad Day!**

- ⊗ I overslept
- ⊗ I forgot my lunch at home
- ⊗ I tripped and fell in class and everyone laughed
- ⊗ I lost my favorite pencil
- ⊗ My teacher snapped at me for having a messy desk

Which of these ideas would you most like to show in your comic? Choose one event from your list that you think would make a good story. Then write a brief description of what happened, making sure that you have a clear beginning, middle and end. Try to make your description interesting or funny. Let's say you decided to write about oversleeping. Your paragraph might look like this:

### ***The Bad Morning***

*The alarm rang and I reached over and turned it off so I could sleep for a few more minutes. Then I heard my dad yelling that I was going to miss the bus if I didn't wake up! I jumped out of bed and started getting dressed. I was in such a hurry that I got tangled up in my clothes and fell over. My dad had made me some oatmeal, but I didn't have time to eat it before running to the bus stop. On the bus I was squished between two of the biggest kids in the school. When I finally sat down at my desk, my teacher smiled at the class and said, "Good morning! I hope everyone is having a great day so far!"*

Choose a few different events and write a paragraph for each. Then read them over and decide which is the most interesting. Go back to that paragraph and make any changes or improvements you think are necessary. Are there sentences that don't add to the story that you can cross out? Or do you need to add a sentence or two to show an important event that you had forgotten? Just remember to keep your story short and simple. Four or five sentences should be plenty for a good comic strip.

### **Choosing a Character**

Now that you have a story, it's time to think of a character for your comic strip. Think about what you have written. What type of character would react in an interesting way to the situation you have described?

For example, if you had decided to create a comic strip about oversleeping, what type of character would be likely to oversleep? How would he or she react to oversleeping? Or, you may want to ask yourself what type of character might be very *unlikely* to oversleep. How would *this* character react to oversleeping?

Remember, you don't have to limit yourself to realistic characters. If you like superheroes, you could create a comic strip about a superhero who oversleeps. Animals, toys, household appliances, and plants may also make good characters for your comic strip. A list of possible characters for a comic strip about oversleeping might look like this:

### **Characters**

1. Mouse
2. Alarm clock
3. Superhero
4. School bus
5. Bear
6. ?

Take out your Comic Strip Notebook and brainstorm some characters that might fit well into the scene you have written. Write down all the interesting ideas that you can think of.

### **Choosing Main Ideas for Your Squares**

Think about the comic strips you see in the newspaper. They're made of individual squares that show what's happening to the characters and what the characters are saying. For your comic strip you may want to create six squares. This will give you just enough room to tell your short story.

But what will happen in each square? Now is the time to make a plan. Let's look back at the scene about oversleeping. Can we break it into six pieces—one for each square? Of course we can! Here's how it might work for this comic:

### ***The Bad Morning***

**Square one:** *The alarm rang and I reached over and turned it off so I could sleep for a few more minutes.*

**Square two:** *I heard my dad yelling that I was going to miss the bus if I didn't wake up!*

**Square three:** *I jumped out of bed and started getting dressed. I was in such a hurry that I got tangled up in my clothes and fell over.*

**Square four:** *My dad had made me some oatmeal, but I didn't have time to eat it before running to the bus stop.*

**Square five:** *On the bus I was squished between two of the biggest kids in the school.*

**Square six:** *When I finally sat down at my desk, my teacher smiled at the class and said, "Good morning! I hope everyone is having a great day so far!"*

Take out your Comic Strip Notebook and try breaking the scene you wrote into six easy pieces. Remember, you are going to have to show the action in each square with a simple drawing and maybe a few words. This means that you must have only one idea for each square. If you have two ideas, you may want to use only the more important idea. For example, look back at Square three:

**Square three:** *I jumped out of bed and started getting dressed. I was in such a hurry that I got tangled up in my clothes and fell over.*

Here we have three ideas, or actions, in the same square: "jumped out of bed," "started getting dressed," and "got tangled up in my clothes and fell over." It might be difficult to show these three actions in one square. But what's the most interesting and funny part of this square? The part where the character falls over, right? You can cross off the other parts. Your readers will understand that if your character is falling over while getting dressed, she or he has already gotten out of bed. Look over your plan for your squares and make sure that each square shows only one action.

## Creating a Storyboard

Now that you have a main idea for each square, you will need to create a storyboard for your comic strip. A storyboard is like a rough draft of your comic strip. Your goal is to figure out the pictures and words that will best represent the main idea you have chosen for each square. Your storyboard doesn't have to be fancy—you can use stick figures and very basic sketches. Next to each square you can write any conversation that will be in the final draft.

Before you get started, you may want to think a little about the conversations your characters will have. It's important to remember that we read comic books from left to right, just as we read regular books. If you have more than one character speaking in the same square, make sure the character who speaks first is on the left side of the square as you look at the page. This will make it easier for you to arrange the conversation in the square in a logical way.

You may also want to practice arranging figures, objects and words in a square before you create your storyboard. If so, you can try this online at the site “[Comic Creator](http://www.readwritethink.org/materials/comic/index.html) (<http://www.readwritethink.org/materials/comic/index.html>).” This website allows you to choose people, animals, conversation bubbles, props and captions to create an online comic strip. The [Garfield Comic Creator](http://www.nhlbi.nih.gov/health/public/sleep/starslp/missionz/comic.htm) site (<http://www.nhlbi.nih.gov/health/public/sleep/starslp/missionz/comic.htm>) may be useful as well. This site allows you to arrange and create your own Garfield comic strips. When you have finished creating your online comic, you can print it out or clear it and start over.

## More Practice

Here's an example of how you might create a storyboard for your “oversleeping” comic strip. Let's imagine that we chose a superhero for the main character. The storyboard might look like this:



1. Square one: A girl lies in bed. Next to her is a table with an alarm clock. The clock reads “8:00,” and the words “beep, beep, beep,” show that it is going off. The girl’s hand is hitting the top of the alarm. Hanging off her bedpost is an eye mask and a cape with a superhero emblem.
2. Square two: A superhero man is standing at the bottom of the stairs in a house. He is wearing a superhero outfit. He has a briefcase in his hand and is looking at his watch. He is yelling up the stairs with his other hand next to his mouth. Next to the square are the words “Wake up! You’re going to miss the bus!”
3. Square three: Back in the superhero girl’s bedroom, she is trying to tie her cape around her neck but is stepping on the hem and falling over at the same time. Behind her, the clock reads “8:35.”
4. Square four: The superhero man is standing next to the stove in his superhero outfit with an apron around his waist. He is holding out a bowl to the girl superhero, who is (literally) flying out the door. Next to the square are the words, “Bye dad!”
5. Square five: The girl superhero is squished between two big, tall boys on the bus. Her wings are all crunched between them.
6. Square six: The girl superhero is sitting at her desk. Her cape is crooked. Her wings are still crushed. Her hair is sticking out. Her mouth is turned down. She is surrounded by other children at their desks. At the front of the room the teacher is speaking. Next to the square are the words, “Good morning, class! I hope everyone is having a great day so far!”

Create sketches for all six squares of your strip. Write dialogue, or conversation, for the squares that will have words. Try different pictures for the squares to see which best tell the story you have imagined.

For example, look back at square two, above. Here the square shows the father yelling, “You’re going to miss the bus!” But couldn’t we instead show the girl in bed hearing her father’s voice? Of course! There are many different ways to tell (or in this case, show!) a story. You just need to find the way that works best for you! And remember, for your storyboard you

can keep your pictures simple. You will want to save your best talent for when you really draw your comic strip!

## **Draw Your Strip**

How is drawing your comic strip different from creating a storyboard? First, you will want to use your sketchpad or drawing paper instead of your Comic Strip Notebook. Each square will show more detail than the squares of your storyboard, so you will want to make the squares as large as they can be while still fitting all of the boxes on one page. Depending on the shape of your pad, you may want to turn your paper sideways so you have plenty of room. The squares should all be about the same size and an equal width apart. Once you have a little more practice creating comics, you may want to try different arrangements of squares and different sizes of squares in the same comic strip.

Using your storyboard as a guide, begin to draw pictures into your squares. If you have never drawn comics before, you may want to check out these websites for some drawing tips:

### [Draw and Color with Uncle Fred](http://www.unclefred.com/index.html)

(<http://www.unclefred.com/index.html>)

*This website will show you step-by-step how to draw some cool, but very simple cartoon characters. You can do a lot with a few lines, circles and squares!*

### [Cartooning with Blitz, Cartooning Tips](http://www.bruceblitz.com/tips.cfm)

(<http://www.bruceblitz.com/tips.cfm>)

*This website shows easy ways to draw cartoon faces that express cartoon-y feelings. Use the drop-down menu to see tips from past dates.*

### [Club Cooltoons Drawing Lessons](http://www.cooltoons.com/various/drawinglessons/index.html)

(<http://www.cooltoons.com/various/drawinglessons/index.html>)

*Here you will find directions for drawing popular TV cartoon characters. These drawings are a little advanced, but the instructions show you how to create them using simple shapes such as ovals, circles and squares.*

Books like the ones below may also be useful. You can ask your school or local librarian where to find these and other books about drawing comic strips:

**Cartooning for Kids**, by Mike Artell (Sterling, 2002).  
ISBN: 140270111X .

*This book says you don't have to be a great artist to be a good cartoonist—you just have to learn how to think and draw funny things. The book provides instruction on how to draw a bunch of cartoon animals and people, as well as explanations about why each cartoon is funny.*

**Cartooning for the Beginner**, by Christopher Hart (Watson-Guptill Publications, 2000).  
ISBN: 0823005860.

*This book is good for beginning comic strip artists of all ages. It provides information about drawing cartoon heads, facial expressions and bodies, as well as instructions for cartoon animals and other objects. It also points out ten common mistakes new comic strip artists often make and offers advice on how to avoid them.*

As you create your strip, work in pencil and draw lightly. Don't worry if it looks messy, you will erase all the pencil lines later anyway. Add detail and facial expressions. Let your imagination guide you as you create this new world! Remember, if you have conversation in a strip, you will need to leave room around (usually above) your characters for the words.

Once you have drawn the pictures for each square, figure out where you will want the words to go. Then take a ruler and lightly draw lines on which to write your dialogue. This will keep your letters straight. Write the words neatly with a sharp pencil, remembering that the first thing that is said must be on the left. It should also be higher in the square (or at the same height) as what the second character says. Once you have written out all the words, you can draw a conversation bubble around the lettering. Never draw the bubble first—you may not leave enough room for all your words!

## **Ink and/or Color**

The final step in creating your comic strip is to go over your pencil lines with ink, and, if you want, to add color. You may decide that you like your comic strip better in black and white, and that's okay too.

To “ink” your strip, take one of your black pens—“gel” pens work well—and go over the final pencil lines of your strip. Ink all the dialogue in your comic too. Once the ink is dry, use a soft eraser to remove the pencil lines beneath.

To add color, use your judgment and imagination! You may want to work with colored pencils, watercolors, pastels or other supplies. Experiment to figure out which drawing materials are most comfortable for you. Books about drawing comics, such as those listed above, may provide information about inking and coloring as well.



Congratulations! If you have completed this project you have learned a little about comic strips and created one of your own. Now you just need to share your results with others. One option is to enter a comic strip contest such as the one listed below.

[The Amazing Kids! Comic Strip Drawing Contest! \(http://www.amazing-kids.org/comicscontest.html#top1\)](http://www.amazing-kids.org/comicscontest.html#top1)

*This annual contest has several age levels, including one for kids ages eight to eleven. The grand prize is a \$1,000 scholarship from the popular cartoon website, Toonville.com, and a chance to learn from a professional cartoonist. Your comic strip will be featured on the Amazing Kids! website. Click this link for [contest contact information](http://www.amazing-kids.org/contactus.html) (http://www.amazing-kids.org/contactus.html).*

Another option is to create a “small-press comic,” or a comic book you put together yourself. If you have a copy machine at school, you may be able to draw your comic book and then make copies for your school library and classmates. Many well-known cartoonists have

gotten started by creating small-press comics—including Jeff Smith, who wrote Out from Boneville and its sequels.

You may also want to check with your school newspaper to see if you can publish your comics there. Maybe they need a cartoonist to write an ongoing comic strip! This would give you the opportunity to develop your cartooning skills while sharing with others.

Local papers may also offer opportunities for publishing your comic strip. Click on your state in this [directory of U.S. newspapers](#) ([http://dir.yahoo.com/news\\_and\\_media/newspapers/by\\_region/u\\_s\\_states/](http://dir.yahoo.com/news_and_media/newspapers/by_region/u_s_states/)), and then select the “Complete List” link. This will provide you with a list of all the major newspapers in your state. Just remember, like all artistic adventures, publishing your comics may take persistence. Don’t give up! And in the meantime, if you enjoyed this project, keep drawing your comics. You may be amazed at what you can create with a little time and lots of practice!

Would you like to take a comic strip fieldtrip? Here are some museums entirely dedicated to comics and cartooning:

[Charles M. Schultz Museum](#)

(<http://www.charlesmschulzmuseum.org/home.html>)

*This Santa Rosa, California museum is all about the famous creator of the Peanuts comic strip. Here you can see Snoopy and his friends as they changed over time. For more active learning, you can also walk through an outdoor Snoopy-shaped labyrinth and visit an “education room” with drawing materials, activity sheets and books about drawing cartoons.*

[The New York City Comic Book Museum](#)

(<http://www.nyccomicbookmuseum.org/main.htm>)

*Did you know that comic books were first created in the United States? This museum focuses on the history of comic art, and its importance in our nation’s history. You can see exhibits of comic book heroes, such as the X-Men, and also more serious comics about world events.*

[Cartoon Art Museum](http://www.cartoonart.org/)

(<http://www.cartoonart.org/>)

*This museum, in San Francisco, California, has exhibits about current comic artists as well as famous artists of the past. Here you might find a special exhibit on one talented artist, or a focus on small-press publishing, or information about graphic novels that are seen as literature.*

Here are some summer camps that offer comics/cartooning programs:

[Lakewood Arts Academy, Dallas, Texas](http://www.lakewoodarts.com/aboutus/about.htm)

(<http://www.lakewoodarts.com/aboutus/about.htm>)

*This program is for kids ages nine and up who want to learn the basics of drawing comics. Students will present their work in different forms, including comic books and flip-books.*

[Brickton Art Center, Park Ridge, Illinois](http://www.bricktonartcenter.org/youthcamps.php)

(<http://www.bricktonartcenter.org/youthcamps.php>)

*Come study the work of famous comic artists and create comics of your own at Brickton Arts Center's "Heroes and Villains Camp." This one-week day program is for students ages nine through twelve who want to learn to create a comic strip or comic book.*

[Cartoon Camp, Boca Raton, Florida](http://bocakidz.com/NewFiles/cartooncamp.html)

(<http://bocakidz.com/NewFiles/cartooncamp.html>)

*Students ages five through fourteen can learn how to create comic books, make animated movies, and learn how to use computers in comic art at this summer day camp. Programs begin at two weeks, but may be extended for an additional fee.*



**Out From Boneville (Bone, Book 1)**, by Jeff Smith (Cartoon Books, 1996). ISBN: 0963660993.

**Amy Unbounded: Belondweg Blossoming**, by Rachel Hartman (Pug House Press, 2002). ISBN: 0971790000.

**Clan Apis**, by Jay Hoseler (Active Synapse, 2000) ISBN: 096772550X.

**Cartooning for Kids**, by Mike Artell (Sterling, 2002). ISBN: 140270111X .

**Cartooning for the Beginner**, by Christopher Hart (Watson-Guption Publications, 2000). ISBN: 0823005860.



## Internet

### **Snoopy.com**

<http://www.snoopy.com/comics/peanuts/index.html>

### **Amazing Kids Comics**

<http://www.amazing-kids.org/akcomics.htm#akcindex>

### **Draw and Color with Uncle Fred**

<http://www.unclefred.com/index.html>

### **Cartooning with Blitz, Cartooning Tips**

<http://www.bruceblitz.com/tips.cfm>

### **Club Cooltoons Drawing Lessons**

<http://www.cooltoons.com/various/drawinglessons/index.html>



## SEM Xplorations

### Lay Out the Welcome Mat:

#### Create a Brochure for New Kids in Your School or Community

Have you ever traveled to a new town, state or even country? If you have, did you know what sort of activities and sights were available to you in this new place? How do people find out about new places? Most visitors ask residents for help and advice, or do research on their own. But what if you were a student and the unfamiliar place is a new school? You may not be able to find any information about your new school in books or online, and you may feel too shy to ask. You can be a valuable resource to others because you know information about your own community. You also probably know other people who know about your town or city. This project will take you on a visual journey of many different places close to your home. At the end, you will have created a brochure for new school children and can give advice about places kids can go in your community. Keep in mind it will take planning and a few drafts before you will be ready to publish your final product.



