4

Plants, Grasses, and Seeds

Plants come in all shapes, colors, and sizes. Trees are a very big type of plant. This chapter will focus on smaller plants, such as those that produce flowers or cover the ground, such as grasses. We will also discuss seeds—the very small beginnings of every plant. Not all plants are green and leafy. Mushrooms and toadstools are brown and gray. Cacti have needles. Some plants are big and bushy, such as dogwood or holly. Others, such as mosses, are tiny and flat and stay close to the ground. Wherever you look outside, you're likely to see hundreds of different types of plants. Can you name all the plants you see? Getting to know plants and grasses is not only fun, it's smart, too, because not all plants are friendly. It's always a good idea to know whether a plant is safe to touch or eat. Chinaberry and bittersweet are two plants that produce beautiful, brightly colored berries that are often used for decorating. Some parts of these plants are used in medicines, candles, paints, or soaps, but their berries are poisonous and can be very harmful if eaten. Use your nature journal or a notebook to draw pictures of the plants you find on your nature walks. Before you begin, you may want to look at the following books to help you better understand the world of plants:

Plant by Fleur Star. New York: DK, 2005. (Ages 4–8)

Plants We Know by O. Irene Sevrey Miner. Chicago: Children's Press, 1981. (Ages 5–9).

What Plant Is This? by Marcia S. Freeman. Vero Beach, FL: Rourke, 2005. (Ages 9–12)

Once you have sketched a picture and made some notes about a plant that you find in nature, ask a teacher, librarian, or some other adult to help you look it up in an encyclopedia, such as the *American Horticultural Society Encyclopedia of Plants and Flowers*. New York: DK, 2002.

Potpourri

Ages 7 and up

Wouldn't it be nice to bring the fresh fragrance of flowers and plants home with you to enjoy all year long? During the late summer, when flowers and fruits are blooming in gardens and at fruit stands, potpourri is often made to capture the smells and sights of summer. Potpourri is a mixture of spices, dried flowers, and fruits. It can fill a room with a healthy, fresh fragrance. And it's safer for us to breathe and for our environment than canned air sprays.

Materials

Small bowl filled with scented flowers, such as roses, violets, lavender, geraniums, and marigolds.
Cookie sheet
1 cup uniodized salt (available at craft stores and some grocers)*
2 paper towel sheets
1 piece cardboard, $8\frac{1}{2} \times 11$ inches
1 lemon, 1 orange, and 1 apple, thinly sliced
Medium-sized bowl
$\frac{1}{2}$ cup mixed spices, such as cinnamon, nutmeg, and cloves

*Uniodized or noniodized salt is salt that doesn't have iodine added. It is sometimes called sea salt, pickling salt, or natural salt. It can be found alongside regular table salt at many grocers.

1. Gently pull all the petals and leaves off the fresh flowers and place them flat on the cookie sheet.
2. Put the cookie sheet out of direct sunlight. Let the fresh flowers dry.
3. About a day after they begin to dry, sprinkle the cup of uniodized salt on top.
4. Put the two paper towel sheets on the piece of cardboard. Spread the lemon, orange, and apple slices over them.

5. Put this cardboard tray in the sunlight to dry. This may take several sunny days.
6. When the fruit has dried, put it in the bowl. When the flowers have dried, gently shake off the salt, and add the petals and leaves to the bowl of fruit.
7. Add in the spices.
8. Using your hands, gently mix everything together. You can keep your Potpourri in this bowl and enjoy the scents all winter long.

Mushroom Magic

Ages 6 and under

Mushrooms and toadstools are a type of fungus that is part of the plant family. If you pick up a mushroom, underneath you'll find many fleshy little lines called *gills*. The gills help the mushroom or toadstool to send out tons of little spores into the environment. These spores can turn into new mushrooms. They will also turn into art in Mushroom Magic.

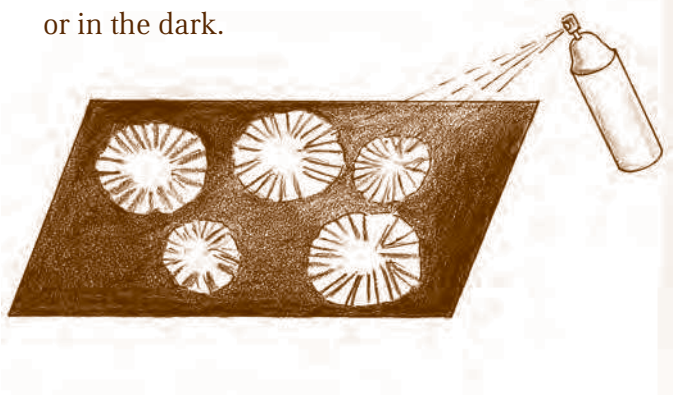
Materials

Gardening gloves
Bag for gathering mushrooms and toadstools
Book on mushrooms and toadstools*
3 sheets old newspaper
1 sheet waxed paper, 24 × 12 inches
1 black or dark-colored piece construction paper or foam board
Glow-in-the-dark paint, available at craft stores, or nail polish
5–6 toadstool or mushroom caps
5 plastic bowls
1 can non-aerosol hairspray or artist's fixative spray (available at craft stores)

**Good Mushrooms and Bad Toadstools* by Allan Fowler. New York: Children's Press, 1998. (Ages 4–8)

1. Put on your gardening gloves. Gather the mushroom or toadstool caps. Be sure to use your book to identify which mushrooms are safe to pick. You may also use store-bought mushrooms that have large heads or caps, such as portabellas.
2. Spread out the newspaper sheets on a table or work surface. Put the sheet of waxed paper on top of the newspaper. Put the dark paper or foam board next to the waxed paper.

