

The Old Farmer's Almanac



activity guide

by Faith Hickman Brynie

Welcome, teachers, parents, and kids!

Thousands of you used the Activity Guides developed for Volumes 1 and 2 of *The Old Farmer's Almanac for Kids*. (Thank you!) We hope that even more of you make use of this one.

This guide is designed to help you identify opportunities for extending the fun and the learning beyond the pages of *The Old Farmer's Almanac for Kids*, Volume 3. In some cases, we ask questions, but we don't provide answers. This is because looking for the answer is often more important than the answer itself. It's the process, not the product, that matters.

To get the most from *The Old Farmer's Almanac for Kids* . . .

- **Begin by reading and talking together** about interesting items in the Almanac.
- **Use entries in the Almanac** to spur further discussion and research, whether in the classroom or library or on the Internet.
- **Encourage questions.** You may not know the answers, but perhaps you can find them together. In such cases, the journey is as important as the destination.
- **Take every opportunity to turn your discussions or research into a tangible product.** Write a poem, story, or original song. Build a model. Make a scrapbook. Take photographs. Paint pictures. Draw diagrams. Make bulletin board displays or a refrigerator gallery. (You'll find specific suggestions for these in this guide.)

We offer some ideas for each chapter (including links to topic-specific Web sites), but the interests and ideas that will come from you and your children exploring and learning together will generate many more. **Have fun!**

CALENDAR

All-Year Activities

1. Nearly every day of the year is special for some reason. For example, February 11 is **Don't Cry Over Spilt Milk Day**. September 6 is **Fight Procrastination Day** (perhaps celebrated on September 7?). Plan a party for your favorite special day, complete with costumes, decorations, and theme-related food. You'll find many more ideas in *Kids Celebrate! Activities for Special Days Throughout the Year* by Maria Bonfanti Esche and Clare Bonfanti Braham (Chicago Review Press, 1998).



January

1. January 1 is the **feast day of St. Basil**. On this day, families in Greece and Bulgaria break open a pomegranate on the doorstep. If they find many seeds inside, they believe that their year will be happy and prosperous. Do a scientific investigation of seed numbers in a fruit or vegetable. (If you don't have any pomegranates handy, try peas in the pod, oranges, pears, or acorn squash.) Make a graph to show the mean, median, and mode of seed numbers in at least ten pieces of the food you investigate.

St. Basil Day celebrants also bake a bean, pea, or silver coin into bread or cake. To make some fun on a cold January evening, create your own version of this tradition. Cut prerolled (from the freezer case) pie dough into squares. Fold the squares in half, slipping a well-washed quarter inside one. Beat an egg, brush it on the edges, and crimp the edges to seal them. Bake according to package directions. When the squares are cool, dust them with powdered sugar and serve them to your friends and family. (Tell them not to bite down *too* hard.) The person who gets the quarter may expect a lucky year.

2. The second week in January is **Universal Letter-Writing Week**. Write a letter to a leader in your community, politely and persuasively suggesting a needed safety improvement in your area. You might suggest a stoplight or crosswalk at a particular corner or a lower speed limit on a busy street. You can also write letters to friends and family. Tell them what you are up to this month.

February

1. February is **National Bird Feeding Month**. Make an easy bird feeder to attract birds to your yard or school grounds. Tie a string around a pinecone so that you can hang it. Cover the pinecone with creamy peanut butter, then roll it in birdseed. Hang the cone outside and watch for birds. Describe those that visit your feeder. Use a bird identification manual to learn their names.



2. February is **Sweet Potato Month**. You can grow a sweet potato plant on your kitchen windowsill. Find a sweet potato that has already started to sprout. (One that hasn't may have been treated with a chemical to prevent sprouting.) Stick three toothpicks into the sweet potato. Use the toothpicks to support the sweet potato on the rim of a jar of water, with its bottom (the pointy end) in the water. Keep the jar full of water in a sunny window. Your sweet potato plant should start to sprout in a week or two.

3. The first full week in February is **Children's Authors and Illustrators Week**. Ask your librarian to help you find a book written by an author whom you've never read before. Or choose an illustrator whose art you've never admired before. Study your book selection. Decide what you like best about the writing or the pictures. Write a book review telling your friends why you think they will (or won't) like the book.

March

1. The first full week in March is **Celebrate Your Name Week**. Go to <http://babynamesworld.parentsconnect.com> and try to find the meaning and origin of your name. Have your friends do the same. Make a scrapbook with pictures of you and your friends, along with information about everyone's name.

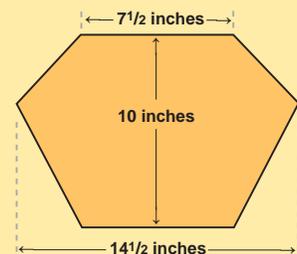


2. March 2 is **Dr. Seuss's birthday**. (He was born in 1904.) Read a Dr. Seuss book aloud, together with friends or family. Or do some research on Dr. Seuss and write a Seuss-style biography for him, complete with rhythm, rhyme, and whimsical illustrations.

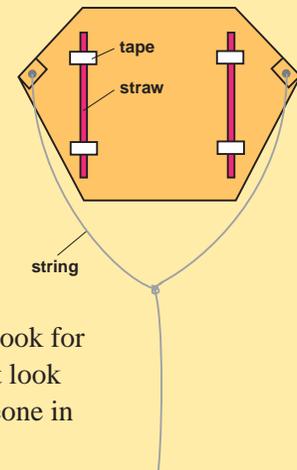
3. In many places, March is notorious for its rapid and extreme **weather changes**. Go to Almanac.com/weather, enter your zip or postal code, and find the 7-day forecast. How accurate is it? Keep a weather diary for one month. Each day, record the prediction. Then record what you see when you look out your window. Calculate a percentage to express how accurate the forecasts were.

April

1. April is **National Kite Month**. Here's how to build a simple kite: Cut the shape shown here from a plastic bag. Tape milkshake straws as shown. Tape the corners and punch holes. Tie pieces of string through the holes. Bring the two ends of string together at an even length in the middle and tie a knot. Your kite should fly great, but if it is hard to control, try taping on a strip of newspaper as a tail.



2. They say that **April showers bring May flowers**. See how much rain your flowers get by building and using a simple rain gauge. Get a tall, empty jar. Tape a ruler vertically to its outside. Set the jar in an open space (not under trees or near buildings). Push it into the ground so that it won't fall over. Every time it rains, read the amount of water in the jar, using the ruler (and then, of course, empty the water out to get ready for next time). Keep a record of daily rainfall for the entire month.



3. April is **National Youth Sports Safety Month**. Devise a checklist and use it to look for safety hazards on your school or community playgrounds or athletic fields. You might look for trash and litter, broken glass, potholes, unstable goalposts, and more. Talk to someone in charge about how such hazards can be removed now and avoided in the future.