What are you waiting for? Let's get started! Communities are filled with good places to play, interesting places to learn, and special places to enjoy. You can start planning by brainstorming a list of places to go and things to do in your community. Brainstorming is a way to come up with lots of ideas about something.



Here are four important things you should know about brainstorming.

1. Think of lots of ideas.
2. Think of all different kinds of ideas.
3. Try to “piggyback,” or add on to other ideas.
4. Give every idea a fair chance. Wait until later to decide which ideas are best.

Take a scrap piece of paper and begin brainstorming!

Now you’ve made a list of all the places you think a new child should know about. Do you think other children would have made different lists? They might. Your favorite places might not be the same as someone else’s.

Your brochure should include places that interest lots of different children. How can you get more ideas about places to include? One way to get many ideas is to interview people. In an interview, you ask questions in an organized way. You might interview some children you know who have lived in your community for a long time. They may give you information that will help you with your project.



## Planning Your Interviews

A good interviewer must be prepared and organized. Before you do an interview, you need to decide what questions to ask. There are several things you should know about making up good questions.

There are two kinds of questions—**closed-ended questions** and **open-ended questions**. A closed-ended question can be answered with just one word. Here is one closed-ended question: *What is your favorite sport?* Here is another closed-ended question: *Do you like to play soccer?*

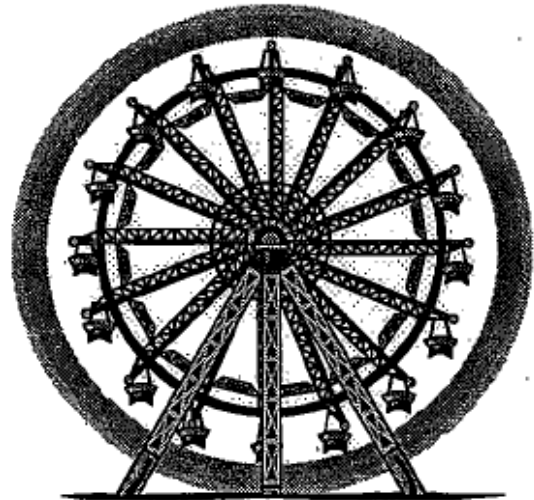
An open-ended question cannot be answered with just one answer. It can have many different answers, depending on who is answering the question. Here is one open-ended question: *What do you like to do in your spare time?* Here is another open-ended question: *What places in our community do you think both adults and children can enjoy?*

When you interview people for ideas of places to put in your brochure, should you use closed-ended or open-ended questions? The purpose of your interviews is to get information, so you won't be looking for right or wrong answers. That means that most of your questions will be open-ended.

Try to avoid closed-ended questions in an interview like this. Look at these two questions and decide which one would give you better information:

1. *Do you like to play at our town park?*
2. *Where is your favorite place to play in our community?*

You can see that the second question enables you to come up with many answers and will therefore give you more information. The children you interview may say that the town park is their favorite place to play, or they may surprise you and say they like to play in other places. They may even tell you about places you didn't know about.





## Doing Your Interviews

Ask your teacher or parent about the best way to do your interviews. Maybe your teacher can help you choose a good time and place.

Be sure to take a pencil and a copy of your interview sheet with you to each interview. Try to have a clipboard or a table to write on. Remember always to be polite to the person you are interviewing.



Start your interview by explaining about the “Welcome” brochure you want to make. If the children you interview understand the kind of information you are looking for, they will be able to answer your questions better. Don’t try to write down every word of an answer. Don’t even try to write complete sentences. Just write down a word or a few words to remind you of important information. You can fill in the details after the interview.

It is usually a good sign if the person you are interviewing does most of the talking. You should listen closely and make your notes. Remember, you want to learn from the people you interview.

Don’t feel you have to stick to your prepared questions. If someone says something you would like to know more about, ask. You can write notes about the answer on the back of the sheet.

When you finish an interview, be sure to thank the person for answering your questions.

### **Organizing Your Information**

As soon as possible after an interview, sit down with your interview sheet and think about all that was said. If you think of more details, add them to your notes. Do this while the interview is still fresh in your mind. That way your notes will be more complete when you use them later to make your brochure.

When you have finished all your interviews, make a list of all the favorite places people described. Compare this list to the list you made when you brainstormed at the beginning of this project. Did the people you interview give you some new ideas? Were any places mentioned by only one child? Was any place mentioned by everyone?

Now try putting your ideas into categories. Your categories might be things like this: *Best Places to Play* and *Tastiest Food in Town*. Your categories might be something like this: *Winter Activities* and *Summer Activities*. It's up to you. Make up your own categories. Just remember that your brochure will be easier to understand if similar things are listed together.

### **Making Your Brochure**

Before you make your brochure, try to look at some other brochures. Ask your teacher or a parent if you can look at any brochures they may have. You may be able to find some on your own, too. You can often find brochures at grocery stores, libraries, or doctors' offices. Go hunting!

A sample brochure online can be found at:

### **Benefits of Honey**

<http://www.nhb.org/download/broch/beauty.pdf>

*This website has a sample brochure with bright colors, interesting pictures and well-organized text.*

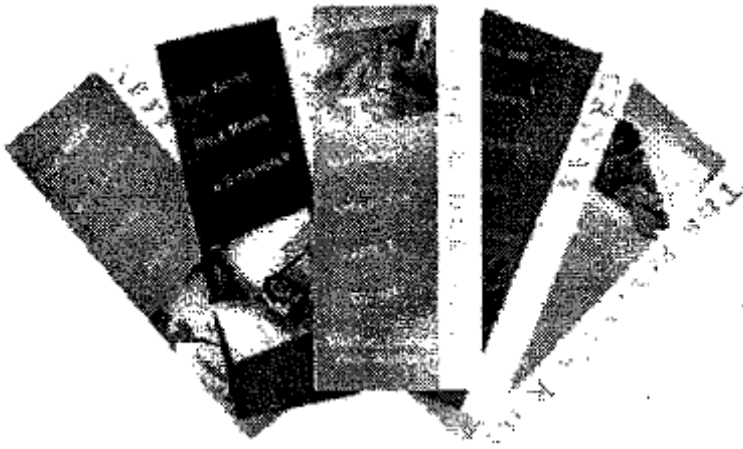
Another good resource you can find in a library is this book:

### **How to Make Newsletters, Brochures, and Other Good Stuff Without a Computer System** by Helen Gregory (Pinstripe Publishing, 1993).

ISBN: 0941973107.

*This book will provide more examples showing how to create your own brochure by hand.*

Look carefully at the brochures. How are they folded? Do they have pictures? How are they written? Who are these brochures written for?



Notice that brochures have the number of columns that best display the amount of information presented. Now it is time to start thinking about how many columns you will need to display your information clearly. You can fold your brochure in different ways too.

Look at the pictures. Are they colorful? Are there many pictures or only a few? Which is your favorite brochure? What style do you want to use for your brochure? What color paper would be best? Would it look better with the aid of a computer?

### **My Brochure Maker**

<http://www.mybrochuremaker.com/>

*Create and print a brochure using a pre-designed format. (This would be a good website to create a draft to see where your information looks best.)*

Next, make a rough draft of your brochure to see where to put the information and pictures. If your brochure is going to be folded, fold the paper first and figure out which information should go on which section. Remember your audience. Your brochure should be interesting to children. Use your imagination! Your brochure can be funny or serious, but it must be neat, interesting and easy to understand. Be sure your information is accurate, too. Be sure to leave room for a title and your name. There is a lot of information to consider. Think carefully about all possibilities. You may want to make two or three rough drafts before you have a design that works.

When you are happy with your rough draft, make a final copy. Your final copy can be completed using a computer or by hand. If using computer, there are a few formats you might consider. Some people type their work using a word processing program like Microsoft Word, then cut out the words to paste on the brochure. Other people use a program that allows you to create a brochure, like Microsoft Publisher, which you may already have on your school or home computer. Be as neat as you can, and try to make your brochure attractive with pictures and color. Try to include your own hand-drawn pictures as often as possible. You may want to ask your teacher or parent to check your spelling.

Once your brochure is finished, you need to decide about the number of copies needed for your school and for other schools in your district. A photocopy machine will be useful to you so you can make many copies at one time.



# Launching Your Results



## Sharing Your Brochure

You might want to give copies of your brochure to each school in your community so new children can receive a copy. Does your community have a club or organization that helps newcomers get settled? A Chamber of Commerce and Welcome Wagons usually provide useful information to new residents. You might want to give a few copies of your brochure away to organizations like this. Ask your teacher or parent how to get in touch with them. Your town's school board meeting might be a good place to present your brochure.

Congratulations! You've made something that will help newcomers to your community feel welcome and at home.

# Treasure Chest of Tools



**How to Make Newsletters, Brochures, and Other Good Stuff Without a Computer System**  
by Helen Gregory (Pinstripe Publishing, 1993). ISBN: 0941973107.



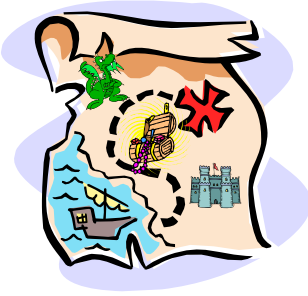
# Internet

## **Benefits of Honey**

<http://www.nhb.org/download/broch/beauty.pdf>

## **My Brochure Maker**

<http://www.mybrochuremaker.com/>



## *SEM Xplorations*

### **Lights, Camera...Social Action!**

#### **Make a Commercial about an Important Cause**

Have you ever saved your money to buy a toy or game that you saw in a commercial? Do the previews at the movies make you think about the films you want to see next? If so, you have responded to effective advertising. You may be wondering what we mean by effective advertising. It's a simple definition—effective advertising is any advertisement that makes you (or someone else) want to spend money to buy a product or even a service, such as a trip or a massage.

How does effective advertising work? First, advertisers try to figure out what type of person might want to buy a particular product. Then they create a commercial or preview that will seem particularly cool and interesting to that exact type of person. This is called “marketing.” Marketing is a powerful tool that sometimes encourages people to buy things that they may not even really want or need. This is a negative aspect of marketing.

But marketing can be positive when it's used for a good purpose. For example, organizations that try to solve important problems such as environmental pollution and world hunger often use marketing to make people care about these issues. They know that if people care, they will be more likely to help fix the problems.



Are there any problems in your environment or in our world that you think should be fixed? Are there issues you care about? If so, you can make a commercial about one of these problems.

You can use marketing to encourage others to care about this problem too. If this sounds interesting, you may want to follow these six steps:

### ***Steps for Making a Good Commercial***

1. Learn about and select an interesting problem for your commercial.
2. Learn about marketing.
3. Decide upon audience—who will see your commercial.  
(These people will be your **target audience**.)
4. Design an advertisement for your target audience.
5. Practice your commercial and perform it.
6. Send your commercial to a local television station or another audience.

Following are some books to help you with this process. These are about video productions, but you may find them useful even if you decide to perform your commercial live instead of videotaping it:

**KidVid, Fun-Damentals of Video Instruction : Grades 4 Through 12** by Kaye Black (Zephyr Press; Revised edition, 2000).

ISBN: 1569761043.

*This book provides lots of illustrations and cartoons to teach you about important tools such as scripts and storyboards—both of which you can use for your commercial.*

**Attack of the Killer Video Book**, by Mark Shulman, et al (Annick Press, 2004).

ISBN: 1550378406.

*This book is primarily about making movies, but a commercial is really a type of mini-movie! Here you will find tips for organizing your ideas, creating storyboards and producing your commercial.*

This book is about stage productions, which may also be useful to you:

**Break a Leg!: The Kid's Guide to Acting and Stagecraft** by Lise Friedman, Mary Dowdle (Workman Publishing Company, 2002).

ISBN: 0761122087.

*Here you will find information about acting, scripts, rehearsals, and overcoming stage fright. There are also chapters about lighting, sound, costumes and makeup.*

You will be learning a lot as you prepare for your commercial. You will want to have a special notebook to write down ideas as you do your research. This way you won't forget them before you can use them in your commercial.

### **Find a Problem That You Care About**

What do you think of when you hear about rainforests disappearing, or people experiencing hunger in other countries? Do these issues seem very distant from your life? Do they just seem like something that you would hear about on the news? If so, these aren't the right problems for you to learn about. To make a really great commercial, choose an issue that interests you and about which you have strong feelings. Your feelings will come through in your commercial and make your audience feel energized and interested too!

At the end of this project you will find links to some websites about different problems in the world. You can choose a problem for your commercial from this list, or pick another issue that interests you. This book may also give you some ideas:

**The Kid's Guide to Social Action**, by Barbara A. Lewis (Free Spirit Publishing, 1998). ISBN: 1575420384.

*Here you will find information about projects such as cleanup of toxic waste, children's rights, and more. There are also stories about kids like you who have made a difference in the world!*

Once you have decided what your commercial will be about, you may want to use a search engine such as [Ask Jeeves for Kids \(www.ajkids.com\)](http://www.ajkids.com) or [Yahooligans \(www.yahooligans.com\)](http://www.yahooligans.com) to find additional information. You can also ask your school or local librarian to help you to find books about your cause.

## **Learn about Marketing**

Have you ever bought or received a toy that you wanted, only to lose interest after playing with it a few times? It probably seemed pretty cool when you saw it on TV or in the store. So how could it be so unexciting in real life? The answer is marketing! Advertisers used lots of tricks to make you think that their toy was the most exciting, interesting toy you could own. How did they do this?