3. Pour some of the glow-in-the-dark paint or nail polish on the waxed paper. If you are using nail polish, keep a window open.
4. Take one of your mushrooms or toadstools and gently pull off the stem. Do this slowly so that the head, or cap, does not tear or break. Gently press the cap into the paint or nail polish to act as a sponge. Then put it on the dark paper like a stamp. Do this a few times, but leave space for the other mushroom cap designs.
5. When you are finished, gently lay the other caps on the spaces remaining on the dark paper.
6. Cover the mushroom caps with the bowls. Wait several hours or overnight.
7. When you remove the bowls and caps, you will discover that the caps have released their spores onto the paper in a cool-looking design.
8. Spray the picture with the hairspray or artist's spray to keep the spores in place. Don't get too close while spraying. When the spray dries, you can admire your Mushroom Magic in the light or in the dark.



Plant Painting

Ages 7 and up

It's hard to imagine a world without paint. Just about every store you go to has some type of paint available for sale—paint for houses, paint for artists, and paints that are used in school. Paint hasn't always been around, but color certainly has. Since prehistoric times, people have used plants to color their world. Scientists have discovered that different types of plants were used to create colorful cave drawings. In fact, some plants provide such a strong color that they are still used today in manufacturing paints. An example is the blue from indigo. An easy way to begin to experiment with paints made from things in the natural world is to create a plant painting. This craft will teach you how to mix plants with a base, such as mud, to create different colors. If you want, you can store leftover Plant Paints in small containers, such as baby food jars, to use

All the Colors of the Earth

Thousands of years ago, before there were craft stores and manufactured paints, people looked to the earth for their craft materials. Art on cave walls and colorful masks and clothing were decorated with paints made from crushed seeds, plants, water, oils, and dirt. Nature provides us with many tools for making art, and today the earth still provides us with materials to create paints.

Nature's paints come in all the colors of the earth and every shade you can imagine. You just need to know where to look. You'll find the color for your paints and dyes from clay, fruits, and vegetables. Below is a list of nature paints and the colors each creates. (Warning: When picking materials from the earth for paints and dyes, never put anything you find into your mouth. Many berries and plants, although bright and friendly in color, can be poisonous to animals and people. Be sure you wash your hands completely, with soap and warm water, after picking plants and berries. Keep all of your unused items stored in your earth art kit, away from pets and younger brothers and sisters.)

Nature's Paint

Color	*Nature's Paint*
Red	Crushed beets Cranberries Dogwood bark
Yellow and Gold	Onionskins Goldenrod stems Marigold petals Crushed dandelion flowers
Black	Crushed charcoal Hickory bark
Blue	Sunflower seeds Alfalfa flowers Indigo leaves

1. To prepare colors from plant leaves and bark, you have to soak the plant skins, leaves, seeds, flowers, or bark in very hot water overnight or even for several days. Cranberries and beets should be peeled and cut up into small pieces, then boiled in hot water for color. Please ask an adult to help you. Never heat water or use a knife by yourself!
2. Use the colored water that is left over for your Nature's Paints. Colored water can be stored in a baby food or jelly jar for up to a month.
3. When using charcoal, crush the piece of charcoal with a rock or by using your foot. The small pieces can be stored in a jar to use in plant painting.

Remember to add new colors and ingredients to your Nature's Paints as you discover them. As you learn and explore more about nature, you will also learn new ways of using nature to make art and crafts.

later. If your paints become dry, just add a little more water and mix well.

Adult supervision required

Materials

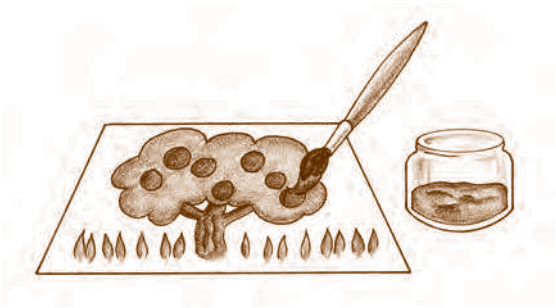
Scoop of dirt or clay, about the size of your fist
Metal spoon with strong handle
1 cup water
Several small sturdy cups, one for each color of paint you make (glass, ceramic, or heavy plastic cups work best)
Nature's Paints, 1 cup ingredients for each different color you choose (for example, 1 cup cranberries to make red paint)
1 sheet paper, 8½ × 11 inches
Paintbrush

1. Using your metal spoon, collect some dirt or clay, about the size of your fist, and put it into one of your nature paint containers.
2. Pour in half of the cup of water and blend until the mixture turns into smooth mud. You may need to add more water until the mixture is smooth like thick paint. This will be the base for your paints. Now you need to add color.
3. Using your spoon, put a little bit of mud in another cup. Add one of your Nature's Paint colors, such as the colored water from the cranberries. Start with ¼ cup of your Nature's Paint ingredients. Slowly add more if you want the color brighter. Stir the mixture until all of the Nature's Paint ingredients are blended. Mix well. If necessary, add a little more water so that your paint is smooth.

4. After you have mixed all the colors you want, use your paintbrush to create a painting on your paper. You may want to draw a picture of a tree or a colorful bouquet of flowers. Perhaps you will choose to use charcoal-colored paint and draw a penguin or zebra. Your painting will not only have the most amazing colors, but when

the mud-based paints dry, it will have a unique texture.

Be sure to let your Plant Painting dry completely before you hang it up on the wall.