May

1. May 1 is **School Principals' Day**. The Tuesday of the first full week in May is **National Teacher Day**. Design and make greeting cards to give to your principal and teachers to celebrate their professions. Present them with their special cards on their special days.
2. May is **National Egg Month**. It's also **National Vinegar Month**. In honor of both, try this experiment. Place an uncooked egg that is still in its shell into a cup or jar of vinegar. Watch what happens. Wait a day or two and remove the egg from the vinegar. How does it feel? Place the egg in water and watch for another day or two. What happens? Do some research in your library or on the Internet to find out why. *Do not eat the egg!*
3. May is **National Asparagus Month**. Cook some for dinner. Snip the tough bottoms off about a dozen spears. Place the tops in a shallow glass pan with a little water and microwave for 45 seconds. Drain. Place a pat of butter on top and let it melt. Sprinkle on a little lemon juice if you like. Enjoy!

June

1. June is **Great Outdoors Month**. Get out and play one of these three tag games:

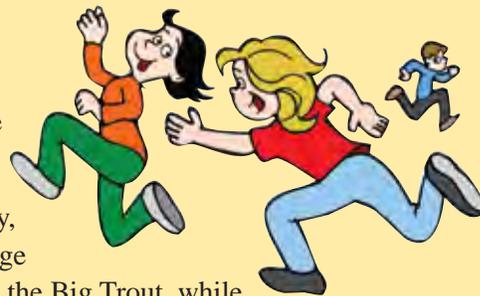
Trout Farm: Put some flour in a squeeze bottle (for example, a dry, empty, ketchup bottle). Squeeze the flour onto the grass to mark three or four large circles; inside the flour circles are the “fish nurseries.” One player acts as the Big Trout, while all of the other players are baby trout, who take their place in one of the nurseries. When the Big Trout shouts, “Trout, trout, swim about,” all the baby trout must swim to a different nursery. If tagged by the Big Trout, a player becomes a Big Trout, too. The winner is the last baby trout to be tagged.

Ponytails: Cut colorful ribbons about 12 inches long. Tuck one into the back of each player's shoe. At the whistle, the players step on one another's ponytails until all the ribbons come off. Tuck the ribbons in waistbands or under belts and play again, pulling out the ribbons by hand (not stepping on them).

Happy Hands: Choose one player to be “Happy.” Whenever Happy tags someone, the pair join hands and try to tag other players. As more players are tagged and join the chain, the two players with a free hand (the ends of the chain) are the “Happies.” The game ends when everyone is happily holding hands.

2. June is **National Rivers Month**. Get a map of your area and locate the rivers near you. Visit www.americanrivers.org to find out what you can do to help protect and preserve clean rivers in your region.

3. The first full week in June is **National Sun Safety Week**. Find out why people who play outdoors need to protect their skin against the Sun's harmful rays. Find out what SPF means and make a poster that explains how everyone can and should stay safe in the sun.



July

- 1.** If you go to the beach, bring home some fine sand and **make your own sand-clay sculpture.**

Mix $\frac{1}{2}$ cup of cornstarch with 1 cup of sand. Ask an adult to boil $\frac{1}{2}$ cup of water in an old pot. Add the sand and cornstarch mixture to the water and continue cooking on low heat until the clay thickens. Stir in a few drops of food coloring if you want colored clay. When your sand-clay is cool, mold it into whatever shape you like. Let your sculpture dry in the sun.



- 2. Make a sand picture.** On heavy card stock, draw a picture with glue. For example, draw a circle for a face with dabs of glue for eyes, a nose, and a mouth. Sprinkle sand all over the drawing and let the glue dry. Then shake off the excess. Only your drawing will remain.

- 3.** July 22 is **Spoonerism Day**, named for Reverend Archibald Spooner, born on this day in 1844. A spoonerism is a switch of letters or sounds in words so that they come out differently than they should. This happened often to Reverend Spooner. Examples are “blushing crow” (crushing blow), “Please sew me to another sheet” (please show me to another seat), and “a well-boiled icicle” (a well-oiled bicycle). Sometimes spoonerisms happen by accident, but sometimes they are done intentionally, for fun. Collect spoonerisms and compile a humorous dictionary titled *Tips of the Slongue*.

August

- 1.** August 1 through 7 is **National Clown Week.** Make yourself a clown costume from large paper grocery bags and do some clowning around of your own.

- 2.** Build paper airplanes in honor of **National Aviation Week**, held annually during the week of Orville Wright’s birthday, August 19.

Go to www.paperairplanes.co.uk/planes.php or

www.paperplane.org/patterns/patterns.html to find a design you like or create one of your own. Make changes as you engineer your paper airplane to fly farther, faster, higher, or longer.



- 3.** August 24 is **National Waffle Day.** On a long strip of adding machine paper, make a timeline to scale (1 inch = 20 years) of milestones in the history of the waffle. Use your completed timeline as a table decoration at a waffle breakfast. These dates from www.mrbreakfast.com will help you get started:

1200s B.C. Ancient Greeks cooked flat cakes between two metal plates. These early waffles were called *obleios*. They were served with cheeses and herbs.

1620 The pilgrims brought Dutch *waffles* to America.

1735 The word *waffle* (with two f’s) appeared in English print for the first time.

Late 1800s Thomas Jefferson returned to the United States from France with a long-handled, patterned waffle iron.

1869 Cornelius Swarthout patented the first U.S. waffle iron.

1953 Eggo frozen waffles were sold in supermarkets for the first time.

1964–65 Brussels restaurateur Maurice Vermersch brought his wife’s fluffy Belgian waffle recipe to the World’s Fair in New York. It became a big hit in the United States.

September

- 1.** September is **Library Card Sign-Up Month**. If you don't have a library card, go get one. If you have one you haven't used in a while, check out a print book, audio book, music CD, or DVD. Find out what other fun things are available at your library.
- 2.** September is **Mold Awareness Month**. To heighten your own awareness, put a slice of white bread in each of three ziptop plastic sandwich bags. Seal tightly. Put one bag in the refrigerator, one in a warm place, and one in a dark place. Look at the bread daily, but *do not open the bags*. Which bread molds first? What does the mold look like? Throw the unopened bags away when the mold gets so disgusting that you can't stand to expand your awareness any further.
- 3.** The third full week in September is **National Clean Hands Week**. Keep a small notepad with you and write down the time and place whenever you wash your hands. Ask ten friends to do the same. Make a bar graph showing how often (or how seldom) you and your friends wash your hands. Is improvement needed?

October

- 1.** October is **National Stamp Collecting Month**. Ask your family and friends to save for you all of the stamps that come on their letters and cards. Make a collage of stamps that you can frame and hang in your room.
- 2.** The second Monday in October is **Native Americans' Day** in South Dakota. Find out about the Native Americans who once made their home in your area. Maybe they still do. Write facts about them on strips of paper 1 inch wide and 5 inches long. Glue or tape the strips together to form a chain. Use it as a decoration for a Native Americans' Day party.
- 3.** **National Mole Day** is celebrated every year on October 23 from 6:02 A.M. to 6:02 P.M. No, the celebration does not honor a burrowing animal. Mole Day commemorates Avogadro's Number (6.02×10^{23}), which is a basic measuring unit in chemistry. The day is celebrated in schools to promote interest in chemistry. Talk with your science teacher about planning events for your school on National Mole Day. For more information, go to www.moleday.org.