[Don't Buy It \(http://pbskids.org/dontbuyit/\)](http://pbskids.org/dontbuyit/) is a website that will tell you all about marketing tricks that make us want to buy stuff. There are several sections to this website, and all of them are fun and informative. As you click through the site, you may see some things that will help you with your commercial. You may want to take some notes about ideas you could use to market your cause. You will also see how you yourself are the target of marketing!

### [Advertising Tricks \(http://pbskids.org/dontbuyit/advertisingtricks/\)](http://pbskids.org/dontbuyit/advertisingtricks/)

*Here you will find information about “food stylists” who make TV food look beautiful, sneaky advertisements that are all around us, and ideas that advertisers hide in their commercials.*

### [Buying Smart \(http://pbskids.org/dontbuyit/buyingsmart/\)](http://pbskids.org/dontbuyit/buyingsmart/)

*Practice thinking critically about the products you buy. Why are some clothes so much more expensive than others? Do you think you can tell the difference between a trendy brand-name outfit and a bargain outfit? When you buy a product who gets the money? You will find answers to these and other questions in this section.*

[Your Entertainment](http://pbskids.org/dontbuyit/entertainment/) (<http://pbskids.org/dontbuyit/entertainment/>)

*See how pop stars and models are “created” by people who want you to buy products; learn about how TV distorts real life; explore the role of music in commercials; and see how your TV viewing habits compare to national averages.*

[What You Can Do](http://pbskids.org/dontbuyit/whatyoucando/) (<http://pbskids.org/dontbuyit/whatyoucando/>)

*You can get involved in efforts to stop false, misleading or harmful advertising. Mail letters, get more information and learn about other kids who have made a difference in fighting negative media.*

Want some more ideas? Here are a few more links that will tell you about marketing:

[ibuydifferent.org](http://www.ibuydifferent.org/index.asp) (<http://www.ibuydifferent.org/index.asp>)

*Why do you buy what you buy? How do your purchases affect the earth? This cool website provides information about how you can make a difference in the world just by changing your spending habits. Make sure to check out the [Why We Buy](http://www.ibuydifferent.org/powerup/why_we_buy.asp) ([http://www.ibuydifferent.org/powerup/why\\_we\\_buy.asp](http://www.ibuydifferent.org/powerup/why_we_buy.asp)) section of the website. You can take some notes on techniques that may help you with your commercial.*

[Consumer Reports.Org 4 Kids](http://www.zillions.org/) (<http://www.zillions.org/>)

*This website has information about all kinds of products as well as information about advertising. You might find the Money Smarts link and the Ad Smarts link (on the main page) particularly useful for this project.*



## **Decide Who Will See Your Commercial**

Deciding who should see your commercial—also known as choosing a “target audience”—is one of the most important parts of this project. To figure this out, you may want to ask yourself a few questions:

1. *Who can I easily reach with my commercial? (Who will be a convenient audience?)*

Most professional advertisers can reach almost anyone by putting advertisements on TV, in magazines, on billboards, etc. But you will have to think carefully about this first question. If your classmates are the only audience that you are sure you can show your commercial to—

and you should ask your teacher about this—then you will want to make a commercial that will appeal to kids like you. But it may be that you have access to other audiences. Could you show your commercial to a town organization, to a group of teachers or parents, or to a group of older students in your town? These are ideas to consider.

2. *Who is likely to be interested in the problem I've chosen?*

Who do you think would be interested in your cause? For example, if you're creating a commercial about an environmental problem in your town, you might want to think about who could be affected by this problem. Who lives close to the problem? Who works near the problem? If you're doing a commercial about hunger, what types of people would be interested in this issue? Are there church groups that care about this problem?

3. *Who may be able to do something about the problem?*

You may want to consider showing your commercial to people who will not just be interested in your problem, but who have the power to do something about it! If you are concerned about the environment, could you show your commercial to a town planning committee that makes environmental decisions for your community, region or state? If your commercial is about childhood cancer, could you show it to the PTA or to another organization that might be interested in raising money for your cause? Can it be sent to a television station that might play it as a public service announcement?

Take out your notebook and brainstorm all of the groups that you can think of who might be interested in your commercial. Now try to think of any group that might be able to do something about the problem. Could some of these groups go on both lists? Are these groups that would be willing to see your commercial? If so, you have found your target audience or audiences!



If your target audience is not your classmates, check with your parents or a teacher to make sure that you have transportation to your audience and that you have selected an appropriate audience. Once you have the green light, you can contact the organization you have selected to ask if you may show your commercial to its members. If you have selected a church group, for example, you may want to speak with the minister or an officer of the church. If you have selected the PTA, you may have to do some detective work to identify the leader and to figure out how to reach him or her. If you have selected a public service announcement, work with an adult who can help you to contact your local television or radio station and ask how you can “air” your announcement.

### **Design Your Commercial**

You’re finally ready to design your commercial! But where should you begin? First, you should watch some commercials. Take some notes about commercials you like or don’t like. What do you find entertaining or interesting? Are there details such as fun music or animation? Are there kids in cool clothes or celebrities presenting the information? Remember, these are marketing tools that you can use—although it may be difficult to convince a celebrity to help you out with this project!

Another good idea is to check out these “[buying factors](http://www.ibuydifferent.org/powerup/buy_factors.asp)” [http://www.ibuydifferent.org/powerup/buy\\_factors.asp](http://www.ibuydifferent.org/powerup/buy_factors.asp) that make people want to purchase things. Can you use any of these factors in your commercial? For example, can you imply that it’s “cool” to care about your cause? Or that lots of other people are fighting for your cause (peer pressure)? This is also the time to look back at the notes you made while looking at marketing websites.

Once you have some marketing ideas, you will want to figure out exactly what your commercial will say and show. Here are some questions that will help you to plan your commercial:

- ★ How will you tell your audience about the problem? For example, will you have someone speaking directly to the audience or camera? Or would you rather create a little story with people acting out the problem?
- ★ What information will you include in your commercial? Will you include the details below?
  - Who the problem affects
  - How it affects people (or animals or plants)
  - How big it is—how many people, species or regions it affects
  - Why people should care about this problem
  - What people can do about the problem
- ★ What will you show to make people care about your cause? For a commercial about homelessness will you show pictures of homeless children? For an advertisement against hunger, will you have someone act out a scene as a hungry person?
- ★ Will you use music? If so, what type will best fit the mood of the commercial? What type will fit your audience? Will you use rock music for an advertisement directed at teachers? Or serious classical music for an advertisement directed at kids?

Once you have answered these questions, you will be ready to create a storyboard. A storyboard is a visual plan for your commercial. It will help you to decide on important details of your commercial, including:

- The setting
- The person or people in the commercial
- The lighting
- Video angles for your commercial (if you decide to videotape it)
- The noises in your commercial, including music, background noise, and more

To get a better idea of how storyboards work, you can check out this [cool storyboarding activity](#) online. For this activity, type the name of your commercial in the “Description” box you find when you enter the site. Then choose the setting, people, lighting, and other important details of each section. Your commercial may have just one scene, but you can have more if you need them! Once you complete your scene or scenes, you can print out your digital storyboard using the link in the lower right corner of the screen.

You could also create a storyboard on paper. For each scene of your commercial, you will have a square on your storyboard. For each square, you may want to include the following details:

A picture that shows how the information in the commercial will be told. If you imagine a single person talking to the audience about the problem you have selected, create a picture of this person speaking. Show any scenery you would include for the commercial. If your commercial will show a conversation about your problem between two or several people, draw the people and the setting you imagine for them.

The text of what your speaker or characters will say.

Under your picture, write out the text of your story.

Information about materials used for presenting information. For example, if someone is speaking directly to the audience about hunger, he or she may show pictures of children who don't have enough to eat.

Information about music and other sounds

If a particular song will be playing during all or part of the commercial, write a note about this under the square. If there will be other noises—dogs barking, children playing, etc., write that too.

Information about camera angles, e.g., close-ups, and lighting.

You will only need this information if you plan to videotape your commercial.



### **Practice Your Commercial**

Now it's time to prepare the performance of your commercial. You can make a script from the text on your storyboard. If you will be the only actor in your commercial, practice reading your lines in front of a mirror. If you need friends or others to act out different roles, make sure you practice together at least a few times. Learn all of your lines so that you can set a good example. Ask the other members of your cast if they have any ideas to improve the commercial.

Now is also the time to gather all the materials you will need to do your commercial. Will you or other actors wear a costume? If so, you will need to create it yourself or ask a parent, teacher or friend to help. Do you need to make scenery? Or find props? What about your music? Do you own a CD or tape with the songs that you want to use? Can you get one from your school or local library?

Once you have all the details worked out, try showing your commercial to friends or family. Do they have any suggestions for you? Are you and the other actors speaking loudly enough? Are your words clear? Are you remembering to face your audience at all times?

### **Perform Your Commercial**

Are you ready to perform your commercial? If so, you have two options: You can act your commercial out “live” for your target audience; or, if you have access to a video camera, you can record your commercial and show it to your audience on a TV. Either way is fine. Here are a few things to remember to make your performance really shine:

- Make sure you and other actors know all your lines
- Speak loudly and slowly
- Face your audience
- Be prepared to answer follow up questions
- Offer information about who your audience can contact to get involved in your cause
- Have fun!
- Send a thank-you note to your audience after you perform the commercial

Congratulations! You have completed a meaningful and interesting project that may benefit an important cause. You should be very proud of yourself!

If you enjoyed this project, you may want to consider finding other ways to help solve the problem you showed in your commercial. For example, if you chose to create a commercial about a local humane society, could you volunteer to help with the animals? If you selected an environmental cause, are there any groups in your area that deal with environmental issues? If so, maybe you could join one of these groups. The websites you used to research your problem

may also have good ideas about how you can stay involved. This book, which you may have used to select a cause, will also give you information about how you can make a difference:

**The Kid's Guide to Social Action**, by Barbara A. Lewis (Free Spirit Publishing, 1998). ISBN: 1575420384.

*Learn skills, such as letter-writing, speech-making, surveying, fund raising, and even getting media coverage for an important cause! You will also find samples of projects other kids have done and other tools to help you turn your interest into action.*

The bad news is that there are many problems in the world. The good news is that there are also problems solvers like you to find solutions! Good luck!

## Interesting Causes

Many problems described on the websites below are world or national issues. You can certainly show an issue in you commercial about a world or national problem. But is it possible that these problems also affect your community? Unfortunately, they probably do. So another option is to make a commercial about how a particular problem impacts your neighborhood, town or city. You may also know of a community problem that has nothing to do with the types of problems on the list. If you made a commercial about this type of issue, you would be doing your community an important service. It's very important for people to know about problems close to home.

### Hunger:

- ★ [Kids Café Facts](http://www.freestorefoodbank.org/kidscafe/kids_cafe_preventing_childhood_hunger.html)  
([http://www.freestorefoodbank.org/kidscafe/kids\\_cafe\\_preventing\\_childhood\\_hunger.html](http://www.freestorefoodbank.org/kidscafe/kids_cafe_preventing_childhood_hunger.html))  
*This website provides basic information about kids living with hunger in the United States.*
  
- ★ [Kids Can Make a Difference Hunger Facts](http://www.kidscanmakeadifference.org/hunfa.htm)  
(<http://www.kidscanmakeadifference.org/hunfa.htm>)  
*This website is a little more challenging to read, but there's important information about hunger here. If you need a little help, why don't you ask a parent or teacher?*

- ★ [Gleaners Food Bank—What Happens When Kids Go Hungry](http://www.gcfb.org/kids.html#hungry)  
(<http://www.gcfb.org/kids.html#hungry>)  
*Do you know that kids who are hungry have more illnesses, miss more school and are less curious than kids who get enough to eat? This link will take you to more information about hunger and kids in United States.*
- ★ [What Kids Can Do \(about hunger\)](http://www.kidscanmakeadifference.org/cando.htm) (<http://www.kidscanmakeadifference.org/cando.htm>)  
*Here's some information about how kids like you can fight hunger. Maybe you could include some of these suggestions in your commercial.*
- ★ [Fight Hunger Close to Home:](http://secondharvest.volunteermatch.org/) <http://secondharvest.volunteermatch.org/>  
*Enter your city and state to find volunteer opportunities in your area. Tip: Leave the "USA Freedom Corps" field set to "Everything" to find the most matches.*

### **Homelessness:**

- ★ [National Alliance to End Homelessness Fact Sheet](http://www.naeh.org/pub/factsheets/Usmid.pdf)  
(<http://www.naeh.org/pub/factsheets/Usmid.pdf>)  
*Did you know that each night about 750,000 people in the United States go to sleep in a temporary shelter or on the streets because they don't have real homes? This fact sheet about homelessness provides information about how people become homeless and how kids like you can fight homelessness. There are also some exercises to help you really think about homelessness. Would a demonstration of one of these exercises make a strong point in your commercial?*

### **Cancer:**

- ★ [Facts about childhood cancer](http://www.alexslimonade.com/childhoodcancer.php) (<http://www.alexslimonade.com/childhoodcancer.php>)  
*Do you know how many kids are diagnosed with cancer each day in the United States? How many American schools, on average, have students with cancer? Find out the answer to these questions and more on this website.*
- ★ [Alex's Lemonade Stand](http://www.alexslimonade.com/) (<http://www.alexslimonade.com/>)  
*Alexandra Scott was diagnosed with cancer before she was one year old. When she was four years old she decided to raise money for childhood cancer research. Although Alex died in 2004, lemonade stands like the ones she held when she was alive have now raised more than one million dollars for pediatric cancer.*
  - [This website](http://www.alexslimonade.com/aboutthestand.php) (<http://www.alexslimonade.com/aboutthestand.php>) *describes the lemonade stands that Alex held.*
  - [This document](http://www.alexslimonade.com/images/newpacketaug04.pdf) (<http://www.alexslimonade.com/images/newpacketaug04.pdf>) *provides information about how kids like you can hold their own Alex's Lemonade Stands to raise money for pediatric cancer.*

- ★ [Amazing Kid! of the Month for April, 2004: Amazing Ornaments4Cure.org](http://www.amazing-kids.org/akom4-04.htm)  
(<http://www.amazing-kids.org/akom4-04.htm>)  
*Read about how 14-year-old Jena Sims has helped to raise more than \$36,000 for the American Cancer Society.*

### **Animal protection/rights:**

- ★ [The National Humane Society](http://www.hsus.org/) (<http://www.hsus.org/>)  
*The Humane Society is an organization that protects all kinds of animals. Here you can learn about protecting pets, marine animals, lab animals and more. There is also information about how you can support the Humane Society.*
- ★ [Local animal shelters](http://www.pets911.com/organizations/organizations.php) (<http://www.pets911.com/organizations/organizations.php>):  
*You can support animal protection close to home by making a commercial about a local branch of the Humane Society or a regional animal shelter. The link above will help you to find a nearby shelter. You may find shelters with web pages describing their purposes and needs, but you may also find phone numbers that you can call for more information.*
- ★ [PETA for Kids](http://www.PETAkids.com) ([www.PETAkids.com](http://www.PETAkids.com))  
*PETA is an organization for people who believe very strongly in animal rights. They believe that we shouldn't use animals for food, clothing, medical research or any other human need. Other people believe that many human needs are more important than those of other species. For example, all drugs and treatments for cancer are tested first on animals. These drugs save lots of children and adults from this terrible disease. What do you think about this issue?*

### **Endangered species:**

- ★ [Environmental Protection Agency \(EPA\) Endangered Species Poster](http://www.epa.gov/oppfead1/endanger/endspec.htm)  
(<http://www.epa.gov/oppfead1/endanger/endspec.htm>)  
*This list of questions and answers will provide you with information about why we protect endangered animals, how species become extinct, and more. This is a good site to visit first in your research into endangered species because it answers some basic questions.*
- ★ [U.S. Fish and Wildlife Service, Kids Corner](http://endangered.fws.gov/kids/index.html#resources)  
(<http://endangered.fws.gov/kids/index.html#resources>)  
*This site has lots of great information, but you may especially want to check out the **Species in the Spotlight** and **More Species in the Spotlight** sections. These links will take you to information about endangered species about which many people have expressed interest. For your commercial would it be better to choose an animal that many people will like—or an animal that few people know about? What do you think?*
- ★ [Wildlife's Last Resort](http://www.wildlifeslastresort.com/) (<http://www.wildlifeslastresort.com/>)  
*This fun website has lots of specific information about endangered animals. Once you enter the Resort click on **The Hotel** at the top of the page. From there, stop by **Jake's Office** to check out **The Investigations**. This link will take you to a list of at risk or*



endangered animals and information about each. Check out **The Staff** and **The Guests** for more endangered species. Other links will take you to games, quizzes and contact information for the site.