Earth Dye T-Shirt

Ages 6 and under

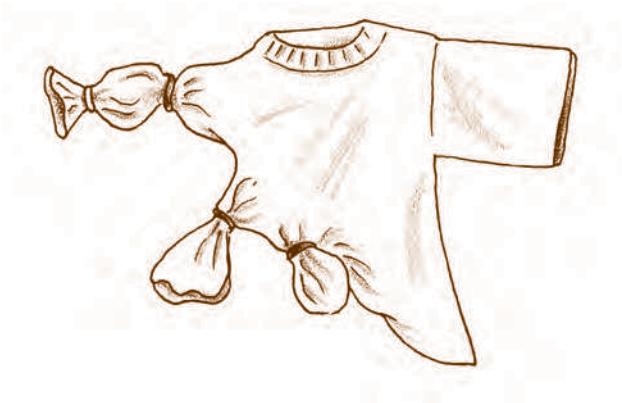
Plants have been used not only to create paints, but also to create dyes to color fabrics and other items. Native Americans, Europeans, and early American pioneers all used plants to dye skins, fabric, wool, and thread for sewing. Although mixing and matching plants could create every color of the rainbow, some colors were easier to create than others. Browns, reds, and yellows were more common because many plants, when boiled, will turn these shades. But purples and blues, especially bright colors, were often harder and more time-consuming to create, so fabrics and threads made from these plants had more value. You can experiment with dyes and see what colors are easy to make from the plants you find where you live. Then you can show off the colors of the earth by wearing them on a T-shirt. Now that you know what colors different plants and vegetables make, you can put them together to make a colorful Earth Dye T-Shirt.

Adult supervision required

Materials

5 sheets old newspaper
Spoon
3 small containers, such as plastic cups or baby food jars
Collection of berries and flowers for dye colors (see Plant Painting activity above)
Water
Plastic tub or cookie sheet
1 cotton T-shirt, white
10 or more rubber bands
Rubber gloves

1. Cover your workspace or tabletop with a few sheets of newspaper.
2. Line your tub or cookie sheet with the remaining newspapers. Set it on top of the newspaper covering your workspace.
3. Grab a section of your T-shirt and squeeze your hand around it in a fist. Put a rubber band around the T-shirt section at the base of your fist. Do this all over your T-shirt so that it looks like it has a bunch of puffy cloth sections sticking out of rubber bands. Some sections of the shirt can have two sets of rubber bands for double color. (See below for instructions on how to make double colors.)
4. Put on your rubber gloves. Prepare several containers filled with different dye colors. Follow the directions on page 70 for Nature's Paints.
5. One at a time, slowly put each rubber-banded section of your T-shirt into a jar of color. Hold it there for a few minutes until you see the T-shirt turn color. Then remove it and let it dry. Meanwhile, put place another section of your T-shirt in the color. You can use several different colors if you like!
6. For the sections that have a double rubber band, you can double dip the tip of that section into a different color. This will create a new color. Red and yellow will make orange; blue and yellow will make green; blue and red will make purple. A mixture of many colors will make a brown or black. What other colors can you make?
7. When you are done dipping, put your T-shirt in the newspaper-lined tub or on a cookie sheet. Do not remove the rubber bands yet.
8. Using the spoon, carefully pour a little more of the dye colors on sections of the rubber-banded T-shirt. If you put the same color dye over the same color, it will make the color brighter. But if you mix colors, a new color will appear. You can mix and match your colors any way you like.
9. Let your T-shirt dry for at least 5 hours before removing the rubber bands. Then spread it flat to dry overnight before wearing.
10. Don't forget to hand wash your shirt or wash it separately in the washing machine. Otherwise your colors may bleed onto other clothing. In addition, always wash your Earth Dye T-Shirt in cold water to keep the colors from fading.



Color and Print Eggs

Ages 7 and up

Eggs can be colored with many different colors by boiling them in hot water along with various plants and vegetables. For example, if you want to color your egg gold, you can boil it with yellow onionskins. If you would like to dye your egg red, cut up a beet and put it in the pot instead. Dark leafy greens, such as spinach, will make your egg appear a green color when they are boiled together. (Remember: Never boil water without an adult's supervision.) There are many possibilities for your Color and Print Eggs.

Adult supervision required

Materials

12 eggs
Needle
Bowl
Towel
Cooking pot filled with water
One onion peeled, small carrots cut up, or a can of red beets
Scissors
3 printed paper napkins
Comic strips from newspapers
Handful leaves
Handful grasses
Craft glue or homemade Natural Glue, p. xiv
1 small bowl water
Rag

1. You can decorate your eggs hardboiled or you can empty the shells first. If you want to use napkin and comic book design decorations, it is best to use an eggshell that has been blown empty. An eggshell that has been blown empty no longer contains the liquids inside. An adult can help you by poking a hole in both ends of the eggshell with a needle and blowing the

inside of the egg into a bowl. Save the inside of the eggs for cooking or other craft projects.

2. Wash the eggshell thoroughly and carefully by holding it under running water. Let it dry on a towel.
3. You can color the empty shell in water using nature's own colors. Boil the water with the onionskins, red beets, or carrots, depending on which color you would like. Once the water has turned color, remove pot from heat. Put the empty eggshell in the hot water and let it soak for at least an hour.

   If you want to color hardboiled eggs, put your egg inside the pot of water along with the nature colors you've chosen. Boil them together. The egg will naturally turn the color you choose. Let the egg dry well by placing it on top of a towel and setting it in a warm or sunny spot.
4. Cut out a design from a printed napkin or comic strip. You can also use grasses or leaves for your print if you want the eggs to look more natural.
5. Put plenty of glue on the back of the item you want to stick to the egg.
6. Press the print pattern, leaf, or grass onto the egg and smooth it down. Any excess glue should be picked up with your fingers and gently smeared back over the design. A bit of water may make the glue press more smoothly.
7. Continue to smooth your fingers over the picture until it sticks. Let dry overnight. When you are finished, the Color and Print Eggs should be displayed in a basket or bowl. Or, if you wish, string the empty shells and hang them on a tree.

Nature Notes

Greenhouse Goodness!