November

- 1.** November is **Peanut Butter Lovers Month**. Try this easy recipe for an after-school snack: Spread some peanut butter inside a celery stalk. Top with bacon bits, raisins, or chocolate sprinkles. Crunch and enjoy.
- 2.** Many Americans celebrate **Thanksgiving Day** on the fourth Thursday in November. (And many Canadians celebrate it on the second Monday of October!) Make a list of all the things you are thankful for. Post your list on your refrigerator and ask others in your family to add to it throughout the month of November.

3. November 20 is **Absurdity Day**. No one knows why. Isn't that absurd? Absurd means illogical and senseless. Look through old newspapers and magazines. Find things that you think are absurd. Make an absurdities scrapbook that you can update regularly.

December

1. December is **National Tie Month**. Using permanent markers, draw a funny tie on the front of an old T-shirt. Or cut up and decorate an old sock to make a truly hilarious tie.

2. December 10 is **Nobel Prize Day**. Check newspapers, magazines, and Internet news sites for information about this year's winners. Pick a winner in one of the categories and write a letter of congratulations.

3. **Nights grow long and days grow short** in December. In fact, the shortest day of the year—the winter solstice—occurs (in the Northern Hemisphere) around December 21 each year. From your local newspaper or on Almanac.com, obtain the times of sunrise and sunset for December 15 through 25 in your area. Do the math to figure out the length of the days. Which day is the solstice?



ASTRONOMY

1. A *mnemonic* is a series of words or letters that aid memory. You can recall the order of the eight planets, for example, using this silly sentence: “**M**y **V**ery **E**ager **M**other **J**ust **S**erved **U**s Noodles.” (**M** = Mercury, **V** = Venus, **E** = Earth . . . you get the idea.) On index cards, **make a file of mnemonics** to help you and your friends remember important pieces of information about our solar system, galaxy, and universe. Find and copy mnemonics other people have invented or invent your own.

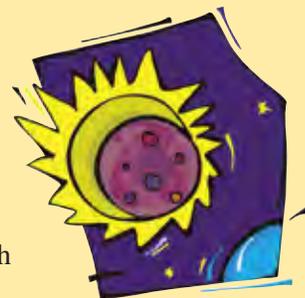
2. Today, our Sun is a yellow dwarf star. Five billion years from now, it will grow to become a red giant. As it dies, it will cast off its outer layers. Its core will be a white dwarf. Slowly, its light will fade until it becomes a black dwarf. **Make a poster** to describe and illustrate the events that will occur as our Sun dies.

3. **Make and play an astronomy game** that works like bingo. Make STAR cards that look like the example below. Use the names of planets, constellations, and celestial bodies, and other astronomical words. Use as many words as you want and make as many cards as you like. (The more terms and the more players, the harder the game.) Write the words on slips of paper and have the “caller” draw and say the names. Let players use pennies to mark their STAR cards. The person who yells “Star!” after completing a row diagonally, vertically, or horizontally is the winner.

**Sample
STAR Card**

S	T	A	R
Mercury	Quasar	Wormhole	Mars
Ursa Major	Supernova	Cosmos	Comet
Black Hole	Universe	Uranus	Sun
Jupiter	Moon	Asteroid	Perseus

4. You must not watch a solar eclipse. You'll damage your eyes. But you can **watch what happens as the Moon moves between Earth and the Sun.** Get a small hand mirror. Use tape to cover most of the mirror's surface, but leave a ½-inch square in the middle. Stand with your back to the Sun, and hold the mirror at an angle so that the image of the eclipse reflects onto a shaded wall or garage door. Be careful not to flash the light into someone's eyes.



5. During a lunar eclipse, Earth blocks light from the Sun, forming a shadow in space. The darkest part of the shadow, where all of the Sun's light is blocked, is the umbra. The lighter part, where blockage is only partial, is the penumbra. **Observe a partial lunar eclipse and make sketches of where the umbra and penumbra fall on the Moon.** If you have a video camera, you may be able to record the Moon's movements through the umbra and penumbra.

6. Magnets are sometimes used in recycling centers to separate certain types of recyclable materials from other items in trash. Use a bar magnet and some clean discards from your family's kitchen to **demonstrate how a magnet can help in the recycling process.**

7. Design and carry out an experiment to determine which kinds of metals are attracted to a magnet and which are not.



8. Challenge a friend to a magnet game. Place some small items in a paper bag. You might put in a paper clip, a wooden block, a plastic bottle cap, a small glass, a nail, a metal spoon, a key, a marble, a piece of aluminum foil, a coin, a battery, a screw, some staples, and a small pair of scissors. Use your imagination to add other items. Ask your friend to pick an item from the bag and predict whether a magnet will be attracted to it. Test the prediction with a magnet. If your friend's prediction proves correct, he or she gets a point. If your friend is wrong, you get a point.

9. A year is 365 days (of 24 hours) on Earth, but not so on other planets. Visit NASA's "Planet Profiles" at <http://pds.jpl.nasa.gov/planets/special/planets.htm> to find the length of each planet's year in Earth-days. Then **calculate your age in your favorite planet's years.** For example, the length of a year on Mercury is 88 Earth-days. So, if you are 9 in Earth-years, you are 37 in Mercury-years ($9 \times 365 = 3,285$; $3,285 / 88 = 37.33$).

10. Make a Jeopardy! game of facts about Jupiter. Fold index cards in half. Inside, write a question about Jupiter. On the outside, write the answer. Tape the cards closed with a little piece of masking tape. Let players draw cards from a box or bag. The challenge is to ask the question that goes with the answer. Let players remove the tape and open the cards to check their questions. The player who asks the most correct questions wins.

11. Jupiter was the name of a Roman god, but the names Europa, Callisto, Ganymede, and Io trace their origins back to Greek mythology. Get a book of Greek myths from your library and **learn the legends that gave Jupiter's moons their names.**

12. With ordinary field binoculars, **you can easily see Jupiter's moons.** Go to www.skyandtelescope.com/observing/ataglance or Almanac.com or Almanac4kids.com for weekly information on where and when to look for Jupiter and its moons in the night sky.

WEATHER



1. Don't wait for a sunny day to **have a weather-theme party.** Ask each guest to come prepared to tell about a true extreme weather event (one could be Hurricane Katrina). Play weather songs such as "Singing in the Rain," "Stormy Weather," "Heat Wave," "You Are My Sunshine," and "Let It Snow." Decorate with paper weather vanes. Make streamers out of newspaper weather reports and set them a-blowin' with a fan to make pretend wind. Serve sugar cookies frosted yellow like the Sun, with Cloud Punch. **To make the punch:** In a big punch bowl, mix one large can (46 ounces) of pineapple juice, 1 large can (46 ounces) of orange juice, and one 2-liter bottle of lemon-lime carbonated soda. Float scoops of vanilla ice cream on top to look like clouds.

2. Using a file box and index cards, **make a "Weather Factoid File."** If you have PowerPoint on your computer, use it to make a presentation of what you learn. Here are some facts from the National Lightning Safety Institute to get you started:

- **The total amount of rain, snow, and other moisture falling on the surface of the Earth each year equals 10 million gallons for every person on the planet.**
- **If spiders leave their webs, expect a storm. If they work when it is raining, expect a short storm.**
- **Count the number of cricket chirps in 14 seconds. Add 40. The total will equal the air temperature in Fahrenheit within one degree.**

3. **Make a poster or PowerPoint presentation** of weather map symbols and their meanings. Use real weather maps from the newspaper or the Internet as examples. End with a depiction of the weather conditions across the country for a given day.