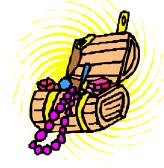
### **Environmentalism:**

- ★ [EPA Global Warming Kids Site \(http://www.epa.gov/globalwarming/kids/\)](http://www.epa.gov/globalwarming/kids/)  
*Learn about the factors that contribute to global warming, view climate animations, see what climatologists do, and more. This is a great site! It has lots of information and activities geared toward kids like you.*
  
- ★ [The Eden Project—Virtual Workshops \(http://www.learn.co.uk/edenproject/workshops/default.htm\)](http://www.learn.co.uk/edenproject/workshops/default.htm)  
[The Eden Project \(http://www.learn.co.uk/edenproject/why/why.htm\)](http://www.learn.co.uk/edenproject/why/why.htm)  
*These websites were created to encourage environmental interest in many different types of people. How does the Eden Project do this? By providing information about how plants bring us pleasure and are important to our lives. The online adventures you will find through this link will help you learn more about plants and their habitats. They're also lots of fun!*
  
- ★ [RainforestWeb.Org \(http://www.rainforestweb.org/Rainforest\\_Information/Sites\\_for\\_Kids/\)](http://www.rainforestweb.org/Rainforest_Information/Sites_for_Kids/)  
*This is a huge database of resources for kids.*

### **Other problems:**

- ★ [More Ideas \(http://www.ysa.org/nysd/projectidea/nysd\\_projectidea\\_parent.cfm\)](http://www.ysa.org/nysd/projectidea/nysd_projectidea_parent.cfm)  
*This website provides examples of service projects performed by kids like you for National Youth Service Day. Maybe it will give you some ideas about issues in your own community that you would like kids to know about.*

# Treasure Chest of Tools



**KidVid, Fun-Damentals of Video Instruction : Grades 4 Through 12** by Kaye Black  
(Zephyr Press; Revised edition, 2000). ISBN: 1569761043.

**Attack of the Killer Video Book**, by Mark Shulman, et al (Annick Press, 2004). ISBN:  
1550378406.

**Break a Leg!: The Kid's Guide to Acting and Stagecraft**  
by Lise Friedman, Mary Dowdle (Workman Publishing Company, 2002). ISBN:  
0761122087.

**The Kid's Guide to Social Action**, by Barbara A. Lewis (Free Spirit Publishing, 1998). ISBN:  
1575420384.



## Internet

### **Don't Buy It**

<http://pbskids.org/dontbuyit/>

### **ibuydifferent.org**

<http://www.ibuydifferent.org/index.asp>

### **Consumer Reports.Org 4 Kids**

<http://www.zillions.org/>



## SEM Xplorations

### Mary, Mary, Quite Contrary, How Does Your Garden Grow?: Study the Science of Gardening!

Have you ever heard someone say that a person has a *green thumb*? It doesn't mean that the person's thumb is green, of course! It means that the person grows plants easily and is good at keeping them healthy. Why do you think some people have green thumbs and others do not? People who have green thumbs understand the science behind the way plants grow and put this knowledge to use! You can have a green thumb, too, if you research the best ways to grow seeds into plants. Once you've researched and found the best way to grow plants, you can help others have green thumbs by writing a handbook or giving a presentation to share what you have learned!



### Experimenting

Since it is likely that you see plants on a daily basis, you have probably also made **observations** about how, where, and under what circumstances they grow best. Maybe you have learned about plants by helping your parents or teacher take care of plants in your home, classroom, or garden. To learn more about the way plants grow best, put on your lab coat and prepare to get dirty conducting some science experiments!

On the pages that follow, you will find three experiments that you can do with seeds and plants. These three experiments study:

1. If seeds have a top and a bottom, and if you have to place a seed in the soil a certain way for it to grow correctly.
2. If sunlight is important for plants to be healthy and strong.
3. How much water seeds need to grow best.

As you conduct your experiments, keep track of all your information by writing it in a **lab notebook**. A lab notebook is just a notebook that you set aside especially for scientific information. Try to begin each experiment on a new sheet in your notebook to keep your notes organized.



## EXPERIMENT 1

### **Questions to Answer:**

Does a seed have a top and a bottom?

Do you have to place a seed in the soil a certain way for it to grow correctly?

### **Materials You Will Need:**

2 clear medium sized jars or clear plastic cups

Paper towels or cotton

10 lima beans (seeds)

Water

Sunlight

## **Conducting the Experiment:**

There are certain things you must do at different times during this experiment.

### ***The First Day***

1. Wet the paper towels or cotton.
2. Place some wet paper towels or cotton in each jar or cup.
3. Tuck the lime beans into the paper towel along the sides of the jars or cups so you can see them.
4. Place the jars or cups where they will get sunlight every day.

### ***Every Day***

The paper towels or cotton should be kept moist or almost wet. Check your seeds every day to see if you need to add water.

### ***In About a Week***

Observe, or look at, the beans in the jars. Do you notice sprouts growing from the seeds? A plant has begun to grow! The top will grow to be the stem and leaf. The bottom will be the root.

### ***When the Sprouts are About One Inch Long***

Turn one jar over so that the seeds are upside down. Leave the jar in the overturned position. Will the sprouts in that jar grow the wrong way? What do you predict? Write your **hypothesis**, or prediction, in your lab notebook.

### ***The Next Few Days:***

Continue to keep the paper towels or cotton moist. Observe the seeds and their sprouts.

What has happened?

Write down your **observations**, or what you saw, in your notebook. Did you find out if a seed has a top and a bottom? Did you find out if you have to place the seed in the soil a certain way to make it grow the right way? Was your hypothesis correct?

## **EXPERIMENT 2**

### **Question to Answer**

Is sunlight important for plants to be healthy and strong?

### **Materials You Will Need**

4 flower pots (You can use plastic cups or clean, used milk cartons. Ask an adult to cut the tops off the milk cartons.)

Old newspaper pages

2 different kinds of seeds in packets such as pumpkin, green beans, or squash

Soil

Masking tape

A pen, pencil, crayon, or marker

### **Conducting the Experiment**

#### ***Things to Do the First Day***

1. Make labels for your pots using masking tape. Label two pots *Light* and two pots *Dark*.
2. Lay out pages of old newspaper to create your workspace.
3. Working on the newspaper, fill each pot with soil.
4. Read the directions on the back of **one** seed packet. Following the directions, plant **three** seeds in a pot labeled *Light* and three in a pot labeled *Dark*.

5. Read the directions on the **other** seed packet. Plant three seeds in the other pot labeled *Light* and three in the other pot labeled *Dark*.
6. Place the flowerpots marked *Light* in a sunny area like a windowsill.
7. Place the flowerpots marked *Dark* in a dark closet or basement.
8. What do you think will happen to the seeds in each flowerpot under these different conditions? Write your **hypothesis**, or predictions, in your lab notebook.

### ***Things to Do the Following Days***

1. Keep the soil moist in all the pots by watering as often as needed.
2. Observe the pots. Remember that some kinds of seeds take longer to **germinate**, or sprout into seedlings.
3. When the **seedlings**, or young plants, have been growing above the soil for about a week, compare them.
  - Is there a difference between the ones grown in the sunlight and the ones grown in the dark?
  - Is there a difference in height?
  - Do some have more leaves?
  - Do some have sturdier stems?
  - Which ones look healthier?
4. Write in your notebook what you have learned. Did you find out if sunlight is important for plants to be healthy and strong? Was your hypothesis correct?

## EXPERIMENT 3

### **Questions to Answer**

How much water do seeds need to grow best?

## Materials You Will Need

3 clear jars or plastic cups  
15 lima beans (seeds)  
Soil  
Water  
Masking Tape  
Pen, pencil, crayon, or marker

## Conducting the Experiment

1. Using masking tape, label the jars *Jar 1*, *Jar 2*, and *Jar 3*
2. Fill each jar with soil up to about an inch from the top
3. Plant 5 lima beans about one-half inch deep in each jar
4. Put the pots next to each other in a sunny place
5. Now, and for the next two weeks, water your seeds in this way:

<b>Jar 1</b>	<b>Jar 2</b>	<b>Jar 3</b>
Do <b>not</b> water	Keep soil moist but <b>not</b> soaked	Keep the jar filled to the top with water

What do you think will happen to the seeds in each jar under these different conditions?

Write your **hypothesis**, or predictions, in your lab notebook.

After two weeks, observe the jars. What happened to the seeds in each jar? Carefully dig a seed out of each jar. Examine all three seeds. How have they changed? Do any of them have a strange smell?

Write in your notebook what you have learned. Did you find out how much water it is best to use to help seeds grow? What do you think happens to seeds outdoors when there is too little rain or too much rain? Was your hypothesis correct?



## **Any Questions?**

What a great job you did as a **botanist**, a scientist who studies plants! You are well on your way to having enough knowledge about plants to write your handbook on growing plants! However, you may still have some questions about growing plants that you do not know the answers to yet. You can find the answers to your questions by doing library and Internet research, or by creating and conducting your own experiments!

To begin, brainstorm questions you would like to answer about growing plants from seeds. Just let your mind wander, and think of all sorts of questions about seeds and plants. Did the experiments you conducted leave you with any questions? Do your friends and family have questions about growing seeds and plants, too? Write down their questions, and leave room in case you think of more questions later. Here are some questions to help you begin your brainstorming session:

- Does music help seeds grow faster or stronger?
- Do different seeds grow better in different temperatures?
- Will salted sunflower seeds grow into sunflowers?
- Will plants grow better if watered with bottled water instead of tap water?

Don't worry if some of your questions sound silly. When you brainstorm, there is no such thing as a bad question!

## **Finding Information:**

Where can you find information to answer your questions? Here are some ideas:

Your school and public libraries may have books for children about seeds and plants. Look in the card catalog or library database for topics such as *seeds*, *plants*, or *gardening*. If you need help, ask the librarian. Here are a few good books to look for:

**What Is a Plant?** by Bobbie Kalman, Niki Walker. (Crabtree Publishing, 2000).  
ISBN: 0865059594.

*Learn about how different plants grow and survive. This book may not be a challenging read for you, but it contains some helpful facts.*

**Looking at Plants** by David T. Suzuki. (Wiley, John & Sons, 1992).  
ISBN: 0446381551.

*This book provides information about the characteristics and growing needs of different plants. You will also find more fun plant experiments here.*

**Victory Garden Kids' Book** by Marjorie Waters. (Globe Pequot Press, 1994).  
ISBN: 1564403610.

*Learn about buying plants and seeds, using tools, planting, and watering a garden by reading about one group of kids who grew their own .*

The Internet is another resource that may help you answer your questions. Try searching Internet search engines such as [www.yahooligans.com](http://www.yahooligans.com) or [www.ajkids.com](http://www.ajkids.com) to find sites that might have answers to your questions. Here are some sites that may have some of the information you are looking for:

**[Kid's Valley Garden](http://www.raw-connections.com/garden/)**

<http://www.raw-connections.com/garden/>

*Learn how to grow flowers, vegetables, herbs, and other plants at this site. First plan your garden, then plant seeds and seedlings. You'll learn how to take care of plants and show them off to family and friends.*

**[My First Garden](http://www.urbanext.uiuc.edu/firstgarden/)**

<http://www.urbanext.uiuc.edu/firstgarden/>

*This site gives instructions about how to begin your own garden. You will find lots of information here about how plants grow!*

**[Yahooligans Reference: Plants](http://yahooligans.yahoo.com/reference/encyclopedia/entry?id=37693)**

<http://yahooligans.yahoo.com/reference/encyclopedia/entry?id=37693>

*Learn about what makes an organism a plant. This site also includes information about scientific classification.*

**Seed Packets:**

Another place to find information is on the back of seed packets. When you are at a store such as a supermarket or garden store that sells seeds, read the backs of some seed packets. Are the directions for planting and growing different kinds of seeds the same or different? Does this information help answer any of your questions? Write down what you learn in your lab notebook.

**People:**

Talking to people can be a very good way to learn about growing seeds and plants. Do you know any good gardeners? They may have some good tips to pass along to you. You could also talk to a farmer or a worker in a local plant nursery. Be sure to write down what you learn in your notebook.

**Experiments:**

Do you have any questions to which you can't find the answers? Since you now have some experience with scientific research, perhaps you can come up with your own experiments to help answer your questions! Look over the directions to the experiments you have already conducted to help you come up with ideas for how to design your experiments. The following website, [Learning to Experiment](http://collaboratory.nunet.net/benton/activities/scienceresearch.html) (<http://collaboratory.nunet.net/benton/activities/scienceresearch.html>), may also help as you plan your research.

Perhaps you'd like to learn if sunflower seeds that are salted for eating grow as well as regular sunflower seeds. How would you find the answer to this question? Following the

directions on the back of a packet of sunflower seeds intended for planting, you might plant the salted sunflower seeds and the regular sunflower seeds in separate, marked containers. Then, observe and record what happens to each container of seeds to find your answer. If you have questions about how to design a research experiment, ask a teacher, guardian, or friend if they have any suggestions.

## Launching Your Results



### **Showing and Sharing What You Have Learned**

Below you will find two different projects that will help you share what you have learned with others. Using the information you have gathered in your research, you may choose to write a handbook for gardeners or make a presentation about gardening. It is up to you to choose the way you like to show what you have learned!