An *ecosystem* is a part of nature that can function by itself, creating its own water, food, and air. A small window box filled with different types of plants and insects is an ecosystem. So is a greenhouse, made of glass, with a lot of plants inside. In the 1700s, families in many northern countries built greenhouses to protect and grow warm-weather plants all year long. These greenhouses made their homes more beautiful and inviting. Sitting in a warm room filled with bright green and colorful plants and flowers made the cold winters and rainy seasons seem less harsh. Many greenhouses were used to grow orange and lemon trees. Greenhouses of this kind are called orangeries. They were very popular because they allowed people to have warm-weather fruits all year long. Greenhouses were not only an important source for fruits and beautiful plants. They were also a great place for learning and sharing knowledge of plant life. Soon local governments saw the importance of building large greenhouses for public use. These are called *conservatories.* Many are still open to the public today. The Phipps Conservatory and Botanical Gardens in Pittsburgh, Pennsylvania (www.phipps.conservatory.org), Chicago Botanic Gardens in Glencoe, Illinois (www.chicagobotanic.org), Garfield Park Conservatory, Chicago, Illinois (www.garfield-conservatory.org), Huntington Botanical Gardens in San Marino, California (www.huntington.org), and the United States Botanic Garden in Washington, DC (www.usbg.gov), all host very large conservatories where people can view unique and rare plants from all over the world. Conservatories are great places to learn about plants, trees, and natural life no matter what the weather is like outside!

24-Hour Terrarium

Ages 7 and up

Much like a very small greenhouse, a *terrarium* is a tiny little garden that grows inside a jar or glass container. This tiny world is sometimes referred to as an ecosystem. A terrarium is special because it grows all year long, no matter what the weather is like. Even if it is raining, snowing, or very dry and hot outside, the terrarium will grow. A terrarium is also special because it is a living world of soil, plants, and sometimes insects and animals, all in a small container that you can keep in your bedroom or any room that has plenty of sunlight. But one of the best things about a terrarium is that it is a living, breathing, tiny world that you create all by yourself. This 24-Hour Terrarium will need sunlight for growth. Instead of the moon or stars to shine light on your ecosystem at night, your 24-Hour Terrarium will glow in the dark, lighting your garden at all hours of the day.

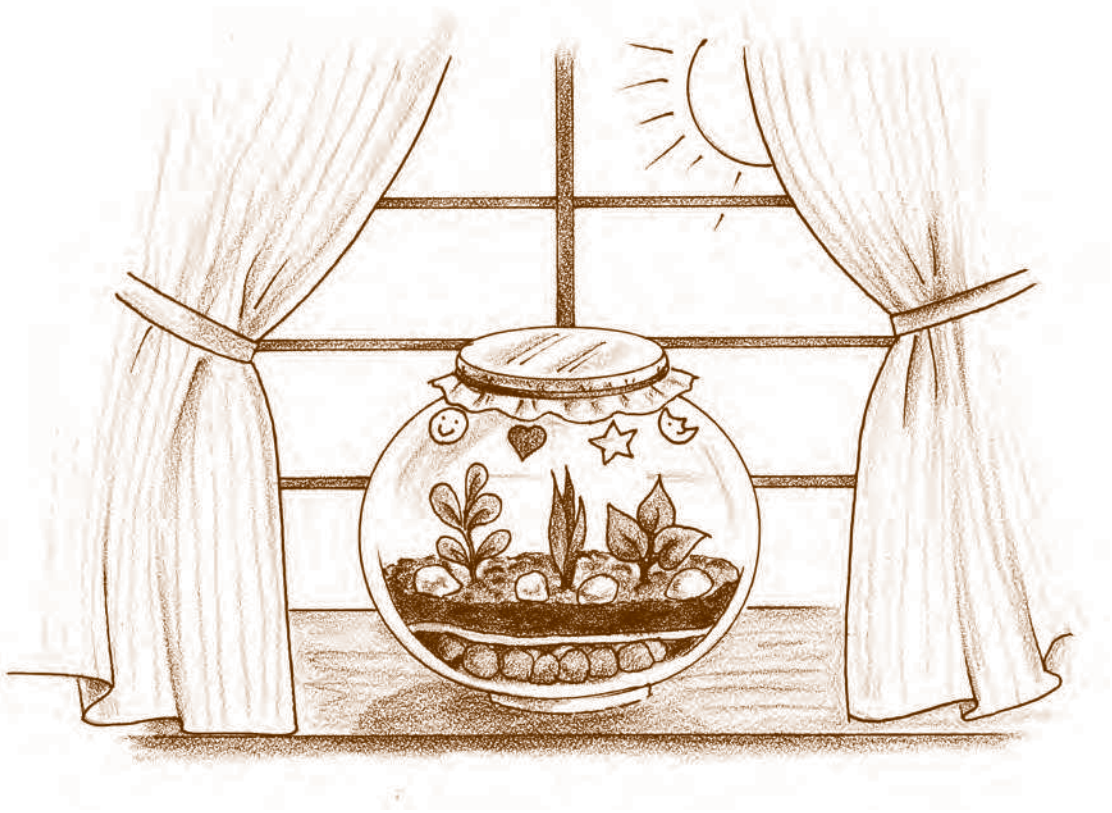
Materials

Clear glass container, such as a candy jar or fishbowl with a large opening at the top (large enough to fit your hand through)
1 drop dishwashing soap and water
Dry towel
Old newspaper
4–5 light colored stones that can easily fit through the opening of the glass jar
Glow-in-the-dark paint or fingernail polish
4–5 pieces of charcoal or a handful of gravel, pebbles, or marbles
1 piece nylon stocking or cheesecloth, large enough to cover bottom of container
Bag potting soil
Slightly damp rag
Very small plants, such as a tiny fern, dwarf creeping fig, polka dot plant, clover, inch plant, or any small plant that will not grow larger than your jar (available outside, purchased at a nursery, or started by you with seeds)
4–6 glow-in-the-dark stickers, small
1/4 cup of water
1 piece clear plastic wrap, twice the size of the opening of your jar
Large rubber band