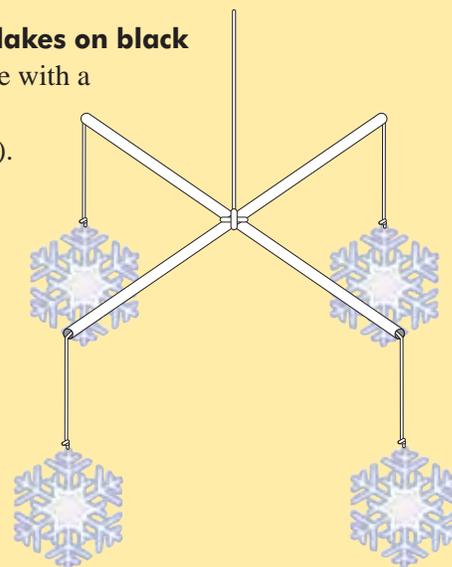


4. **Will red water make red rain?** Put some hot water in a quart jar. Color it red with food coloring. Stretch plastic wrap over the top of the jar. Put an ice cube on the plastic wrap. Watch for water droplets to form on the underside of the plastic wrap. Are they red?

5. **Take digital or film photographs** of weather changes in your community. Make a photo album to show people what kind of weather is most common where you live.

6. Outside on a cold day, you can observe snowflake shapes. **Catch the flakes on black construction paper** that you've chilled in the freezer. Examine each flake with a magnifying glass or hand lens. To help you in your observations, carry a copy of *Ken Libbrecht's Field Guide to Snowflakes* (Voyageur Press, 2006).

7. Make paper snowflakes and use them to **make a wintry mobile for your room.** Tie two soda straws together in the middle, forming an X shape. Keep a long piece of string there to use to hang your mobile. Thread strings through the straws and tie your snowflakes to them. Adjust the strings and snowflakes until everything balances.



8. You can build a tornado model using two soda bottles.

Watch the demonstration at

www.stevespanglerscience.com/experiment/00000056

to learn how.

9. Build a wind sock to help you observe the breezes. Ask an adult to cut the flat top out of a round oatmeal box top, leaving only the cardboard rim. Glue or staple lightweight ribbons around the rim. Attach strings to the rim; gather them together in a knot above the trim and hang your windsock outdoors. The wind will raise the sock and the ribbons will flutter. The stronger the wind, the more action you'll see in your wind sock.

■ You don't need specialized equipment to estimate wind speed. **Use the Beaufort Wind Force Scale** at Almanac.com/windforce. Keep a diary of your observations of wind speeds for one month.

10. You can **make music with wind that you make yourself.** Line up some empty glass bottles. Partially fill them with different amounts of water. Push your upper lip out over your lower one and blow straight down into each bottle until you hear a musical tone. What do you notice about the pitches made by the different bottles? Use your bottles to play a tune.

11. Make your own barometer. Put some cold water in a jar until it is a little less than half-full. Color the water with a few drops of food coloring. Using a ruler and a permanent marker, draw lines up the side of a soda straw at one-quarter-inch intervals. Put the straw in the jar so that the bottom of the straw is in the water but not touching the bottom. Tape the straw to the top of the jar so that it cannot slip down. Suck some water about halfway up the straw. Pinch off the top of the straw and seal it completely with a tight bulldog or binder clip, a piece of tape, or modeling clay. (If any air at all can leak in, your barometer won't work.) Observe your barometer daily. As atmospheric pressure rises, so will the water in the straw.



NATURE



1. Make a seasonal place mat to celebrate spring, summer, or fall. Outdoors, collect some flowers or leaves. Place them between the pages of an old telephone book until they are flat and dry. Glue your dried plants to a piece of construction paper. Cut out a sheet of clear, transparent contact paper that is the same size as the construction paper. Remove the paper backing from the contact paper and place it, sticky side down, over your paper place mat. Your placemat will be stronger and longer lasting if you put clear contact paper on the back, too.

2. Turn old dominoes, blocks, or checkers into an animal poetry game. Write words, including nouns for the names of wild animals (*deer, fox, turkey*) and verbs (*run, hop, swim*), on small pieces of paper. Also write adjectives, adverbs, conjunctions, prepositions, and other parts of speech. Tape or glue the words onto the blocks or game pieces. Put the blocks in a bag or box. Draw several without looking. Use the words you draw to inspire a poem about an animal. If you draw an odd combination such as *turkey* and *swim*, you might come up with a surprisingly creative poem!

3. Build a bird feeder from a clean, dry, 1-quart milk carton. About halfway down one side of the carton, cut a hole in the shape of a small arched door. Make the hole big enough for birds to put their heads in, but not so large that the carton gets wobbly. Poke a pencil or wooden dowel through the carton just below the door. The pencil will serve as a perch. Fill the carton with birdseed to a level just below the base of the door. Hang and enjoy watching the birds that visit your feeder.

4. Write a poem about sharks using *iambic pentameter* in some of the lines. This is a classic, rhythmic pattern of stressed and unstressed syllables alternating in five pairs, like this: ho-HUM, ho-HUM, ho-HUM, ho-HUM, ho-HUM. (To get an idea of its rhythm, sing, “Heigh-**ho**, Heigh-**ho**, it’s **off** to **work** we **go**!”) Make sure that your poem uses words, images, and pacing to convince readers that sharks are wonderful animals.

5. A *cinquain* is a five-line poem. **Write a cinquain about an animal that beats the heat**, following these rules:

Line 1: One word (a noun) names the subject of the verse. (Your first line will be the name of the animal.)

Line 2: Two words (adjectives) describe the subject.

Line 3: Three words (verbs) describe the subject’s actions.

Line 4: Four words give the writer’s opinion of the subject.

Line 5: One word (a noun) offers another name for the subject.



6. Demonstrate why it’s smart for an animal to cool off in the shade.

Put a thermometer on the ground in a sunny spot. Put another on the same kind of surface (grass, pavement, gravel) nearby but in the shade. Wait a few minutes and read the temperatures. What conclusions can you draw? Try testing different kinds of surfaces. Try to decide if an animal will cool off better on grass or on a rock.

THE ENVIRONMENT



1. Using the tune of “Twinkle, Twinkle, Little Star,” **write and sing a song about recycling.**

2. Math can be fun! **Prove it by solving these number puzzles:**

- The average American produces 4.6 pounds of waste per day. If the average life expectancy is 78 years, how much waste does the average American produce in a lifetime?
(Answer: 130,962 pounds, if you don't count leap years.)
- If 120,000 aluminum cans are recycled every minute, how many are recycled in a week?
(Answer: 1,209,600,000.)
- The world's human population is approximately 6.7 billion. If we use 1 trillion plastic bags annually, how many is each person using in a year, on average? Do you think that the average American uses more than the average or less?
(Answer: 149; Americans use about 295 per person per year.)