### **Writing and Illustrating a Gardening Handbook**

#### **Planning Your How-to Handbook**

Now that you are an expert on the subject, you are ready to start writing a handbook for others about how to grow seeds into plants! First, you must decide what you would like to include in your handbook. What have you learned from your research that a person using your handbook will need to know when they are growing seeds into plants? This is the information you should include! Second, think about your audience. Who will be using your handbook? If students younger than you will use it, you must keep in mind what they can understand as you choose your topics and words. If you plan to share the handbook with students your own age or slightly older, you should write with their abilities in mind.

## Text for Your Handbook

Now that you have decided what to include in your handbook and who your audience will be, you can write a rough draft of the text, or the words, of your handbook to get all your ideas down on paper. As you are writing your rough draft, remember to keep in mind the age of your **audience**. When you have finished your rough draft, reread it to make sure the ideas are in a logical order. Try reading it to someone in the age group it is meant for and ask for comments and suggestions. Read over your text several times to be sure it says what you want it to say. Ask a friend to **proofread** your text for you to check for incorrect spelling and grammar. You and your friend may want to use the following **proofreading checklist** to help with the editing process.

### *Proofreading Checklist*

Ask yourself these questions:

- 1. Did I spell all the words correctly?
- 2. Did I indent each paragraph?
- 3. Did I write each sentence as a complete thought?
- 4. Do I have any run-on sentences?
- 5. Did I begin each sentence with a capital letter?
- 6. Did I use capital letters correctly in other places?
- 7. Did I end each sentence with the correct punctuation mark?
- 8. Did I use commas, apostrophes, and other punctuation correctly?

## **Pictures and Illustrations for Your Handbook**

Before writing out a clean, neat final draft of your handbook, decide where you would like to place illustrations and diagrams. Select the pictures you want to use and decide how to display them. You may want to draw your own pictures based on the illustrations in the books or other materials you used. If you like, you can use tracing paper or other thin paper to trace pictures, parts of pictures, or maps. Then you can glue or paste your tracing to a piece of construction paper or other paper. You may decide to leave your pictures in black and white or to color them with markers, paints, or crayons. You may decide to cut out and use photographs from magazines, or print some pictures off the Internet. If you choose to print pictures from the computer or cut pictures out of magazines, you should first check with your teacher, parent, or guardian. Printing pictures uses a lot of ink, and people don't always like having their magazines cut up.

## **Putting Your Handbook Together**

Once you have planned where you would like your text, pictures, and diagrams to go in your handbook, you are ready to create your final draft. You will now have to choose a way to put your guide together. You can use a three-ring binder or a scrapbook or maybe you can think of another way you to create a booklet. A couple of books with great ideas for bookmaking are:

**Cover to Cover** by Shereen LaPlantz (Sterling Publishing: 1995).

ISBN: 0937274879.

*This book has great ideas for making books. Learn basic folding, pasting, and binding techniques as well as more complicated methods for creating particularly unique books.*

**Making Books by Hand** by Mary McCarthy & Philip Manna (Quarry Books: 2000).

ISBN: 1564966755.

*Illustrated step-by-step instructions show book lovers how to make their own journals, scrapbooks, and more.*

You can find some bookmaking ideas on the Internet, as well.

**[Making Books: Kids' Page](http://www.makingbooks.com/kids/)**  
**[www.makingbooks.com/kids/](http://www.makingbooks.com/kids/)**

*The Kids Page was created to get you started making books. There are directions for some simple books in the Bookmaking Projects section. The materials are easy to find and the directions are easy to follow.*

What other ways can you think of to present your handbook? Is there any way you might use the computer? Finally, you need to decide what kind of cover to make for your handbook.

What will the title be? Should there be a picture on the cover?

Now you're ready to share your handbook with other students and beginning gardeners! Display or present your handbook in your classroom or school library. Who else in your community might be interested in using your handbook?

## **Make a Presentation**

### **Planning Your Presentation**

Now that you have done some research on plants, you are in a great position to inform others about the science of gardening. Looking over the notes you took in your lab notebook, decide which information you discovered that you think beginning gardeners ought to know. As you are deciding what to include in your presentation, remember to think about your **audience**. To whom will you make your presentation? If you present to your own class, you will probably include less background information than if you present to a kindergarten class. Keeping this in mind, what information do you think your audience would like to know?

Once you decide which information to include, how will you organize your presentation? It may be best to explain some facts before others so that your audience can best understand the

information. Making an outline will help you organize your presentation. Your outline might look like this:

- I. Introduction: “Over the past few weeks I have conducted experiments with seeds and plants. Today I will explain what I found.”
- II. Research Question 1
  - A. Is sunlight important for seed and plant growth?
  - B. Explain what I found in my experiment
  - C. Explain why
- III. Research Question 2
  - A. Is water important for seed and plant growth?
  - B. Explain what I found in my experiment
  - C. Explain why
- IV. Research Question 3
  - A. Do seeds have a top and a bottom?
  - B. Explain what I found in my experiment
- V. Research Question 4
  - A. Will salted sunflower seeds grow?
  - B. Explain what I found in my experiment
- VI. ~~~~~ etc.
- VII. ~~~~~ etc.

### **Visual Aids for Your Presentation**

The next thing to consider is how you will present your information. You will probably find it helpful to use some visual aids to explain your findings and to make the presentation more interesting for your audience. Will you need pictures or diagrams to explain a certain finding? Can you bring in examples of plants grown under different conditions to illustrate a point? Will you choose to make a poster to explain a concept? Would you enjoy making some PowerPoint slides on your computer? Since this is your presentation, the choices are yours! Just remember that you should consider the materials and technology you have at your disposal before making your decisions. Also, be sure that you make your visual aids large enough so that everyone in the audience can see them.



## **Practicing**

The key to a good presentation is preparation. Once you have completed your presentation, practice it until you know the material very well. You don't have to memorize the presentation, but you should be able to move easily from one point to the next without struggling to remember where you are. You may want to use note cards during your presentation to prompt you if you need them. If so, practice moving through your note cards as you speak so that if you get stuck you will have the right card ready to prompt your memory. If you use PowerPoint slides, they can act similarly to help you remember where you are in your presentation.

After running through the presentation several times, you may want to ask a parent, friend, sister or brother to watch your presentation. When you finish you can ask for useful feedback on your performance. Another option is to practice in front of a mirror so that you can see how your face and gestures look as you speak.

## **Presenting**

When you're finally ready, plan a day for your presentation. Talk with the teacher of the class to whom you are presenting to arrange a date. Be sure to have all of the materials you need at your school on the day of the presentation! Also, be sure to speak loudly enough so that everyone in the room can hear you. Finally, don't forget to have fun! You have worked hard on this project and now is the time to enjoy sharing all that you have learned!

# Treasure Chest of Tools



If you enjoyed becoming a botanist and would like to do more research on the science of plants and seeds, you may enjoy some of the experiments and projects that you can find in books and on the Internet. Here a few books and websites to explore:

**What Is a Plant?** by Bobbie Kalman, Niki Walker. (Crabtree Publishing, 2000). ISBN: 0865059594.

**Looking at Plants** by David T. Suzuki. (Wiley, John & Sons, 1992). ISBN: 0446381551.

**Victory Garden Kids' Book** by Marjorie Waters. (Globe Pequot Press, 1994). ISBN: 1564403610.

**Cover to Cover** by Shereen LaPlantz (Sterling Publishing: 1995). ISBN: 0937274879.

**Making Books by Hand** by Mary McCarthy & Philip Manna (Quarry Books: 2000). ISBN: 1564966755.

**Science with Plants** by Mike Unwin and Helen Edom. (Usborn Books, 1993). ISBN: 0746009763.

**39 Easy Plant Biology Experiments** by Robert W. Wood. (Tab Books, 1991). ISBN: 0830619356.



## Internet

### **Kid's Valley Garden**

<http://www.raw-connections.com/garden/>

### **My First Garden**

<http://www.urbanext.uiuc.edu/firstgarden/>

**Yahooligans Reference: Plants**

<http://yahooligans.yahoo.com/reference/encyclopedia/entry?id=37693>

**Making Books: Kids' Page**

[www.makingbooks.com/kids/](http://www.makingbooks.com/kids/)

**The Great Plant Escape**

<http://www.urbanext.uiuc.edu/gpe/>

**Science Rocks: Sock Seeds**

<http://pbskids.org/zoom/activities/sci/sockseeds.html>



## SEM Xplorations

### **Put Your Best Hoof Forward: Give a Presentation about a Favorite Animal**

Have you ever noticed how excited people become when they talk about a favorite animal? Their eyes sparkle, they begin to speak more quickly, and they are eager to share all that they know about the topic. You probably know someone who loves to tell dog stories, or chat about bird watching or explain tropical fish. People just love animals!

What about you? Do you have a favorite animal? Do you dream of dogs or wonder about whales? Are you partial to parakeets or enraptured by emus? Do you like lions or worship wildebeests? Would you like to share your passion with others? If so, you can do a little research and then give a presentation about an animal or several animals that interest you.



## Charting Your Course

To create your presentation, all you have to do is follow these simple steps:

### **Steps for a Great Presentation:**

- 1. Choose a topic.**

This part should be easy. Do a little research to learn about some animals, and then pick an animal or several animals that you find fascinating.

2. **Think of some research questions**

What interests you about your animal or animals? What things would you like to know?

Make some questions that will help you find the information that will most interest you.

3. **Track down information.**

Visit the library, a zoo, or a vet. Talk to people and do some reading. With all the resources available to researchers today, finding information will be a snap!

4. **Organize the information.**

Sort through the data you have collected and start grouping ideas and facts that are related. As you analyze (make sense of) your information, you will start to develop lots of ideas for your presentation.

5. **Create your presentation.**

Use your imagination to create a presentation that is both informative and interesting.

Include thought provoking stories, visual aids and ideas, and your presentation is sure to be a success!

6. **Give your presentation**

All of the hard work is done; now you just have to enjoy sharing what you know about your animal or species. Have fun!

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## **Choosing a Topic**

Time to put on your thinking cap! What type of animal or animals would you like to discuss in your presentation? Would you like to share information about an unusual animal found only in the wild or in zoos? Or maybe you would enjoy speaking about a sea species, such as fish, whales or octopi. You could also pick a bird or bird family—there are tons of

interesting, beautiful and weird birds out there! Maybe you like bugs and would relish (greatly enjoy) telling your audience about something creepy and crawly. Of course, you can never go wrong talking about a domestic animal such as cats, dogs or cows. People enjoy presentations that give them new information about familiar topics. Their personal experience with domestic animals will make them interested in what you have to say!



Unless you already know exactly what type of animal you want to study, why don't you do a little exploring and then make a list of animals that you might like to discuss in your presentation? The websites below provide information about all types of animals. Some of the sites are more general, while some focus on specific animals or animal families. Either way, you have plenty of critters from which to choose. And don't forget: If you have an animal in mind and you don't see a website below that will help you learn about it, you may want to use a kids' search engine such as [Yahooligans!](http://www.yahooligans.com) ([www.yahooligans.com](http://www.yahooligans.com)) or [Ask Jeeves for Kids](http://www.askjeeveskids.com) ([www.askjeeveskids.com](http://www.askjeeveskids.com)). Search engines are websites that help people find information online. Just type the name of your animal or species into the "search" box on the site, and you should receive a list of kid-friendly sites about your animal.

- ☺ [Animal Planet](http://animal.discovery.com/) (<http://animal.discovery.com/>)  
*This is the website of a well-known TV show by the same name. Here you will find information about all kinds of animals—from pets to truly exotic (unusual and little known) species. The [Animals A to Zoo](http://animal.discovery.com/guides/atoz/atoz.html) (<http://animal.discovery.com/guides/atoz/atoz.html>) section of the site will allow you to browse through an alphabetical list of animal families. The [news page](http://animal.discovery.com/news/news.html) (<http://animal.discovery.com/news/news.html>) provides current stories about animals. You may want to read some of the articles to get interesting facts about a variety of animals. If you have a speedy Internet connection, you can also watch some animals go about their daily business, thanks to the site's live [critter cam page](http://animal.discovery.com/cams/cams.html) (<http://animal.discovery.com/cams/cams.html>). Spend a little time exploring this website.*

Why not check out some animals that are unfamiliar to you—or even some that you think you might not like? Something you read may surprise and fascinate you, and then you will have a new animal to love!

- ☺ [The National Zoo](http://nationalzoo.si.edu/Animals/default.cfm) (<http://nationalzoo.si.edu/Animals/default.cfm>)  
*This website provides information about the thousands of animals at the National Zoo in Washington, DC. You can take a virtual world tour of animals all over the planet; watch zoo animals on the live animal cameras; and learn about conservation of endangered species such as the Giant Panda. There are lots of fun activities and facts here!*
  
- ☺ [ASPCA Animal Land](http://www.animaland.org/) (<http://www.animaland.org/>)  
*This website has lots of cool information. Check out the [animal encyclopedia](http://www.animaland.org/framesets/abcs_frameset.asp) ([http://www.animaland.org/framesets/abcs\\_frameset.asp](http://www.animaland.org/framesets/abcs_frameset.asp)), which provides details about at least one animal for every letter of the alphabet. You should also explore the [Ask Azula](http://www.animaland.org/framesets/askazula_frameset.asp) portion of the website ([http://www.animaland.org/framesets/askazula\\_frameset.asp](http://www.animaland.org/framesets/askazula_frameset.asp)). Here you will find the answers to lots of unusual questions about a wide variety of animals. You can probably find some interesting facts here! There is one thing to remember, though, as you search the ASPCA website: The ASPCA (American Society for the Prevention of Cruelty to Animals) was founded to protect animals, so the information that you find may be shaped by the Society's purpose. This is fine; it's just a good idea whenever you're doing research to ask yourself whether the information you are finding in a book or on a website might be biased. This means it may only tell one side of an argument. If so, you can check another source to get a different point of view.*
  
- ☺ [eNature.com](http://www.enature.com/) (<http://www.enature.com/>)  
*The most useful part of this website for you will probably be the online [field guides](http://www.enature.com/guides/select_group.asp) ([http://www.enature.com/guides/select\\_group.asp](http://www.enature.com/guides/select_group.asp)) for amphibians, mammals, birds, insects and more. Use these to get some broad information about specific animals.*
  
- ☺ [Equine World](http://www.equine-world.co.uk/about_horses/) ([http://www.equine-world.co.uk/about\\_horses/](http://www.equine-world.co.uk/about_horses/))  
*Are you one of those people who just love horses? If so, you can learn about their history with man, head and leg markings, and horse intelligence on this interesting website. Many people are horse lovers—including riders, farmers and horse racers. If you choose to speak about horses, you will probably have lots of interested audience members!*
  
- ☺ [Bats4Kids](http://members.aol.com/bats4kids/) (<http://members.aol.com/bats4kids/>)  
*Do think bats are creepy? You may change your mind after checking out this website. Find out how bats help people, what they eat, how they communicate and navigate, and more. You can also read about some common bat-myths here. Wouldn't it be fun to create a presentation that would change people's minds about these endangered animals?*