1. Wash your glass container and dry it well. Open the windows in your kitchen or bathroom, or go outside so that the nail polish fumes will not bother you.
2. Spread your newspaper on a flat surface and paint your stones using the glow-in-the-dark paint or nail polish. Paint one side of each stone. Once the stones are dry, turn them over and paint the other side. Do this until you've covered the stones with two or three coats. When you finish, let them dry for at least 24 hours before continuing.
3. Put the charcoal or a handful of gravel, pebbles, or marbles in the bottom of your glass container.
4. Put the nylon stocking or cheesecloth on top of the charcoal. This nylon barrier will prevent the soil from dropping to the bottom of the container and mixing with the charcoal, clogging your plants' drainage systems.
5. Now it is time to add the potting soil into your container, on top of the nylon stocking. This will create a soil bed for your plants. Make a nice thick bed for your plants, but don't fill your entire jar with soil. Fill your jar a quarter of the way up. Usually 1–2 cups of soil is plenty. Carefully put the soil in the middle of the jar and spread it around. This will prevent you from get-

ting soil on the sides of the glass container. (If you do, you can easily wipe it down with the damp rag.)

6. Using your fingers, dig little holes in the soil bed to place your plant roots or seeds. Very carefully put a plant inside each hole. Be sure to space the plants at least 2 inches apart. This may mean that you can only put one or two plants in your terrarium. But remember, they will grow and fill your terrarium with color.



7. Carefully add more soil. Press it down firmly around each plant to eliminate air pockets near the roots.
8. Put your painted stones inside your container.
9. Put your glow-in-the-dark stickers on the inside rim of your jar opening.
10. Add some water to the soil, but don't add too much. If your soil is already very moist, you won't need any water. Your soil is moist if it sticks together when you pinch some of it between your fingers.
11. Cover the opening of the container with a sheet of the clear plastic wrap. Secure it tightly with your rubber band. You may need an adult or a second set of hands to help you hold the plastic covering while you place your rubber band around the opening. Set your magical garden in a sunny spot like a windowsill or on a table near the sunlight. Now it's time to watch your 24-Hour Terrarium grow and glow in the dark. Remember, even when it's very cold and most of the plants and animals have gone underground to live, you can admire the beautiful green world that you have created yourself.

Sparkling Braided Baskets

Ages 7 and up

Baskets have been used for thousands of years to carry things from one place to another, store stuff, and even as baby beds. Baskets are often made from dried grasses and rushes. These grasses are special because they are strong and dry and do not wilt when removed from their roots. Making Sparkling Braided Baskets is a smart way to put art to use. When you have finished covering your basket, it will be sturdy enough to carry and store things. It will be pretty enough to display or give as a gift.

Materials

Spool silver or gold metallic ribbon
Scissors
40 or more pieces of thick grasses, such as ribbon, cord, or elephant grass, at least 20 inches in length (long enough to stretch around the width of your wire basket with at least 5–10 inches to spare). You may need to tie ends of the grasses together to make longer strips.

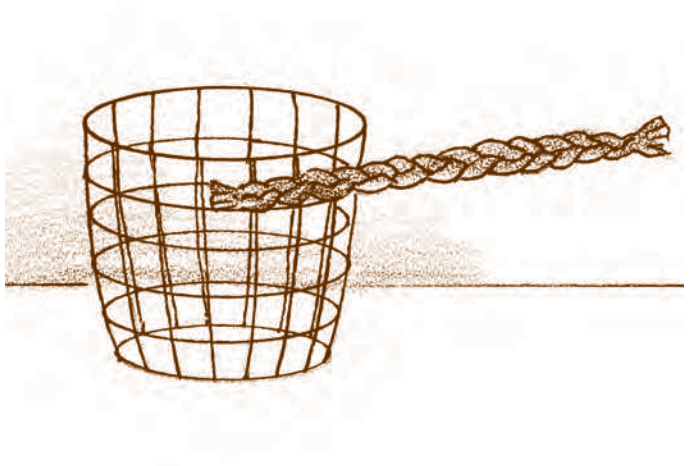
Nature Notes

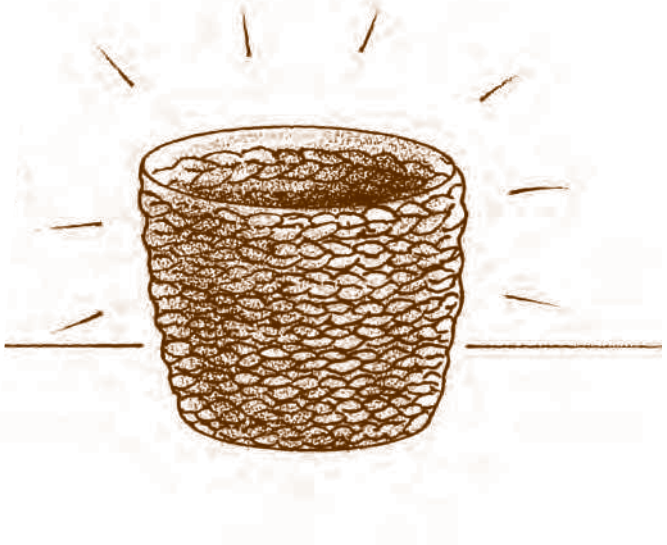
Grass for Dinner

Grasses are an excellent resource for building materials. Thatched roofs, woven baskets, and even some clothing are made from grasses. Grasses also produce flowers. Grass flowers don't have brightly colored petals, as do roses or daisies, but they do have little tufts of soft seeds that blossom at their tops. We eat many of these grasses and their flowers everyday. Rice, oats, wheat, sugar, and corn are just some of the food products made from grassy plants. In fact, about half of the people in the world depend on rice for a major part of their everyday dinners. Animals also love to eat grass. Goats, sheep, and cows all graze on farms covered with green grass. Pigs, birds, and squirrels love the grass that grows into corn. Horses and donkeys eat a lot of oats. Pandas also eat a type of grass called bamboo. Bamboo is big, sturdy, and tall; sometimes it's called a tree, but bamboo is really a type of grass. Bamboo is used to make many things, such as bridges, furniture, wood floors, and musical instruments. All types of creatures and people look forward to grass for dinner!