3. **Set aside an area of your garden** where you can experiment with decomposition times. Bury items that you'd like to compare, such as paper, orange peels, a piece of a milk carton, or a plastic bag. Bury the items in the garden about 4 inches deep. Use craft sticks to mark what you buried where. Every 2 weeks, dig up the item to see whether it has decomposed. Write a science project report about your findings.



4. Resolve to **make something useful out of every piece of your trash** that you possibly can. These ideas may help you to get started:

- ➔ **Make holiday decorations out of Styrofoam cups and meat trays. (Be sure to wash them.)**
- ➔ **Make jewelry out of pull-tabs or bottle caps.**
- ➔ **Make a burglar alarm out of a string of aluminum cans.**
- ➔ **Plant seeds in margarine or yogurt tubs.**
- ➔ **Use plastic lids as Frisbees or under plants.**
- ➔ **Use old sheets and towels as rags for cleaning the car or your bicycle.**
- ➔ **Make a skirt or tote bag out of an old pair of jeans.**
- ➔ **Cut strips from old newspapers or magazines and weave them to make placemats.**
- ➔ **Laminate postcards to use as coasters.**
- ➔ **Clip supermarket “cents off” coupons and organize them by category in used envelopes.**

5. **Prove to yourself that waste is a good source of energy.** Put a thermometer inside a compost pile. How much warmer than the air is the decomposing vegetable matter?

6. Read more about switchgrass as a source of biofuels at Oak Ridge National Laboratory's Web page, "Biofuels from Switchgrass: Greener Energy Pastures," at <http://bioenergy.ornl.gov/papers/misc/switgrs.html>.

7. Learn more about biofuels. Read *Biofuels* by Karen D. Povey (Kidhaven Press, 2006). Try also *Biomass: Fueling Change* by Niki Walker (Crabtree Publishing Company, 2007). Imagine and write a description of a self-sustaining town run entirely on biofuels.

IN THE GARDEN

1. See how much you know about skunk cabbage and other stinky plants on pages 82–85 by **completing our crossword puzzle**. Check your answers at Almanac4kids.com/crossword.

Across

2. A bird that loves skunk cabbage
4. A country where corpse flowers grow
8. A special tall, curved leaf of the eastern skunk cabbage flower
9. What corpse flowers smell like (two words with a space in between)
10. The color of the spathe in a western skunk cabbage

Down

1. The world's largest single flower (three words with spaces in between)
3. An egg-shape spike inside a spathe
5. The kind of roots that skunk cabbage has
6. An area where skunk cabbage might grow
7. A month when skunk cabbage flowers

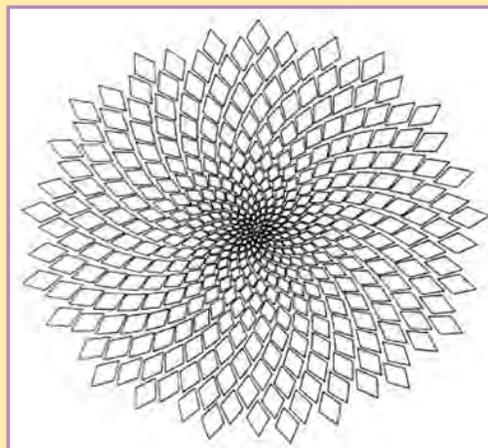


-EclipseCrossword.com



2. You can grow a Venus flytrap, a plant that attracts insects and then eats them! For best results, plant your flytrap in a partially sealed terrarium or glass jar to provide high humidity. Use a soil mixture that contains sphagnum moss and sand. Don't add fertilizer.

3. The Fibonacci series is the sequence of numbers created when each number is added to the one before it, starting with $0 + 1$. The series goes like this: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89 . . . and so on. This series is commonly found in nature. **Look closely at a sunflower and notice how the seeds spiral out from the center.** Beginning at the center, find one spiral and follow it out to the edge. Count the number of seeds while marking the spiral with a black, permanent marker. Record the number. Do the same for other spirals. Are the seed numbers part of the Fibonacci series?



4. Read some of our favorite stories about sunflowers: *Camille and the Sunflowers* by Laurence Anholt (Frances Lincoln, 1999), *Katie and the Sunflowers* by James Mayhew (Orchard Books, 2000), and *Sunflower Sal* by Janet S. Anderson (Albert Whitman, 1997).

5. If you have had an adult help you to **roast some sunflower seeds**, use them as an ingredient in a healthy cereal that you can enjoy for breakfast. Combine some oat flakes and some raisin bran with a few roasted sunflower seeds, a little wheat germ, and a touch of brown sugar. Add some dried fruit if you like. Mix well and enjoy with milk.

6. You can **use beet juice** (from a can of beets) **to test different kinds of detergents and dish soaps for their cleaning power.** Cut some equal-size pieces of white cotton (from an old T-shirt). Soak them in the beet juice for 30 minutes. Dry them in the sun. The beet juice makes a stain in the fabric that is hard to get out. Next, soak the fabric pieces in solutions made from different brands of soap or detergent. Make sure that you use the same amount of water, the same amount of soap, and the same soaking time on all samples before rinsing. When the samples are again dry, arrange them in order from the least to the most stained. Which product was the best stain remover? This makes a great science fair project.



7. Use an uncooked potato to make a block print. Ask an adult to cut a potato in half for you. Use a pencil to scratch a simple design in one of the flat, cut sides. Using a kitchen knife (ask an adult for help if needed), carve away the surface of the potato around your design. Only the raised part(s) of the potato will print. Dip the raised part of the potato into tempera or fabric paints. Press the potato gently onto paper or white cotton muslin. You may have to heat-set your designs on fabric to make the colors permanent. (Ask an adult for help.) Follow the manufacturer's instructions for the paint you use.

8. Make a great beet, walnut, and orange salad for your family's dinner tonight. Drain away the juice from a can of diced beets. Peel an orange and cut it into small pieces. Put the beets and orange pieces into a bowl along with some chopped walnuts and mix thoroughly. Pile onto a bed of lettuce. Drizzle with a little vinegar and oil. Delicious!

9. Make and illustrate your own alphabet book, using the names and pictures of vegetables. A is for asparagus, B is for broccoli, and so on . . . all the way to Z for zucchini. Can you find a vegetable for every letter?

10. Make a drum from a watermelon. Cut the melon in half. Eat the red part and save the rind. Float the rind round side up in a big bowl of water. Hit the rind with a stick or carrot. To make the sound louder, lift an edge of the rind out of the water with one hand while you drum with the other.



11. A loofah acts like a filter. **To demonstrate how, stir some glitter into a little water and pour the mixture through a loofah.** The glitter will stay in the loofah, and the water will come out glitter-free. Try filtering other water mixtures to see what loofah will and won't remove. You might try pepper, small beads, sand, or other materials.

12. Your state probably has an agricultural cooperative extension service associated with a college or university. **Contact the service and request information** about recommended methods for protecting crops from birds, insects, and rodents. You can find contact information at Almanac.com/coopext.

13. Using aluminum foil, Mylar balloons, and aluminum cans, **make a shiny scarecrow** that looks like it's from outer space. Put it in your yard or garden and see if the crows stay away.