☺ [In Search of the Giant Squid](http://seawifs.gsfc.nasa.gov/squid.html) (<http://seawifs.gsfc.nasa.gov/squid.html>)  
*This is a great Smithsonian Museum website about a very cool and mysterious animal! Did you know that squids up to sixty feet long live in certain deep, deep areas of the ocean? Did you know that people once thought giant squids were mermaids? Did you know that no scientist has ever been able to study live giant squids because we don't really know where to find them? How does something so giant hide? Wouldn't you like to share this type of information with a fascinated audience?*

☺ [Discovering Dinosaurs](http://search.eb.com/dinosaurs/dinosaurs/study/index.htm) (<http://search.eb.com/dinosaurs/dinosaurs/study/index.htm>)  
*The fact that dinosaurs have been extinct for millions of years is no reason to overlook them—after all, they're giant, they're scary and they're cool to look at! Any audience would love a presentation about these charismatic (fascinating or interesting) creatures! If this sounds interesting, you can find out about the history of dinosaur research, modern descendents of dinosaurs, and more. You can also find information about what it might be like to raise a growing dinosaur. This is a great website!*

☺ [Y.E.S. Minibeast World](http://members.aol.com/YESedu/mainmenu.html) (<http://members.aol.com/YESedu/mainmenu.html>).  
*Have you ever heard of entomology? Entomology is the scientific study of bugs! On this website you will find information about all different types of bugs, resources for young entomologists, and careers in entomology.*

☺ [Crocodiles](http://www.pbs.org/wgbh/nova/crocs/) (<http://www.pbs.org/wgbh/nova/crocs/>)  
*Here you will find information about the twenty-three existing species of crocodiles, crocodile body parts, how long crocodiles have existed, and how they have survived so long without becoming extinct. You will also find an interview with a crocodile researcher.*

☺ [Extraordinary Dogs](http://www.pbs.org/wnet/nature/dogs/index.html) (<http://www.pbs.org/wnet/nature/dogs/index.html>)  
*Do you think you know most of what there is to know about dogs? Do you think dogs would be a boring topic for a presentation? Think again! On this website you can learn about dogs who have done amazing things; dogs trained to rescue people; and what you need to know before getting a dog. Did you know dogs were so interesting?*

So, now you have explored some cool animals. Why don't you make a list of the ones that interests you the most? You can list single species—for example, polar bears—or groups of species, such as arctic animals. Try to come up with at least five animal topics that you might enjoy learning more about. Then you should pick the one you find most fascinating. If you're interested and excited about your topic, your audience will be excited and interested too!



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## Thinking of Research Questions

At this point in the project, you should know a little about the animal or animals you have selected—either through personal experience with this animal or through the Internet research you did to make your choice. What is it about your animal topic that interests you? What is the coolest thing about your animal or animals? What do you still want to know about your topic? Start writing questions that you would like to answer for your own personal curiosity. The best research questions are those that most interest you. Here are a few examples of the type of question you might like to ask:

### Possible Research Questions

- How do the animals on your list communicate with members of their own species? Is there anything unusual about this form of communication?
- What do you think the study of animal communication can show about animal behavior, communication between people, or communication between humans and animals?
- Can you find your animal in a zoo? If so, can you find out whether a zoo environment is good or bad for this animal? Are there good things and bad things about keeping this type of animal in a zoo?
- When was the first animal of your species taken into captivity in a zoo? How did it happen?
- Zoo employees have found that some animals don't like to have offspring in captivity. Is your animal one of these species? What are zoo employees and scientists doing to encourage this species to breed in zoos?
- Is your animal endangered? If so, what events led to this situation? Did people move into their habitats? Is pollution preventing this animal from being healthy or having young? Is there something else that has led to their disappearance over time?
- What are people doing to help your animal if it is endangered? Do conservation projects exist for your animal?
- If people are part of the reason that your animal is endangered, is there another side to the story? For example, some big fishing companies are taking too many fish from the sea. So the government has made rules to restrict fishing. But now some local fishermen and women

may be having trouble making enough money to support their families. Is this fair? Is protecting your animal more complicated than people might think?

- Is your animal mysterious or rarely seen? What kind of information exists about your animal? How do scientists find and study this species?
- Is your animal domesticated? (Domesticated animals have been bred to live closely with humans and to serve us in some way. Examples include horses, pigs, dogs, and many more.) If it is domesticated, what is its history with man? How was it domesticated? Is it a companion animal or an animal we use for labor or food?

These are just a few questions that you may want answer in your presentation. You will probably have questions of your own about your animal, and that's fantastic! Remember, you should research the questions that most interest you.

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## **Tracking Down Information**

Once you have selected your topic, it is time to become more organized about your research. There are two ways to do this. You can go to a large library, and you can also search for information on the Internet. Try both options, as they may give you different types of information.

### Searching the Internet

For Internet searches you can use kid-friendly search engines, such as [Ask Jeeves for Kids](http://www.ajkids.com) ([www.ajkids.com](http://www.ajkids.com)) or [Yahooligans!](http://www.yahooligans.com) ([www.yahooligans.com](http://www.yahooligans.com)) to find information specifically geared toward kids. You can also try a regular search engine such as [Google](http://www.google.com) ([www.google.com](http://www.google.com)), which may turn up more sources for you than a kids' search engine. You can type the words "kids" and "animals" into the search box to find more kid resources, or you can just type "animal" and "websites," or you can type the name of the species you are

researching. Try different words and different combinations of words to see what sources you get. You may also want to ask your school librarian or resource teacher to help you find sites. Make sure to pay attention to how he or she finds the websites so that you will know how to search on your own in the future.

### Using Libraries

Even if you find lots of interesting information online, you should take the time to visit a library. For this project, your local library may be useful, but you may also want to visit a local college or university library if there is one nearby. These libraries have wonderful resources to help you find interesting books and articles. Some of the resources may be a little different from what you're used to at your school or local library. For example, most college and universities have computers to help you locate information. Information may be organized into different databases, which you can search by subject, and you may also be able to electronically search the whole library catalogue. Some articles may be located in big books of articles called "journals," while other articles will be stored in electronic journals.

Does any of this sound confusing? If so, don't worry! Even adults are sometimes confused by research libraries! This is why librarians at college or university libraries have lots of training to help you locate what you need. For this project, you will probably want to ask a reference librarian to show you how to search for information. If you can, take notes on what he or she does as you search together. That way, you will feel more familiar with the process next time you come to the library.

If you can't visit a college or university library, you may be able to ask the librarian at your school or local library to request articles for you through the interlibrary loan program.

This program enables libraries to request information that they do not have from another library. This option will help you to get what you need even if your library doesn't have many books or articles that are useful to you.

Regardless of which type of library you visit, you will soon begin to locate resources in the library database or card catalogue. At this stage, the title of an article or book will be your only clue to what it is about. If you think the title of a book or article sounds useful, write down the following information:

**For Books:**

- ✓ Title
- ✓ Author
- ✓ Publication date
- ✓ Call number

**For Articles:**

- ✓ Title
- ✓ Name of the periodical or journal the article is in
- ✓ Month and year the article was published
- ✓ Volume number of the journal
- ✓ Page number where you can find the article

All of the information you need to find the book or article should be in the card catalogue or database—although some of it may be abbreviated. Ask the reference librarian if you need help understanding anything.

As you search, keep in mind that it's a good idea to copy down more references than you think will be needed. Some articles or books with titles that sound very useful may turn out to be

unrelated to the topic you are researching, while others might be unavailable. If you have a long list of resources, you are sure to find enough information for a great presentation.

Researching is a big job, so if you're having trouble finding what you need, remember—don't give up or feel discouraged. People spend years learning how to conduct research! If you get stuck, just ask a librarian or another adult for help. The books below may also be useful. They were written specifically to help kids do research.

■ **Internet Power Research Using the Big 6 Approach**, by Art Wolinsky (Enslow Publishers, 2002).

ISBN: 0766020940.

This book provides information about how to use the Internet to do research. It offers suggestions for organizing ideas and information, using the library, deciding which information to use, working with different search engines, taking notes, creating citations, judging information on the Internet, and more.

■ **How to Write a Great Research Paper**, by Beverly Chin Wiley (August 6, 2004)

ISBN: 0471431540.

In this book you will find information about finding sources, note-taking, making outlines, and giving an oral presentation. Lots of diagrams and step-by-step instructions will help you to understand and use this information.



### **Taking Notes and Organizing Information**

You now have some wonderful books and articles with lots of useful information—but what will you do with them? You will never be able to use all of the information you have found, so you will have to take notes on what is most interesting. Using index cards for your notes will allow you to organize them later into categories. Whenever you find a particularly

interesting piece of information, write it down on a note card. Also record who said it, and the article or book where you got the information.

Once you have taken notes from all of your sources, you need to organize the note cards in some way that makes sense to you. To help with this task, you may want to categorize your note cards. Then you can group all the note cards with the same label together. For example, if you are studying an endangered animal, one option would be to organize the information chronologically (in order of time). Just write “Past,” “Present,” or “Future” on each note card, depending on what type of information you have written there. Then you can arrange your presentation by telling your audience what happened in the past to endanger the animal, what is happening to the animal and its habitats in the present, and what scientists or conservationists are doing to make sure that the animal isn’t endangered in the future.

Of course, you may think of a better way to categorize your note cards. If you are studying an animal that few people know about, you may want to give basic information about the life of the animal. In this case, you might label your note cards “Habitat,” “Birth,” “Feeding,” “Mating,” “Parenting,” and “Communication.” If you are giving a presentation with a theme, such as animal communication, or animals of Australia, you may want to organize the information by animal. The important thing is to order the information in a logical way that will be interesting to both you and your audience.

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## Preparing Your Presentation

When you have completed your research and organized your information, it's time to decide what to say to your audience. You probably will have too much information to fit into one lecture, which means you will have to decide what is most important. Use your notes to write an outline of what you're going to say. Then you will have some choices to make. Some speakers feel more comfortable if they write out what they're going to say. This doesn't mean that you will read your presentation word for word, but writing it out may help you to organize your material more effectively. Other people prefer to write note cards to remind them what to say next in the presentation. This is fine too, but make sure that you practice your presentation so that you feel comfortable speaking with just the note cards as prompts. A third option is to create slides with a computer program such as Microsoft PowerPoint. Your PowerPoint slides will take the place of note cards in keeping you on track during your presentation. If this idea sounds interesting and you have access to the technology, these websites may be useful in helping you to prepare a PowerPoint presentation:

- [Giving an oral report](http://www.powertolearn.com/articles/computers_and_homework/creating_and_giving_an_oral_report_part_1_(5-8).shtml)  
([http://www.powertolearn.com/articles/computers\\_and\\_homework/creating\\_and\\_giving\\_an\\_oral\\_report\\_part\\_1\\_\(5-8\).shtml](http://www.powertolearn.com/articles/computers_and_homework/creating_and_giving_an_oral_report_part_1_(5-8).shtml))  
*This cool website has lots of tips for using computers to create and deliver your presentation.*
- [PowerPoint in the classroom](http://www.actden.com/pp/) (<http://www.actden.com/pp/>)  
*Here you will find kid-friendly advice for creating and editing PowerPoint slides, adding pictures to your slides, using sound effects with your slides and more.*

Regardless of which method you use, there are some things you can do to make your presentation interesting and effective. These are points to keep in mind as you prepare your presentation:

- **Know your audience.** If you are speaking to your classmates, include material that is right for your grade level. If you are speaking to a younger audience, you may want to use simpler language and ideas. If you are speaking to a science club or to a group of pet owners, your emphasis will be very different.
- **Make your opening interesting.** State your topic or idea at once and in a way that will capture the attention of your audience members. You might begin, as many good speakers do, with a humorous joke or story. If you're a more serious person, you might prefer to challenge your audience by stating an unusual fact. You can also ask a question of your audience that you intend to answer in your presentation.
- **Use visual aids.** Make sure your visual aids—whether pictures, graphs, slides, charts, maps or writing on the chalkboard—are large enough to be seen easily. Use one or more kinds of visual aids throughout your presentation to emphasize your ideas and make your presentation more interesting. Your presentation will appear particularly professional if you can use an overhead projector or PowerPoint slides. You can buy transparent plastic report covers in various colors which can be used with an overhead projector. With felt-tipped markers or other special markers you can draw pictures, charts, graphs or headlines on the sheets to call attention to parts of your speech. If you want to use PowerPoint or another computer program, you not only have to have the software installed on a school or personal computer, but you also need a computer to use during the presentation. Your teacher, a resource teacher or a computer teacher may be able to help you find what you need. But remember, good overhead slides and other visual aids are often just as effective as more “high tech” options.
- **Be specific.** Give examples whenever you state an idea or a conclusion. Use quotes word for word. It's much more interesting for your audience to hear something that actually happened or was said than to hear a bunch of general statements.
- **Sum up your lecture.** End your presentation by giving a summary of your main points, as well as any conclusions you have reached. Then offer to answer any questions your audience might have.



■ **Keep your presentation short.** You will hold the attention of your audience better if you keep your presentation fairly brief. The age of your audience may also influence the length of your lecture. Young children obviously have shorter attention spans than older children or adults.

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### **Practicing Your Presentation**

When your presentation is ready, practice it several times. It's best not to memorize it, though you may want to memorize an outline. If you learn your lecture word-for-word, any distraction could throw you off.

Practice in front of a mirror to observe your gestures and facial expressions. Time yourself to make sure your lecture is just the right length. Be sure, also, that you are comfortable with any technology that you plan to use in your presentation, such as an overhead projector or a computer. You should be able to use your technology without difficulty by the time you give your presentation. You may want to enlist a friend or teacher to help you learn.

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### **Giving Your Presentation**

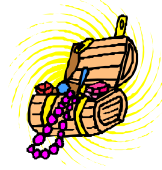
If you are giving your presentation at school, arrange with your teacher or principal for a convenient time and place. If you will be presenting your lecture to a group outside of school, be sure that you understand the arrangements. Arrive on time and be prepared. The following checklist will help you with your final preparations:

- ☑ Check your appearance before giving your lecture; be sure to be neat and well-groomed.
- ☑ Try to develop eye contact with your audience; you can look directly at a friendly face in your audience and speak as if you were talking to that person alone.
- ☑ Be sure to speak loudly enough to be heard at the back of the room.

- ☑ Remember to speak at a moderate pace, not too fast, and not too slow. If you are a little nervous, you may find that your speech is speeding up. That’s okay—just be aware and slow down when you notice this happening.
- ☑ Speak clearly, being sure to sound final consonants in your words.

Keep these points in mind as you practice and deliver your presentation. Try to relax and enjoy the experience. If you are really interested in your topic and if you appear knowledgeable and excited, you will find it much easier to convey your enthusiasm to your audience.

## Treasure Chest of Tools



Would you like some more public speaking tips? This website offers additional suggestions:

- ❖ **Public Speaking** (<http://www.freethechildren.org/peace/resources/speaking.html#outline>)  
*This website is designed to help kids fighting for important causes to improve their public speaking skills. There are lots of good tips here for creating and giving your presentation. Learn about making eye contact, telling stories and speaking with passion on this interesting and informative site.*

There are books at your local library that can help you become an effective speaker.