Wire basket frame, found at local craft stores, or you can use a plastic fruit basket from the grocery store

1. Cut several lengths of ribbon into strips the same length as your grasses.
2. Braid together two pieces of grass and one ribbon. To braid the three strips, tie three ends together into a knot. Lay them flat in front of you so that you have three strips running toward you and the knot away from you. Cross the right strip over the center. Then cross the left strip over the new center-most grass. Pull them out to the sides so that the braid becomes tight. Repeat, crossing the right strip over the center, then the left over the center, until you reach the bottom. Tie a knot at the end to keep your braid in place. Repeat this step until you have at least 20 tightly braided strips.
3. Weave the sparkling braided strips over and under the wire frame of the basket.
4. When you finish threading each braided strip around the basket, tightly tie the two ends of the strip together. Repeat this step until the entire wire basket is covered with sparkling braided strips. You may also need to weave through the handle, if your Sparkling Braided Basket has one.





Grass Wraps

Ages 6 and under

Teaching others about our earth is a big part of what you are doing by making art and craft projects from earth materials. When you share some of your art as a gift, it shows that you care about this person and about the earth. Grass Wraps are a great way to share your artwork with everyone you know.

Materials

3–5 seed heads or flowers of grasses (These are the fluffy ends that pop up in the summer.)
Acrylic paint, Nature's Paints, p. 70, or Cornstarch Paint, p. xv
1 sheet construction paper or used office paper, any size
Mod Podge, matte (for a more natural look) or either gloss or sparkle (for a shine)–the choice is yours
Small plastic tub or jar
Small paintbrush
1 cup short grass
Several long strands ribbon grass or ornamental grass

1. Dip the heads of the grass into the acrylic paint. Gently press them all over the paper to make cool-looking imprints.
2. Let the paint dry.
3. Take your Mod Podge and pour a little into the tub or jar.
4. With the paintbrush, put the Mod Podge on the paper and glue on pieces of grass. Glue the grass in any design all over the paper. You can go in between the grass head prints or do a crosshatch design all over. Anything can be art!
5. Press the grass firmly in place. With the paintbrush, add more Mod Podge over the top of the grass to seal it to the paper. Let it dry completely.
6. When the paper, grass, and paint are completely dry, you can use it as gift wrap.
7. Instead of a bow, use the long ribbon grass or ornamental grass to tie up your Grass Wrap.

Natural Wind Sock

Ages 7 and up

Wind socks are used to determine the direction of the wind. The sock points in the same direction the wind is blowing. Wind socks

are typically made out of fabrics and metals and can take some time to mold and sew. Here is an easy Natural Wind Sock made from natural materials. It works well and looks great when the wind begins to blow.

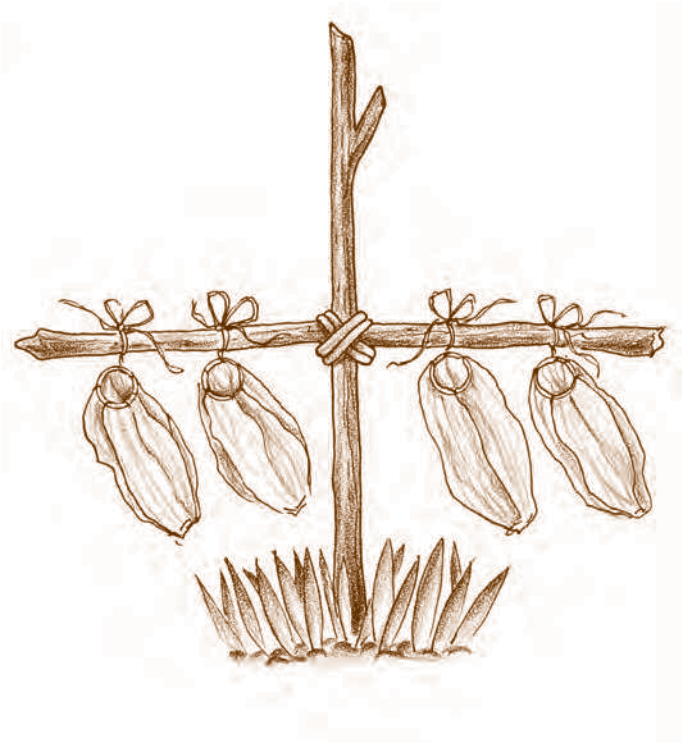
Materials

12 husks from corncobs (A husk is the green leafy part on the outside of the ear of corn. You'll get 3–5 husks from each ear of corn.)
4 plastic milk jug rings
Rubber cement
20 strands raffia or dried grasses, each at least 8 inches long
1 piece twine, 12 inches long
2 twigs