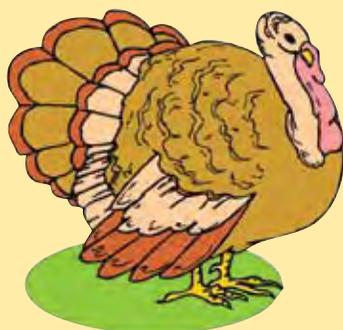
ON THE FARM

1. If you like to sing or play a musical instrument, **get together with your friends and family for a jam session** or sing-along of farm songs. Try such old favorites as "Old MacDonald Had a Farm," "Turkey in the Straw," "Baa, Baa, Black Sheep," or "The Farmer in the Dell." Or write and perform your own farm song about your favorite farm crop or animal.



2. An *ode* is a formal, lyrical poem that praises a person or an object. **Write an "Ode to a Turkey."** Use descriptive terms to convey the turkey's beauty, behavior, or nutritional value.

3. Write and perform a skit titled "A Day on the Farm." Use farm animals (in your custom-made costumes) as your main characters.



4. Make a turkey out of two clean, empty yogurt containers or margarine tubs. Glue or tape the top edges of the containers together to make the turkey's body. (It's fat in the middle when it sits on one of the bottoms.) Draw a turkey face on brown paper and glue it to the top container. Glue or tape brightly colored craft sticks in a fan shape across the back to make the turkey's tail. You can make your turkey as fancy as you like, perhaps gluing on paper feet, beads for eyes, or a balloon for a wattle.

5. Hold an essay contest, using a panel of adults as judges. See which contestant can write the most humorous essay about turkeys. The more specifics and the more laughs, the more likely the essay is to win. Illustrate and publish all of the essays in a book for friends, family, and classmates to share.

6. A riddle is a word game that requires a clever listener to reason or guess an answer, such as “Why are bees always itchy?” Answer: “Because they have hives.”

Make up riddles about bees and put them on index cards. Have friends, family members, or classmates do the same. Then trade the cards and try to guess the answers.

7. A *simile* is a figure of speech in which two unlike things are explicitly compared, usually using the words “like” or “as,” as in “jump like a fish” or “mad as a hornet.” **Brainstorm a list of animal similes** that we use in everyday speech, such as “stubborn as a mule” or “proud as a peacock,” or make up some new ones.

8. Decorate your greeting cards with fingerprint bees. On a scrap of card stock, dab a spot of finger paint. Rub your thumb on the paint spot; get as much paint on your finger as you can. Then press your thumb onto your greeting card. Your thumbprint makes the bee’s body. Now rub your pinky finger in the paint spot. Use your small fingers to print wings on the bee. Once the paint has dried, draw on a bee face and stripes if you want.



9. Here’s a great idea for a science project. **Spray paint small medicine cups** (the kind that come on liquid cold medicines) with Krylon Fusion Paint (it works on plastic). Choose black, white, and several bright colors to turn the cups into “flowers.” While the cups dry, make some “nectar” by dissolving $\frac{1}{4}$ cup of sugar in 1 cup of hot tap water. Set your “flowers” in a row in your garden, and add several drops of “nectar” to each cup. Then sit back and observe. Make a chart showing how many bees land on each color of “flower.” Do they have a color preference?

10. Make a word search puzzle out of these bee terms: apiculture, apis, beekeeper, comb, drone, hive, honey, pollen, queen, and worker. Give your puzzle to a friend to solve.

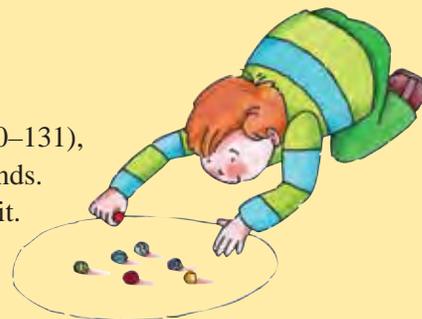


11. Make your own butter. Put some heavy cream in a jar and seal it tightly with a lid. Shake, shake, and shake some more. After about 10 minutes, you’ll see a solid in the jar. This is the butter. The liquid that is left over is the buttermilk. If you start with a clean jar and fresh cream, you can eat your butter and drink your buttermilk.

12. Put some butter on a small plate and set the plate in a warm place until the butter gets soft. Use a spoon or other implement(s) to create your own mini butter sculpture. Put the plate in the freezer until the butter hardens again. Take your sculpture out of the freezer to show it off—then refrigerate before using it at your next meal!

SPORTS

1. Compile a book of records for your “Backyard Olympics” (pages 130–131), keeping track of your “personal best” or the best attained by competing friends. Make a calendar of when each record was set and name the person who set it. Keep updating your record book as new heights are achieved, either by you or by your friends.



2. Write a rhythmic cheer or competition fight song for one of the events in your “Backyard Olympics.”

3. Technology has improved football helmets over the years, making them lighter, stronger, and more comfortable. **Find pictures of football helmets** from the past and make a collage to show how they have changed.

4. Play sports charades. Write the names of different sports on slips of paper and put them in a bowl. Each player draws one slip of paper and acts out the sport for others to guess. Some sports, such as baseball, may be easy. Others, such as water polo, may be hard.

5. Design a logo for members of a real or imaginary sports team to wear on their helmets. You might want to use the team’s city, mascot, or name in your logo. Be sure to use memorable team colors.

6. In youth baseball, the bases are 60 feet apart. If a player throws a baseball from first to second base at 50 miles an hour, how long does it take the baseball to travel to second base?
(Answer: 0.82 second.)

7. Challenge project: This isn’t easy, but it can be done. **Try making a 3-D model of a real soccer ball.** Cut pentagons from black card stock and hexagons from white card stock. You’ll need to measure your pieces carefully so that you can tape them together into a soccer ball shape. This drawing may help you to get started:



8. Pretend that you are Cy Young at different stages in his life—as a boy on the family farm and later on different ball teams (see pages 120–121). Write a day’s entry in your diary for each stage. Try to capture some of the sensory details of the life of this accomplished athlete.

9. Find out who the Cy Young Award winners have been since 1990. On a large map of the United States, mark the cities where the award winners played. Is one part of the country more likely than another to produce an award winner?

10. Pretend that you are a member of the Baseball Writers Association of America. **Write an editorial about your favorite baseball pitcher,** making a case for why you think he should be one of this year’s Cy Young Award winners.

11. Write an illustrated training manual for beginners who want to learn to fish. Be sure to include information about fishing regulations in your state.

12. Write and perform a rap about Cornelia Thurza Crosby (her story, “Hooked on the Outdoors,” begins on page 122).

13. Learn to tie flies. The instructions at <http://zebu.uoregon.edu/~dmason/Mckenzie/flies.html> will help you to get started.

14. Curl up with a good book: Readers in the 4th grade and up will enjoy *Tom Longboat* by Bruce Kidd (Fitzhenry and Whiteside, 2004). For advanced readers, we recommend the biography *Fly Rod Crosby: The Woman Who Marketed Maine* by Julia A. Hunter (Tilbury House, 2000).