Books on Giving Speeches:

- **Everything You Need to Know About Public Speaking**, by Rachel Blumstein (Rosen Publishing Group, 2000).  
ISBN: 0823930874.  
Many students are uncomfortable with public speaking, but most have to do it at some point for school. This book examines how you can overcome any discomfort with public speaking and how to become an effective speaker. Tips include how to create a presentation, how to project your voice to your audience, and more.

- **Public Speaking: A Student Guide to Writing and Delivering a Great Speech**, by Katherine Pebley O'Neal (Dandy Lion Pubns, 2002)  
ISBN: 1883055520.  
Here you will find tips for organizing your presentation, speaking to kids and to teachers, using visual aids, creating a great opening for your presentation, and more.

Congratulations! If you have created and delivered a presentation, you have accomplished something that many people find difficult and even intimidating. Now you know that communicating your ideas to an audience can be exciting and interesting. Will you give another presentation soon?

If you enjoyed this project, you might be interested in this camp:



**Public Speaking Camp** (<http://www.educationunlimited.com/pubspeak.html>)

*Offered at Stanford University, UC Berkley and UC Los Angeles, this cool camp for grades 4-12 will help you improve your debating and persuasive speaking skills. Not sure what debating is? It's the art of winning an argument. A good skill to have! Not sure about persuasive speaking? This is the skill of convincing others that you're right! This camp focuses on the excitement of learning how to communicate your ideas to an audience. Note: The camp at Stanford is the only one of the three that allows fourth-grade students. The other two are for grades fifth and up. Also, this camp is a little expensive (about \$1,200 for a week) but there is financial aid for some people who need it.*



## SEM Xplorations

### A Wrinkle in Time: Create a Time Capsule

Have you ever wondered how we know about events that happened and people who lived hundreds of years ago? How is it, exactly, that we know about people who lived in colonial America and what they ate, wore, and thought? How do we know about animals and plants that no longer exist but once lived in certain regions hundreds of years ago? By studying **artifacts**, human-made objects of historical interest, and **ecofacts**, natural objects, such as seeds or animal bones, archaeologists and historians are able to piece together what life was like in past times. Once this job is done, **curators** preserve these artifacts and ecofacts for future generations.

Historians, archaeologists, and curators are not the only people who are interested in conserving information about cultures and ecosystems. Social scientists who study the future, called **futurists** or **futurologists**, are also interested in conserving this information, but they conserve artifacts in a different way. Instead of preserving items from the past, many futurists collect items from present day life so that they can be preserved and studied by other scientists at some point in the distant future. The work futurists do will make the work of future historians, archaeologists, and curators easier! In some cases, the artifacts and ecofacts that futurists collect are sealed in **time capsules** that are designed to be sealed for at least a thousand years! The **Crypt of Civilization**, a time capsule located at Oglethorpe University in Georgia, will not be opened until the year 8113 A.D.! That's more than six-thousand years from now! If you're

interested in learning more about this time capsule, go to [www.oglethorpe.edu/about\\_us/cript\\_of\\_civilization/](http://www.oglethorpe.edu/about_us/cript_of_civilization/).

It will certainly be exciting when the Crypt of Civilization is opened. However, time capsules that were sealed only 10, 25, and 50 years ago are exciting to open, as well! Imagine how interesting it would be for elementary or middle school students in the year 2100 A.D. to find out what your life was like in the beginning of the twenty-first century! Perhaps you would like to make your own time capsule. All you need is a special notebook to use as a Time Travel Log, and your curiosity. Read on to discover how to preserve the present for children of the future!



### Take a Trip Through Time

#### Interview:

Advances in technology, cultural changes, and every day happenings can dramatically change the way people experience life from year to year. As an experiment, ask a parent, grandparent, teacher, or adult guardian how he or she thinks life has changed since he or she was a child. Maybe you have some specific questions about what kids wore or did for fun at this time. You will probably be amazed at how much life can change in a short period of time! In your **time travel log**, write down what you think are the most important and interesting things that have changed since your interviewee was a child. If you would like, ask a few more people how they think life has changed in their lifetimes. Who knows what interesting information they will share?

## **Time Travel:**

Imagine that when you get home from school today, you walk into your bedroom and find that somebody has left a time machine there for you to use! Immediately, you hop into your time machine and travel to a date thirty, forty, or fifty years ago. Take out your time travel log again and record the things that you think have changed about life in America since that time. To help with your exploration, you may want to visit the following website and enter the date to which you have chosen to travel:

### **DMarie Time Capsule**

**<http://dmarie.com/timecap>**

*Enter a date in history from 1800 to 2002 to get an idea of what was going on in American culture on that date in time.*

After exploring a date in the past, imagine that you hop back into your time machine and travel to a year thirty, forty, or fifty years from now. What a change! In your time travel log, record how you think life will be different in this future time from how it is today.

## **Time Travel Reflection**

Look over the notes you took in your time travel log. What do you think are the most interesting discoveries you made in your interview(s) and in your imaginary time travel into the past? Now look at your time travel log entry about your trip to the future. If you were a person living in this future year, what do you think you would like to know about life in the beginning of the twenty-first century?



## **Planning Your Time Capsule**

## **Retrieval Date**

The first step in creating a time capsule is deciding when you would like somebody in the future to open it. This date is called the **retrieval date**. Although it is tempting to create a time capsule that will not be opened for a hundred years or more, when deciding on your time capsule's retrieval date, remember that it is more likely that someone will open the time capsule if the date is not too far into the future. If you set your time capsule's retrieval date between twenty-five and fifty years from now, you may be able to witness its opening when you are older!

### **Brainstorming for Your Time Capsule**

Now that you are an experienced time traveler, you probably have many ideas about what would be best to include in your time capsule. Think about the date you have set as your retrieval date. How do you think life will have changed by this date? Keeping these possible changes in mind, think about what would be interesting for the person who opens your time capsule in the future to find. Remember, when creating a time capsule, it is best to try to include items that create a complete picture of life at the point the time capsule was created. In your time travel log, write down as many items as you can think of that you might want to include in your time capsule. At this point, do not worry about how practical the items are. Right now you are brainstorming items that you think best show what it is like to live right now. There are no bad or silly ideas when you brainstorm! Here are some examples to get your ideas flowing for your time capsule:

- A newspaper clipping about an important recent event
- Some items that represent the most recent technology
- Recent campaign literature
- Top music hits from this year
- A best-selling book from this year
- Popular clothing

Remember, you are an expert on your time period because you live in it! What ideas can you come up with that will help future students learn what life was like in the year you are preserving? Look around your house, your school and your town. Do you notice anything that you think will be different by the time your time capsule is opened? How might you preserve the memory of things that will not exist in the future?

Perhaps you would like to look at what other people have chosen to include in their time capsules to help you come up with ideas for your own capsule. Try doing an Internet search using search engines such as [www.vahooligans.com](http://www.vahooligans.com) or [www.ajkids.com](http://www.ajkids.com). A couple of good sites to explore are:

**Capturing Time: The New York Times Capsule**

**<http://www.amnh.org/exhibitions/timescapsule/>**

*Look at the items The New York Times chose to include in their millennium time capsule to represent life in the year 2000.*

**The Crypt of Civilization**

**[http://www.oglethorpe.edu/about\\_us/crypt\\_of\\_civilization/inventory.asp](http://www.oglethorpe.edu/about_us/crypt_of_civilization/inventory.asp)**

*Although this time capsule is much larger than the one you will make, its inventory may help you think of ideas for your own capsule!*

You may choose to research a few books about time capsules, as well. Try looking in your school or public library's card catalog or computer database under the subject "time capsule."

Here are a couple books to look for:

**We Were Here: A Short History of Time Capsules** by Patricia Seibert. (Millbrook Press, 2002.)

ISBN: 0761304231.

*Although they were never intended to be opened by living humans, having preserved a past era, the Egyptian pyramids have served as some of the world's earliest "time capsules." Explore what these and what some of the world's other time capsules have told us about the past!*



**Create Your Own Millennium Time Capsule** by Tina Forrester & Sheryl Shapiro  
(Annick Press, 1999).  
ISBN: 1550376128.  
*Get ideas for how to make your own time capsule.*

Do you have lots of good ideas yet? You may choose to ask a friend or a parent to help you with your brainstorming, as well.

### **Choose a Capsule!**

Now that you have many wonderful ideas for what to include in your time capsule, it is a good time to think about what type of container would make a good time capsule. To keep your items in the best possible condition, your container should be a cool, dark and dry. When choosing your container, keep in mind that although it is popular to choose to bury your time capsule, expert futurists do not recommend this choice because most buried time capsules are lost or damaged. It is best to store your time capsule indoors. Keeping this fact in mind, what type of container do you think would be the safest place for your time capsule contents to stay until the container is opened?

### **Location, Location, Location!**

Where will your time capsule be stored? Remember, burying time capsules may cause them to be lost and may also damage the contents. Finding a safe indoor location is best. Talk to your teacher or principal about the possibility of storing your capsule somewhere in the school. Discuss the reason why you are making a time capsule with your principal or teacher, the size of the capsule container, and inform him or her that you would like to have future students of the school open the capsule. He or she might have some great ideas about where to keep the capsule in the school. Perhaps a trophy case in a hallway would be a good place, or somewhere in the

principal's office. When your capsule is sealed and stored, you will also want to mark it with a sign indicating the day it was sealed and the day it is to be opened. These are important things to remember when considering where you might store your time capsule.

### **Packaging Your Time Capsule Items**

Now that you know what your time capsule will look like and where it will be stored, it is time to think about how to package your items. For instance, you couldn't include a whole hybrid car in your box, but a toy hybrid car would fit! You couldn't include the newest version of a computer, but you could include an advertisement for it! A photograph could represent an important political figure. Try to include as many three-dimensional objects as possible to make your time capsule more interesting. Choosing how to represent the different items you want to include in your capsule will require some brainstorming as well. Be creative!

Once you have decided what you will include in your time capsule, make a list of the items. Ask a friend or family member to look over the list to see if he or she has any suggestions for other items to include that would make the time capsule an even more complete picture of your time period. When you have made the final decisions about what will be included in your capsule, make a final draft of your time capsule contents list. You will probably want to keep this as a record of all of your hard work!



### **Sharing and Sealing Your Time Capsule**

Once you have gathered all of the items you will include in your time capsule, it is time to share and seal your time capsule! Since you have put so much work into this capsule, and

sealing a time capsule is a very exciting event, you will probably want to share the “sealing ceremony” with members of your class, school, or community. Talk to your teacher about presenting your capsule to your class or to the school. Perhaps you would like to notify your local newspaper of the sealing ceremony. Explain to your audience why you have chosen to include each of the items in your capsule and what you hope the students who open the capsule in the future will learn. After you have shared your time capsule, it is time to seal it and store it in the location you have already arranged.

### **Register Your Time Capsule**

Because so many time capsules are often forgotten or lost, the International Time Capsule Society (ITCS) wants to know about your time capsule! If you would like, you can register your time capsule with ITCS by going to:

[http://www.oglethorpe.edu/about\\_us/crypt\\_of\\_civilization/time\\_capsule\\_questionnaire.asp](http://www.oglethorpe.edu/about_us/crypt_of_civilization/time_capsule_questionnaire.asp)

You may need to ask a parent or a teacher to help you fill out this form. Once you have registered your time capsule, it will be permanently in the memory of the ITCS database!

Congratulations on becoming a futurist! You have preserved a period in time for future students. David Macaulay’s *Motel of the Mysteries* is a story of how people in the future might misinterpret the contents of a time capsule. Since you have already brainstormed what you think life will be like when your time capsule is opened, perhaps you would like to write a similar story about what the students who find your time capsule might deduce from what you included in the capsule. Will they make accurate deductions about what life was like in the beginning of the twenty-first century, or will they make some mistakes? Be creative, and have fun!

# Treasure Chest of Tools



**We Were Here: A Short History of Time Capsules** by Patricia Seibert (Millbrook Press, 2002). ISBN: 0761304231.

**Create Your Own Millennium Time Capsule** by Tina Forrester & Sheryl Shapiro (Annick Press, 1999). ISBN: 1550376128.

**Motel of the Mysteries** by David Macaulay (Houghton Mifflin/Warner Lorraine Books, 1979). ISBN: 0395284252.

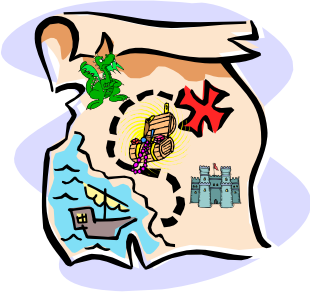


## Internet

**DMarie Time Capsule**  
<http://dmarie.com/timecap>

**Capturing Time: The New York Times Capsule**  
[www.amnh.org/exhibitions/timecapsule/contents.html](http://www.amnh.org/exhibitions/timecapsule/contents.html)

**The Crypt of Civilization**  
[http://www.oglethorpe.edu/about\\_us/crypt\\_of\\_civilization/inventory.asp](http://www.oglethorpe.edu/about_us/crypt_of_civilization/inventory.asp)



## SEM Xplorations

### You're a Poet and You Know It!

#### Learn to Write Poems

Have you ever thought about all of the ways we use words? When we ask questions, we use words to get information. When we tell stories about things that have happened to us, we use words to share our lives with people. When parents tell these stories to their children, who later tell these stories to *their* children, we are using words to create history. But there is another way to use words. You can make “pictures” of things you see, think or feel by choosing words that express your ideas and also sound just right together. When you use words for their meaning and sound, you are creating “poetry.”

Does this idea interest you? If so, you can write some poetry. All you need is a special notebook to write your poems in. If you like, you can decorate your notebook to make it the perfect poetry notebook for you. Once you're finished, find a pen, and you will be ready to get started!



Just as there are all kinds of people, there are all kinds of poems. For example, did you know that rap songs are a kind of poetry? Reading some poems may help you to figure out what

types of poetry you might like to write. You can read some silly poems by clicking on the links below.

**[Blow Your Nose!](http://www.gigglepoetry.com/poemssilly/blowyour.html)** (<http://www.gigglepoetry.com/poemssilly/blowyour.html>), by Bruce Lansky.

*This short poem is a new version of the nursery rhyme “Little Boy Blue.”*

**[Sick](http://www.poets.org/viewmedia.php/prmMID/16480)** (<http://www.poets.org/viewmedia.php/prmMID/16480>), by Shel Silverstein.

*This poem describes a terrible (and unbelievable) illness and an unlikely recovery.*

If you liked these poems, you might want to visit [Giggle Poetry](http://www.gigglepoetry.com) ([www.gigglepoetry.com](http://www.gigglepoetry.com)), a website with tons of silly poems about school, families, and more.