1. Start by attaching the ends of three corn husks to a plastic milk jug ring. Do so by putting rubber cement on an inch of the corn husk and wrapping it around the ring. You should space the husks evenly, making sure that there is at least 6 inches of husk hanging down.
2. In between each corn husk, tie one end of a piece of raffia or dried grass.
3. Take a new piece of raffia and wrap it around the loose ends of the cornhusks, raffia, or grass. Tie the new piece of raffia in a knot. When you are done, all the loose ends of the husks, grass, and raffia will now be tied together by the raffia. Do this for all four rings of husks.
4. Using the twine, secure the two twigs together in the shape of a cross. To do so, lay one twig flat on your workspace so that the end points toward you. Lay another twig on top of it to make a cross. Pick up the twigs by pinching and holding them together at the point where they meet. Using a new piece of raffia, wrap it around the point where the twigs meet. Continue wrapping the raffia very tightly around and around in all directions, but do not tie your fingers to the twigs! When you have finished wrapping the twigs, they should hold together on their own. Tie a tight knot with the two loose ends of the raffia. The twig running side to side is your crossbar. The one running up and down is your post.
5. You'll need to wrap all the twine around the point where the two twigs meet. You may want to put a little of the rubber cement over this so that it will dry securely. Let it dry completely.
6. Using the remaining raffia, tie each cornhusk ring onto the cross twig, two on each side of the post twig. It's fine if extra raffia dangles from the

ties; it will add to the artistry of the wind sock when it blows. Each of the rings should dangle loosely from the crossbar twig.

7. Stake the upright twig in the ground, perhaps in a garden, about a few inches deep. The ends of the husks should not touch the ground. When the wind blows, the little cornhusks of your Natural Wind Sock will twirl, wiggle, and float in the same direction.



Grass Masks

Ages 6 and under

Ancient people made masks of grasses and clay to celebrate holidays and ceremonies. Many of these ancient masks now hang in museums or decorate the homes of collectors. These Grass Masks are fun to create and make cool costumes to wear when you put on a play or go trick-or-treating. You can also hang your masks on the wall as art.

Materials

Bag for collecting grass
1 paper grocery bag for every mask you want to make
Scissors
Box of colored markers or crayons
Other nature-made items, such as bark or leaves
Decorative items, such as yarn, fabric scraps, or cardboard tubes
Craft glue or homemade Natural Glue, p. xiv

1. Use your collecting bag to gather enough grass to cover one side of a paper grocery bag. Make

sure the grass is dry. If it is not, spread it out in a sunny spot and let it dry for several hours.

2. Cut about 6 inches off the opened end of the grocery bag. The part of the bag that remains will be your mask.
3. Lay the bag flat on your workspace with the closed end away from you.
4. Draw two circles for eyes; also draw a nose and mouth. Cut them out with the scissors.
5. Decorate the face by gluing strips of grass placed in all different directions. Try to cover the entire face. You may also use the bark, leaves, yarn, and other materials.
6. The hair can be added by gluing strips of grass to the top of the bag. Glue one end down to the top of the closed bag. If you use short grass, you will want to glue more, but only one end, about an inch of it, to the bag. The other part of the grass can flow downward or stick out like spiky hair.
7. If you want to pretend that your Grass Mask has a powdered wig or curlers in the hair, you can glue some tissue tubes to the top. You may also want to braid some of the grasses before you glue them to the top for hair.

Cattail Planter

Ages 6 and under

Cattails are a grass that grows on the banks of ponds and streams. In late summer they produce brown fuzzy seedpods that feel soft like the tail of a cat. Put several of these pods together in a Cattail Planter. The rich brown color looks like velvet.

Adult supervision required

Materials

Bag for collecting
15–20 cattails
Scissors
Hairspray
3 sheets old newspaper
Plastic or glass tub or pot, 4–5 inches tall
Rubber cement

1. Take your collecting bag and walk by a stream or pond in search of cattails. Remember to take an adult with you. (Never go near a body of water by yourself.)
2. Ask the adult to help you snip off 15–20 cattails with your scissors. Tell the adult to cut the cattails just below the fuzzy part. Cattails are a hardy plant that grows in moist areas. Spray lightly with hairspray to keep the seeds from floating off.
3. Cover your table or work area with the sheets of newspaper.
4. Place a strip of rubber cement on your plastic tub running upward and downward on the side.

Nature Notes

Smart Seeds

A seed is the beginning of life for a plant, flower, and tree. But plants and trees grow everywhere, not just next to the plant where the seeds come from. Seeds go everywhere, so plants and trees can grow in new places and sprout more seeds. How do they do that? Think of a dandelion. When you blow on the white fluffy heads, just as the wind does, those tiny seeds float off to grow in new places. Seeds from maples and sycamore trees have little brown wings that help them fly far away. Another way seeds travel places is by being carried by people, insects, and animals. Think about the seeds in an apple. An apple you buy in a market is far from the tree from which it was picked. Once you finish your apple, you throw away the core and seeds. Wherever they land, a new apple tree can grow!

5. Stick a fuzzy cattail to the pot and hold it in place. Do this until the entire pot or tub is covered with cattails. Let dry. When your Cattail Planter is finished, you can put a plant inside or fill it with water and float flowers or candles in it to make a table centerpiece.

Seed Starter

Ages 6 and under

Another way seeds travel to new places is by sticking to animal fur and human clothing. A simple way to learn about how seeds travel and what types of plants grow from seeds is to make a Seed Starter.

Materials

1 white cotton sock, clean
1 sheet old newspaper
1 string, at least 5 feet long
Clear glass jar
½ cup of water
Measuring spoon
3 tablespoons vegetable oil
5 drops food coloring
Spoons

1. Crumple one sheet of newspaper and stuff into the cotton sock.
2. Tie the open end of the sock closed using one end of the string.
3. Take your sock on a nature walk through a meadow, field, or forest on a summer day.
4. Pull the sock by the end of the string and let it drag along the ground. When you are done, your sock will be filled with bits of soil, grasses, and plenty of sticky seeds.
5. Bring your sock home. Carry it carefully so that the seeds do not fall off.
6. Mix the vegetable oil, water, and food coloring together. The oil will separate from the water in beads, but the water will turn colors.
7. Pour about an inch of this mixture into your clear glass jar.
8. Stuff your newspaper-filled sock into the jar and watch the water press up along the sides of the glass. After a few days, the seeds stuck to the sock will soon start to sprout up and around the oil and through the colored water.
9. Be sure to keep the sock moist by adding water at least once a week. Put your jar in a sunny spot. You can watch the seeds grow through the glass of your Seed Starter. Try to identify what plants will grow from the different seeds.