15. Using only Styrofoam cups, candy wrappers, craft sticks, glue, and rubber bands, **make a trophy for Tom Longboat**, (whose story is on pages 126–129). Give reasons for your trophy’s size, shape, and design.



PETS

1. Do some creative writing. Write a short story about a small, shy, seemingly defenseless rabbit that becomes a hero.

2. Design a menu for the Rabbit Cafe. Put in dishes made from the foods that rabbits love. Careful! Don’t list anything that’s poisonous.



3. Make your own board game called “Race to the Warren.” On a large sheet of cardboard, draw a windy path, with questions about rabbits written on squares along the path. When players roll the dice, they move their tokens that number of squares and must answer the question that they land on. If they answer wrong, they must go back where they came from. The first player to reach the warren at the end of the path wins.

4. Interview a person who works with an animal on the job. You might talk to a rancher who rides the range on a horse, an emergency worker who finds accident victims using a rescue dog, or a police officer who uses a “sniffer dog.” Or talk to a person who trains companion dogs for the blind. Ask about the person’s experience in working with the animal. Write up a story for your school or community newspaper.

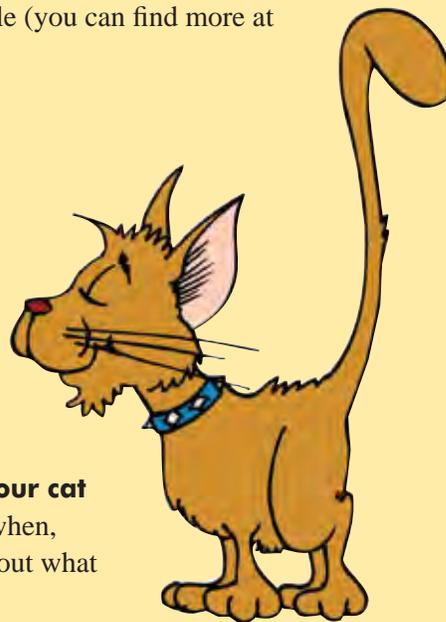
5. Write, edit, and publish an issue of the Fleas’ Daily News. Interview a veterinarian or animal groomer for the front-page story. Report the expert’s opinion about how pets get fleas and how best to get rid of fleas. Write and illustrate “A Day in the Life of a Flea” for your paper’s magazine section. Show flea fashions on the style pages. Don’t forget the flea comics, crossword puzzle, and horoscope.

6. A *limerick* is a five-line poem with a specific rhythm. Here's an example (you can find more at www.brownielocks.com/kidlimericks.html):

*There once was an ape in a zoo
Who looked through the bars and saw YOU.
Do you think it's fair
To give apes a scare?
I think it's a mean thing to do.*

Write a limerick that uses as the first line:
“There once was a flea on a dog . . .”

7. If you have a cat, you can do a science project on purring. **Observe your cat on a regular basis** for at least a month. In your project notebook, note when, where, and for how long your cat purrs. Can you draw any conclusions about what makes your cat purr or how purring benefits your pet?



FOOD

1. Elizabeth Barrett Browning (1806–61) started her famous Sonnet 43 with this line: “How do I love thee? Let me count the ways.” Use that first line to **introduce a list of the reasons why you love chocolate.**



2. The average American eats 12 pounds of chocolate a year. **How many cacao beans is that?**

(Answer: 4,800)

3. Chocolate bars have interesting names, such as Three Musketeers, Snickers, Milky Way, and Almond Joy. **Research these chocolate treats** to find out how they got their names. Then invent your own name for a chocolate bar and explain why you like it—both the candy and the name!

4. Do some colors of M&Ms melt at lower temperatures than others?

Here's how to find out. On a white paper (not Styrofoam) plate, place five tiny drops of glue in a circular pattern. Put a plain (not peanut) M&M chocolate on each drop, one of each of five different colors. Allow the glue to dry. Microwave on high for 20 seconds. Remove and look for cracks or other signs of melting. Record what you see. Continue microwaving 10 seconds at a time, observing after each heating interval. The number of cracks you observe tells you which candy melts first. *Do not touch the candies; they are hot! Do not eat the candies!*

5. Make some quick, easy, individual pizzas: Split and toast an English muffin. Spread some bottled pizza sauce on each muffin half. Top with some grated cheese. Place the muffins in the microwave and cook until the cheese melts, about 30 seconds—if the cheese starts bubbling, stop the microwave and remove. Allow the muffins to cool a bit before eating. Serves 2.

6. Do a survey to see if “What’s Your Pizza Personality?” on page 148 holds true. **Make a questionnaire that asks volunteers to check off their favorite kind of pizza** and the personality phrase that best describes them. Tally your results into a data table. Do the pizza preferences and personal characteristics match those of the people who completed your survey?

7. The largest-ever rectangular pizza measured 129 feet by 98 feet and supported 4,000 pounds of cheese. If you ate a slice of that pizza that was 6 inches square, how much cheese would you get?

(Answer: 0.08 pound, or about 1.3 ounces.)

8. Find or draw pictures of the different kinds of insects mentioned in “Honey, Eat Your Ants!” on pages 150–151. On a large map of the world, pin the pictures to the countries where the insects are favorite foods.



9. Make a squiggly caterpillar to play with. Ask an adult to cut out separate “cup” sections from an egg carton. Turn the “cups” so that they are open side down. String them together with tape. Make one end the head and glue on toothpicks for antennae. Color your caterpillar with paint or markers.

HEALTH

1. Create a sightseeing guide for visitors taking a tour of the outer, middle, and inner ear. Imagine that travelers can actually walk through the ear. Show them—in words and pictures—how the ear is constructed and how it works.



2. Try this hearing exercise. Outside, have a blindfolded volunteer stand at a spot where you’ve tied a string to a tent stake in the ground. Tie a jingle bell to your finger and start backing away while you hold the free end of the string. Ask the listener to raise a hand whenever the bell is heard. When you get so far away that the listener can no longer hear the bell, make a mark on the string. Later, with a yardstick or meter stick, you can measure the string to see how far away you were. Now repeat the same experiment, but this time hold a large sheet of cardboard in front of your finger when you ring the bell, so that it forms a barrier between you and the listener. Mark and measure the string when your listener can no longer hear the bell, as you did before. Average your results over 10 to 20 volunteers, make data tables and graphs, and you’ll end up with a super science fair project. This is only one of the dozens of project ideas you’ll find in *CliffsNotes: Parent’s Crash Course: Elementary School Science Fair Projects* by Faith Hickman Brynie (Wiley, 2005).

3. Learn some signs in American Sign Language.

Practice with your friends until you get good at it.



4. Health remedies aren't the only lotions, potions, and ointments that you can make from grocery store items. You can make beauty products, too. Try these looking-good tips from *Body Drama* author Nancy Redd:

- **If you have dry skin, try putting beaten egg yolk on your face. Leave on until it dries. Rinse off with warm water.**
- **Put cucumber slices over your eyes and relax for 15 minutes to reduce puffiness.**
- **Lighten skin discolorations with lemon juice. Rub a little on the area and leave for 5 minutes. Wash off well. Warning: Never go outdoors in the sunlight with lemon juice on your skin. You could get blisters.**
- **Wash your face with oatmeal or cornmeal mixed with water instead of with soap. The roughness of the meal washes away dead skin cells and softens skin.**
- **Spread honey over your face and leave for 10 minutes. Wash away with warm water. The honey tightens pores as well as expensive facial masks do.**

5. Write and perform with a friend a one-act play that tells the story of Dr. William Beaumont and his patient, Alexis St. Martin. (See pages 158–159.)