Here are some poems that are a little more serious:

**[The First Tooth](http://www.storyit.com/Classics/JustPoems/firsttooth.htm)**, by Charles and Mary Lamb  
(<http://www.storyit.com/Classics/JustPoems/firsttooth.htm>)

*If you have ever been annoyed by a baby brother or sister, you might like this poem.*

**[An Autumn Greeting](http://www.storyit.com/Classics/JustPoems/autumngreet.htm)** (<http://www.storyit.com/Classics/JustPoems/autumngreet.htm>),  
by Anonymous (“Anonymous” means that no one knows who wrote this poem.)

*Do you love the season of fall? If so, you will like this graceful poem about the wind and the leaves.*

**[Bed in Summer](http://www.storyit.com/Classics/JustPoems/bedinSummer.htm)** (<http://www.storyit.com/Classics/JustPoems/bedinSummer.htm>), by  
Robert Louis Stevenson

*This poem was written more than a hundred years ago, but you might feel the same way today about going to bed in the summer time.*

If you liked these poems, you might like these websites:

**[Classic Poems for Children](http://www.storyit.com/Classics/JustPoems/classicpoems.htm)**  
(<http://www.storyit.com/Classics/JustPoems/classicpoems.htm>)

*Here you will find lots of poems for kids by famous authors. Many of the poems can be printed with illustrations.*

**[Ongoing Tales, Poetry From the Past](http://www.ongoing-tales.com/SERIALS/oldtime/POETRY/index.html)**  
(<http://www.ongoing-tales.com/SERIALS/oldtime/POETRY/index.html>)

*This website is updated every month with poems from classic children’s books.*

You can also find many books of poetry for children in your school or local library. Here are some that you might enjoy:

**For Laughing Out Loud: Poems to Tickle Your Funnybone** by Jack Prelutsky, Marjorie Priceman (Illustrator) (Knopf Books for Young Readers, 1991). ISBN: 0394821440.

*Here you will find goofy poems about eels, umbrellas, noodles and more—and lots of cool pictures too.*

**Oh, No! Where Are My Pants? and Other Disasters** by Lee Bennett Hopkins, Wolf Erlbruch (Illustrator) (HarperCollins, 2005). ISBN: 068817860X.

*Have you ever had a day when everything went wrong? If so, you will like the poems in this book.*

**Mammalabilia: Poems and Paintings**, Douglas Florian (Harcourt Children's Books, 2000).

ISBN: 0152021671.

*This book is full of goofy poems about all kinds of animals. The pictures are great too!*

**A Child's Garden of Verses**, by Robert Louis Stevenson (Chronicle Books, 1989).

ISBN: 0877016089.

*This well-known book is filled with favorite poems for children. It has been published many times, so your school or local librarian should be able to help you find a version of it.*

**The Random House Book of Poetry for Children** by Jack Prelutsky, Arnold Lobel (Illustrator) (Random House Books for Young Readers, 2000).

ISBN: 0394850106.

*This book has five-hundred poems for kids! There are silly poems, scary poems, serious poems—any type of poem you can imagine. There are also pictures on every page.*



## Writing Poetry

Now that you have read some poems, are you ready to write poetry of your own? If you would like to practice or “warm up” a little first, you will find that this [Poetry Engine](http://teacher.scholastic.com/writewit/poetry/poetry_engine.htm#) ([http://teacher.scholastic.com/writewit/poetry/poetry\\_engine.htm#](http://teacher.scholastic.com/writewit/poetry/poetry_engine.htm#)) will help you easily create several types of poems. If you have a printer at home or school, you can even print your poems and save them.

You might also like to read some poems by kids like you. This [Poetry Zone](http://www.poetryzone.ndirect.co.uk/index2.htm) (<http://www.poetryzone.ndirect.co.uk/index2.htm>) website has lots of examples of poems by young poets.

Ready to start writing? On the next few pages you will find several types of poetry that you might like to write in your Poetry Notebook. These poems are great for beginning poets. Just remember, your poems can be about anything you like. They can be funny or serious. They can be about familiar places or places that exist only in your imagination. You might select words that rhyme or create a nice rhythm. You can even make up your own words. It's up to you—just make sure that you have some fun!

### **FIVE-SENSE POETRY**

One way to write a great poem is to describe how things look, taste, smell, sound and feel. In fact, you can create a poem just by thinking of an emotion and asking yourself these five questions:

- ★ What color is this feeling?
- ★ What does it taste like?
- ★ What does it smell like?
- ★ What does it sound like?
- ★ What does it feel like?

Here's an example:



### ***Excitement***

*Excitement is bright yellow  
It tastes like fizzy soda  
It smells like popcorn popping  
It sounds like static crackling  
It feels like hopping, hopping, hopping!*

Would you like to try a five-sense poem? Why don't you write a few in your Poetry Notebook? Try some different kinds of feelings: happy feelings, funny feelings, and sadder feelings. How are your poems different? How are they alike?

### **INSTANT POETRY**

Instant poems might seem tricky at first, but they're really very easy to write. Instant poetry uses repeating words. Here's an example:

### ***Bad Dog!***

*The bad dog  
The bad dog smiles  
Bad dog smiles while  
Dog smiles while eating  
Smiles while eating Dad's  
While eating Dad's sandwich.*

Do you want to write an Instant Poem? If so, you can follow the steps below:

1. Take out your Poetry Notebook and write three words for the first line. In the poem, "Bad Dog!" the first three words are *The bad dog*.
2. For your second line, copy the first line, and then add one more word at the end. In "Bad Dog!" the added word is "smiles." You can see this below with the new word highlighted.

*The bad dog*  
*The bad dog smiles*

3. For the third line, rewrite the second line, then add another word at the end. In “Bad Dog!” this word is “while.”

*The bad dog*  
*The bad dog smiles*  
*The Bad dog smiles while*

4. Now, we’re not done with this line yet! Before moving on, we must cross off the first word of this line. You can see this below.

*The bad dog*  
*The bad dog smiles*  
~~*The*~~ *Bad dog smiles while*

5. For the fourth line, copy the third line (without the crossed off word), and then add one word at the end. In “Bad Dog!” the new word is “eating.”

*The bad dog*  
*The Bad dog smiles*  
~~*The*~~ *Bad dog smiles while*  
*Bad Dog smiles while eating*

6. Now cross off the first word of your new line.

*The bad dog*  
*The Bad dog smiles*  
~~*The*~~ *Bad dog smiles while*  
~~*Bad*~~ *Dog smiles while eating*

Are you getting the hang of this? Keep adding new lines, always copying the line before, adding a word at the end, and crossing off the first word. Here’s how it worked in “Bad Dog!”

*The bad dog*  
*The Bad dog smiles*  
~~*The*~~ *Bad dog smiles while*  
~~*Bad*~~ *Dog smiles while eating*  
~~*Dog*~~ *Smiles while eating Dad’s*

~~Smiles~~ while eating Dad's sandwich.

When you feel that your poem is finished, rewrite it without the crossed off words. Read it out loud. Do you like this poem? Try a few more. You can write about anything—kids at school, doing chores, a beautiful sunset—whatever you like.

## WISH POEMS

The directions for “Wish” poems couldn’t be easier: Just write eight to ten lines beginning with “I wish.” Here’s one to get you started:

*I wish I were a wizard.*

*I wish I could wave my wand and fast-forward to the weekend.*

*I wish I could make a potion that would make my sister clean my room—and like it.*

*I wish I could own a talking monkey who would tell me everybody’s secrets.*

*I wish I could knock on the TV and tell the characters what they should do.*

*I wish I could make a stool that would rub my mother’s feet.*

*I wish I could create a leash that would take my dog for walks.*

*I wish I could hide in a tall candy garden whenever I got tired of wishing.*

What do you wish for? What are your dreams? What would you like most for yourself? For your family? What silly things do you want? What serious things? See if you can write two or three very different Wish poems.

## CINQUAINS

Cinquains are five-line poems that describe a person, place, thing or idea. This is how you write a cinquain:

1. Line 1: one word, a noun (person, place, thing or idea), that names the subject of the poem
2. Line 2: two words, usually adjectives, that describe the subject of the poem
3. Line 3: three words that describe something the subject does, or that gives more description about the subject
4. Line 4: four words that tell how you feel about the subject
5. Line 5: one word that means the same thing as the subject (a synonym) or that is similar to the subject.

Here's an example of a cinquain:

*Summer*  
*Hot, bright*  
*Days stretch long*  
*More time for play*  
*Vacation*

Here's another:

*Books*  
*Crisp pages*  
*Invite you in*  
*Step into new worlds*  
*Doors*

What Cinquains can you create? Can you write about some of your favorite things? How about the things you hate or that scare you? Try a few in your Poetry Notebook.

Have you enjoyed writing some different types of poems? If so, you can find other types of poetry to write by clicking on the links below.

**[Poetry for Kids](http://www.kathimitchell.com/poemtypes.html)** (<http://www.kathimitchell.com/poemtypes.html>)

*This website has instructions for writing all kinds of poetry—such as alphabet poems, haiku, and “third-eye” poems. What are third-eye poems? You will have to check the website to find out!*

**PoetryExpress** (<http://www.poetryexpress.org/15poems.htm>)

*This website offers “fifteen poems you can write now,” plus examples of different types of poems by famous poets.*

## Launching Your Results



Now that you have written some interesting poems in your Poetry Notebook, you just need to find a way to share them with others! You can find poetry contests through the websites below:

### **Giggle Poetry Contests**

([www.gigglepoetry.com/poetrycontest/contests.html](http://www.gigglepoetry.com/poetrycontest/contests.html))

*These ongoing contests are open to kids in grades 1-12. If your poem is one of the winners, it will be posted on the Giggle Poetry website.*

### **Poetry4Kids Contests**

(<http://www.poetry4kids.com/modules.php?name=Contests>)

*You must fill out the site’s free registration to access this website and enter contests. Once you register, you will find monthly contests that you can enter and judge. It also offers a lesson each month on how to write a poem for the contest.*

### **Poetry Zone Competitions**

(<http://www.poetryzone.ndirect.co.uk/index2.htm>)

*The Poetry Zone has lots of poetry competitions with topics such as “Make us laugh,” “I’m not telling you,” and “I remember, I remember.” Anyone under the age of 18 may enter, but past winners include kids just like you. There is usually a prize for winning poems, which are also posted on the website.*

Here are some websites where you can publish your poetry:

### **Poetry Writing with Jack Prelutsky**

([http://teacher.scholastic.com/writewit/poetry/jack\\_home.htm](http://teacher.scholastic.com/writewit/poetry/jack_home.htm))

*Click this link to take some online lessons with children’s poet Jack Prelutsky, then publish your poem on the website.*

### **Poetry Writing with Karla Kuskin**

([http://teacher.scholastic.com/writewit/poetry/karla\\_brainstorming.htm](http://teacher.scholastic.com/writewit/poetry/karla_brainstorming.htm))

*Here you will find tips on poetry writing from children’s poet Karla Kuskin. Once you have finished her “workshop” you may submit a poem to post on the website.*

### [The Poetry Zone Poetry Gallery](http://www.poetryzone.ndirect.co.uk/index2.htm)

(<http://www.poetryzone.ndirect.co.uk/index2.htm>)

*You can submit a poem of 20 lines or less and if your poem is selected for the website, it will remain online for several weeks. All kinds of poems are published: animal poems, school poems, friendship poems... What kind of poem would you like to submit?*

In addition to publishing on the Internet, you can send you poems to these print magazines:

### [Stone Soup](http://www.stonesoup.com/main2/whatisstonesoup.html)

(<http://www.stonesoup.com/main2/whatisstonesoup.html>)

Mail submissions to:  
Submissions Dept.  
P.O. Box 83  
Santa Cruz, CA 95063

### [Potluck Children's Literary Magazine](http://www.potluckmagazine.org/)

(<http://www.potluckmagazine.org/>)

*This magazine publishes poetry and other writing by authors ages eight through sixteen. Email your poem to [submissions@potluckmagazine.org](mailto:submissions@potluckmagazine.org). But first make sure to read the writers' guidelines by clicking on the link on the magazine's homepage.*

Congratulations! If you have completed this project, you have done something special and unique. You have brought some new poems into the world! And because no one else sees life quite the way you do, your poems are one of a kind. You should be very proud of this achievement! Are you ready to write some more poetry?



**For Laughing Out Loud: Poems to Tickle Your Funnybone** by Jack Prelutsky, Marjorie Priceman (Illustrator) (Knopf Books for Young Readers, 1991). ISBN: 0394821440.

**Oh, No! Where Are My Pants? and Other Disasters** by Lee Bennett Hopkins, Wolf Erlbruch (Illustrator) (HarperCollins, 2005). ISBN: 068817860X.

**Mammalabilia: Poems and Paintings** by Douglas Florian (Harcourt Children's Books, 2000).  
ISBN: 0152021671.

**A Child's Garden of Verses**, by Robert Louis Stevenson (Chronicle Books, 1989). ISBN:  
0877016089.

**The Random House Book of Poetry for Children** by Jack Prelutsky, Arnold Lobel (Illustrator)  
(Random House Books for Young Readers, 2000). ISBN: 0394850106.

**A Voice of Her Own: The Story of Phillis Wheatly, Slave Poet** by K. Lasky, P. Lee  
(Candlewick Press, 2003). ISBN: 0763602523.

**Carl Sandburg: Adventures of a Poet** by C. Sandburg, P. Niven, M. Nadel (Illustrator)  
(Harcourt Children's Books, 2003). ISBN: 0152046860.

**The Importance of Emily Dickinson**, by Bradley Steffens (Lucent Books, 1998). ISBN:  
1560060891.

**Langston Hughes: American Poet**, by A. Walker, C. Deeter (Illustrator) (Amistad, 2002).  
ISBN: 0060215186.



## Internet

### **Blow Your Nose!**

<http://www.gigglepoetry.com/poemssilly/blowyour.html>

### **Sick**

<http://www.poets.org/poems/poems.cfm?45442B7C000C040D0C72>

### **The First Tooth**

<http://www.storyit.com/Classics/JustPoems/firsttooth.htm>

### **An Autumn Greeting**

<http://www.storyit.com/Classics/JustPoems/autumngreet.html>

### **Bed in Summer**

<http://www.storyit.com/Classics/JustPoems/bedinSummer.html>

### **Classic Poems for Children**

<http://www.storyit.com/Classics/JustPoems/classicpoems.htm>

**Ongoing Tales, Poetry From the Past**

<http://www.ongoing-tales.com/SERIALS/oldtime/POETRY/index.html>

**Poetry for Kids**

<http://www.kathimitchell.com/poemtypes.html>

**Poetry Express**

<http://www.poetryexpress.org/15poems.htm>

**Giggle Poetry Contests**

[www.gigglepoetry.com/poetrycontest/contests.html](http://www.gigglepoetry.com/poetrycontest/contests.html)

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[http://teacher.scholastic.com/writewit/poetry/karla\\_brainstorming.htm](http://teacher.scholastic.com/writewit/poetry/karla_brainstorming.htm)

**The Poetry Zone Poetry Gallery**

<http://www.poetryzone.ndirect.co.uk/index2.htm>

**Stone Soup**

<http://www.stonesoup.com/main2/whatisstonesoup.html>

**Potluck Children's Literary Magazine**

<http://www.potluckmagazine.org/>