Tiny Seed House

Ages 7 and up

This little treasure, covered with the seeds of vegetables and trees, can be used as a dollhouse or hung in a tree to feed birds, squirrels, and other critters. The design is simple to do. You may want to add your own creative talent to make a bigger Tiny Seed House or one that has a chimney.

Materials

30 wooden craft sticks*
Craft glue or homemade Natural Glue, p. xiv
8 pieces twine, each 8 inches long
30 or more small pinecones, about 5 inches in length in the shape of a carrot
Scissors
Rubber cement
1 piece thick cardboard, 4 × 8 inches, or throwaway metal cookie sheet (an option for use in all types of weather)
1 bag soup beans or assorted seeds

*Twigs that lie flat may be used, but you will need to use rubber cement in place of the craft glue.

1. Build your frame. You'll need six craft sticks for each wall and six for the floor. Glue four sticks together to form a square. Glue one running up the middle of your square and one running across the middle.
2. Let all four walls and floor dry well.
3. Build your house. Starting with two walls, stand them so that they meet along the edge. Using the twine, strap the two corners together at the top and the bottom by wrapping the twine around the sticks. You may want to ask someone to hold

the walls while you wrap the twine together. Do this for each wall. Then tie them on the floor.

4. When you are done, you should have a box made from craft sticks (without a top).
5. Put a strip of glue where the edges meet so that your box will hold firmly together. Let this dry.
6. Add the walls. Spreading rubber cement along the outside of the craft sticks, glue as many pinecones as will fit on each wall.
7. Cut one pinecone in half. Put the two halves in the middle so that you will have a door to your house. If you want, you can do this for each side so that the house will have many doors or windows.
8. Continue to glue pinecones until the entire box is covered, including the bottom.
9. Add the roof. Bend the piece of cardboard or metal cookie sheet in half. Then open it up so that it stands in the shape of a triangle.
10. Glue this to the roof of the box by running craft glue along the edges of the sticks. Set the cardboard on top.
11. Using craft glue, cover the entire roof with the beans or seeds and let dry. Your Tiny Seed House is ready to be displayed as art or put outside for wildlife to use.

Treasure Box

Ages 6 and under

Have you ever seen seed art or a seed mosaic? A mosaic is a type of art in which small pieces of things, such as tile or glass, are grouped together to form a picture or an interesting design. Mosaic art can be found on the walls and floors of modern buildings. Ancient cultures created mosaics from stones and tiles to decorate buildings and temples. Today many museums, churches, and government buildings still have mosaic-tiled floors. Seeds can also be used to make a

mosaic picture. This Treasure Box will use different-colored seeds and beans to decorate a mosaic box of treasures.

Materials

Black marker
Plastic diaper wipes box
Mosaic tile adhesive
1 wooden craft stick
Large bowl filled with dried beans and seeds, different colors

1. With the black marker, draw a design on the top and sides of the diaper wipes box. Trace out the pattern first with pencil. You can draw a picture of a flower, a cat, or anything else you like. You can also draw a pattern instead of an object or animal.
2. Squirt some of the mosaic tile adhesive onto one side of the box in the shape of the pattern or design you created. Spread it out with the craft stick if necessary.
3. Fill in the design with the beans and seeds. Do this by placing them, one by one, onto the mosaic tile adhesive.
4. Continue to glue down the beans and seeds until the whole top is covered. Let dry before moving on to the next side. Be sure to leave the space near the opening uncovered so that the box can be opened and closed easily without disturbing your artwork.
5. When all sides of your box are decorated with seeds, let it dry completely. Your Treasure Box will look very much like the treasure chests found by pirates on the high seas. You can display it as art and store your treasures inside.

Earth Action

Anchors Aweigh

An anchor is something strong that holds an object in place. A boat has an anchor. When it is tossed into the water, the heavy anchor sinks to the bottom and keeps the boat firmly in place. Grasses and plants are anchors, too. They have strong roots that grow into the ground and keep soil and sand in place. People put plants and grass in the ground to protect soil and sand from washing away. Plants and grasses also keep things safe and warm. They hide animals and insects from their enemies. They protect a house against the cold winds. Grassy areas and meadows are where many animals make their home. Insects, small reptiles, and rodents also rely on grassy areas to give them a safe and dry home. When new homes, buildings, or parks are built, grassy areas are cut down or destroyed, causing wildlife, such as the Karner blue butterfly and the prairie dog, to lose their homes. But many organizations are working hard to save grasslands and meadows so that wildlife that live in these grassy places can survive. Some of the organizations hard at work to save grasslands, plants, and wildlife are the Nature Conservancy (www.nature.org), the Buffalo National Grasslands Visitor Center in Wall, South Dakota (www.trailsand grasslands.org/grland.html), and the United States Forest Service (www.fs.fed.us). They work with volunteers and private organizations to increase the size of existing grasslands and halt building around these protected areas so that wildlife are not harmed or forced to leave. They also harvest seeds to grow more abundant plants in and around grasslands and to stop the spread of harmful species of plants and wildlife that may invade.

You may have already seen some of these organizations at work in your neighborhood. Signs that say *Do Not Mow* are put in places where butterflies are feeding and laying eggs, or snakes are hiding from the hot summer sun. You may also have observed prairie homes being built. Prairie homes are easy to spot because of the plants growing up around them. Prairie home neighborhoods are areas where people do not mow their grass but instead let it grow tall so that wildlife can live and grow there. These neighborhoods are called conservation communities. The families who live there help to protect nature and grow new plants and trees so that wildlife can stay in their habitats for years to come.