6. In *The Physiology of Taste* (1825), Jean-Anthelme Brillat-Savarin wrote, “Tell me what you eat, and I will tell you what you are.” Collect old sayings, maxims, and aphorisms about food and write them on index cards. Post one on your refrigerator each day as “Today’s Food for Thought.”

7. Play anagrams. See how many other words you can make using some or all of the letters in the word *follicle*. With friends, make a list of words related to health and conduct anagram challenges.

8. If you can get a strand of hair that is 12 inches long, you can build a hair hygrometer to measure changes in the humidity of the air. Learn how at www.exploratorium.edu/exploring/hair/hair_activity.html.

9. On a cool, dry day, blow up a balloon. Rub it on your sweater, then hold it close to your hair. What happens? Try to explain the reason.



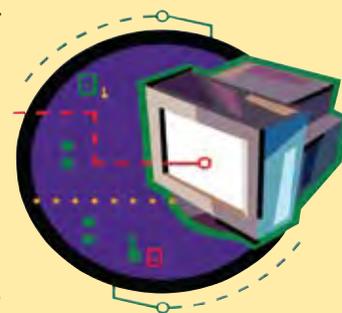
AMUSEMENT

1. Take a lesson from Slowpoke (pages 162–163) and **invent another event for your “Backyard Olympics”** (pages 130–131). In your new event, make sure that the player who clocks the slowest time wins.

2. Documentary filmmakers often use a technique called storyboarding. You can learn how it's done at <http://multimedia.journalism.berkeley.edu/tutorials/reporting/starttofinish/storyboarding/> **Make a series of storyboards** to turn Slowpoke's story into a documentary film.

3. **Draw a comic strip** to tell the story of Philo T. Farnsworth, the kid who invented TV (pages 164–166).

4. **Conduct an interview survey** of your friends and family. Ask your subjects if they think that it's possible to get rich without doing any work. If they answer “yes,” ask them how. Record the responses. How do the answers compare with the list of superstitions on page 167? Can you take any of the ideas you hear seriously?



5. The *English sonnet* is a poem of 14 lines and four stanzas, with the end words in the lines rhyming in this pattern: abab cdcd efef gg. Sonnets are often composed as love poems. **Write a sonnet about Sylvester** (“The Toughest Cowboy,” pages 168–169).

6. **You can get an idea about how Sylvester became a mummy** by using this simple experiment. Cut two slices of about the same size from an apple. Put one in each of two small paper cups. Cover one of the slices with a mixture of $\frac{1}{8}$ cup salt and $\frac{1}{8}$ cup baking soda. Leave the other slice as it is. Put both cups in a dry, dark place for several days. Then dig up the covered slice and compare it with the uncovered one. If you have access to a very accurate scale or balance, you can weigh the slices before and after the experiment to see if their weights change.

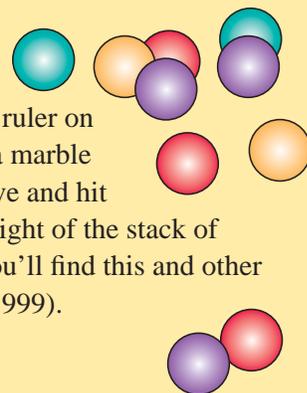
7. Using the tune of “Bah, Bah, Black Sheep,” **write and sing a song that honors Bigfoot** (pages 170–173). Try to include some of Bigfoot's other names in your lyrics.

8. **You can tell a lot about people (and creatures) from the footprints that they leave.**

(This activity gets messy, so do it outdoors.) Put some tempera paint in a paint tray. With your bare foot, step in the paint, shake off the excess, and then step on a sheet of white butcher paper or freezer paper. Have friends and family members do the same . . . and be sure to keep a tub of soapy water nearby for cleanup. When the footprints are dry, let the “artists” sign their names next to their footprints. Use the mural that you've made as decoration for a Sasquatch party at which you serve snow cones in honor of the Abominable Snowman.



9. How much momentum do objects gain as they roll down slopes? You can experiment to find out. Fold an index card in half, then in half again. Get a plastic ruler with a groove or indentation running along the length of its flat top. Place one end of the ruler on a small stack of books. Set the folded card on the table, at the bottom of the ruler. Place a marble at the top of the groove in the ruler. When you let go, the marble will roll down the groove and hit the card, pushing it across the table. Measure how far the card moves. Try making the height of the stack of books higher and lower. Does the slope make a difference in how far the card moves? You'll find this and other fun experiments in *Six-Minute Nature Experiments* by Faith Hickman Brynie (Sterling, 1999).



USEFUL THINGS



1. Make a card game out of the “Animal Families” chart on pages 178–181. Write each of the words in that table on a separate index card. Deal five cards to each player. Turn the remaining cards face down except for one that is face up. The first player can take the face-up card or a card from the face-down pile. The player then discards a card into the face-up pile. Each player continues in that same way until someone gets a winning hand of five matching cards. An example of a winning hand is **Elephant-Bull-Cow-Calf-Herd**.

2. Make a line graph of the data table on page 182, “How Old Is Your Dog?” Put human age on the horizontal axis. Put dog age on the vertical axis. Explain how your graph shows what the article claims—that dog aging slows down after maturity.

3. Get together with friends to **see how many silly phobias you can invent**. Maybe flushophobia is a fear of toilets or fidophobia is a fear of pet dogs. You get the idea.

4. Capture the sparkle of colorful birthstones by making your own suncatcher. Remove the paper backing from a small piece of clear contact paper. Cut little squares of colored tissue paper in birthstone colors that you like. Place them on the sticky side of the contact paper in a nice arrangement. Cover with another sheet of contact paper. Tape your creation to a sunny window, and you'll see beautiful colors shining through.

5. Do you know who all of the possible successors to the President are in our current government? **Go online to find out something about all 18 of them**, from the Vice President to the Secretary of Homeland Security. Are any of them ineligible because they can't meet one of the requirements listed on page 184?

6. Pretend that your friend has been invited to tea with the queen of England. You've been there dozens of times, so you know all of the right moves, but your friend is in a panic. **Write and illustrate a Guide to Etiquette** for your friend to study before heading off to Buckingham Palace.

ABOUT THE AUTHOR

Faith Hickman Brynie is the author of 24 science and health trade books for children and young adults. Some of her books have earned awards from the American Association for the Advancement of Science, the National Science Teachers Association, the Children's Book Council, and the International Reading Association. She holds a Ph.D. in science education (curriculum and instruction) from the University of Colorado, Boulder. A former high school biology teacher and university professor, she also was the first “Scholar in Residence” to serve overseas schools of the U.S. government (for children of embassy personnel, for example). She is a frequent contributor to *ODYSSEY*, a popular science magazine for middle-school children.

