

CELEBRATING WILDFLOWERS LEARNING PROGRAM



DEVELOPED BY:

U.S. FOREST SERVICE – INTERMOUNTAIN REGION
RED BUTTE GARDEN, UNIVERSITY OF UTAH



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#1 CELEBRATE WILDFLOWERS THROUGH ART

CONTENT	Celebrate Wildflowers Poster Competition.
GRADE LEVEL	K-6
OBJECTIVES	To hold a Celebrate Wildflowers Poster Competition in your school and submit winning entries to the United States Forest Service Intermountain Region Competition.
PROCESS AND RESEARCH SKILLS	Creativity, comprehension, planning, organizing.
PRODUCT	Your school's entries for the United States Forest Service Intermountain Region Poster Competition, Celebrate Wildflowers.
SUGGESTED LOCATION	In the classroom and hallways of your school.
TIME REQUIRED	Four months from September through January.
MATERIALS	Competition rules; paper and art media as outlined in the competition rules; judges, awards or ribbons
ACTIVITY AND DISCUSSION	<ol style="list-style-type: none">1. Notify the U.S. Forest Service of your school's interest in participating in participating in the competition. Your entire school need not participate.2. Involve the students, teachers, principal, other grade levels and parents in the development and implementation of the Celebrate Wildflowers Competition.3. When contest rules and lesson plans arrive, look them over, use this lesson plan and select 3-6 additional lesson plans to complete with your class.4. It is not necessary to complete all lessons, but knowledge builds from lesson 1-15, so it is best to complete them in the order they are numbered.5. READ AND UNDERSTAND THE COMPETITION RULES THOROUGHLY. DESPITE THE ARTISTIC ABILITY AND ENDEAVOR OF THE STUDENT'S WORK, IT WILL BE DISQUALIFIED IF ALL CRITERIA ARE NOT MET. Three



CELEBRATE WILDFLOWERS

#1 CELEBRATE WILDFLOWERS THROUGH ART

ACTIVITY AND DISCUSSION

particularly important items to remember are:

- a) The words "Celebrate Wildflowers" must appear on the artwork.
 - b) No three dimensional, collage, paste-on, rub-on artwork will be accepted.
 - c) As reinforcement of the wildflower conservation ethic, wildflowers depicted as having been picked, as in a vase, will not be accepted.
6. Complete posters.
 7. Hold a competition in your school. Judges might include the principal, an artist parent, a student from each grade, etc..
 8. Display all entries in the hallways of your school, clearly marked with the winners from each grade. You might also choose to make public awards at a student assembly.
 9. Mail winning entries in a cardboard stiffened package to:

Celebrate Wildflowers
Red Butte Garden and Arboretum
18A de Trobriand Street
Salt Lake City UT 84113
(801) 581-3744

EVALUATION

Criteria for selecting your school's winning entries to the Regional Competition are at the discretion of the school.

EXTENSION 1

Have the students write and perform an assembly based on the celebration of wildflowers.

EXTENSION 2

Have all students in the school vote on which is their favorite poster.

illustration



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#2 WILDFLOWER CONSERVATION

CONTENT	Respect for and conservation of wildflowers and other plantlife.
GRADE LEVEL	K-12
OBJECTIVES	Develop an understanding and respect for wildflowers as living things, and part of the natural ecology of an area.
PROCESS AND RESEARCH SKILLS	Comprehension, analysis, decision making, and value development.
PRODUCT	Discussion and understanding.
SUGGESTED LOCATION	In the classroom or outside under a tree.
TIME REQUIRED	15 minutes to 1/2 hour.
MATERIALS	Wildflower Conservation Guidelines, pencil and paper.
ACTIVITY AND DISCUSSION	<ol style="list-style-type: none">1. Ask students how they feel about wildflowers. Do they like them? Do they think they are beautiful?2. Ask students how they feel about picking or cutting across a field of wildflowers when hiking. Is it all right to do this?3. Read each Wildflower Conservation Guideline. Ask students how they feel about each one. Make it clear that the guidelines listed will be those that are followed by this class.
EVALUATION	Following the discussion, have each student write down how they feel about wildflowers. At the end of this study unit, have students write down how they feel about wildflowers. Is there a change in understanding? Greater respect should come with greater understanding.
EXTENSION 1	What would happen to wildflowers if everyone who thought they were beautiful picked them? Imagine a planet without wildflowers. What difference would it make if wildflowers were here or not?
EXTENSION 2	Repeat this entire lesson plan at the end of the "Celebrate Wildflowers" unit. Has your point of view about wildflowers changed? If so, how?



CELEBRATE WILDFLOWERS

#2 WILDFLOWER CONSERVATION

WILDFLOWER COLLECTION GUIDELINES

1. Set an example of being respectful of all living things.
2. Let all your acts reflect your respect for wildflowers as important parts of natural landscapes. Remember that every time you pick or trample a wildflower or disturb a plant, your action effects the natural world and that the cumulative effect of the actions of many people can be extremely harmful.
3. Note that wildflowers are best studied in their natural environment.
4. Avoid impacting wildflowers, especially if many visits are made to the same site by one or more classes.
5. When inspecting wildflowers closely, do not disturb the surrounding soil and vegetation. Trampling can damage seedlings and roots and compact the soil.
6. Make the main focus of the activity the understanding of wildflowers rather than collecting them.
7. Do not collect wildflowers except as part of education, scientific research or rescue operation. For classroom study, use home grown, nursery or florist stock .
8. Never collect wildflowers unless you have the permission of the land owner or land management agency. It is illegal to collect wildflowers on public land.
9. Never collect rare or endangered species. Contact the U.S. Fish and Wildlife Service for a list of endangered species in your area.
10. Never collect a wildflower if it's the only one growing in a particular area. Instead collect a single wildflower from a large group of wildflowers.
11. If you collect wildflower seeds, collect only a few from each of many plants. Always leave enough seeds for the plant to reseed itself.
12. Report unlawful collection of plants to proper authorities.

Adapted from the Virginia Wildflower Preservation Society and Project Learning Tree Wildflower Conservation Guidelines.



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#3 PIZZA IS PLANTS

CONTENT	Most of the food we eat comes from plants. (Everything but water and salt!)
GRADE LEVEL	K-6.
OBJECTIVES	Understand that everything we eat (except water and minerals, such as salt) comes from plants.
PROCESS AND RESEARCH SKILLS	Comprehension, application, analysis, synthesis, observation, decision making.
PRODUCT	Introduction and understanding of how much of our existence depends upon plants.
SUGGESTED LOCATION	In the classroom or under a large tree.
TIME REQUIRED	10 to 15 minutes.
MATERIALS	None.
ACTIVITY AND DISCUSSION	<ol style="list-style-type: none">1. What did you have for lunch today?2. Did you eat anything, or have any product that was in your lunch that did not come from a plant? (Only mineral objects, such as plastic bags, salt, water, etc. do not originate from plants.)3. Responses will be brisk: pizza, hamburger, cheese, bologna, chocolate, lollipop, etc. . Briefly track back each item to its source to prove that most of them originally started with plants.4. Discussion: How important are plants for food?
EVALUATION	Participation in discussion.
EXTENSION	Can you think of other things that we get from plants? (clothing, beauty, paper, fuel, building materials, etc.) Complete lesson plans, "Shopping for Plants" and "Plant Products."



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#4 SHOPPING FOR PLANTS

CONTENT	Most of the food we eat comes from plants. (All but water and salt!)
GRADE LEVEL	K-6.
OBJECTIVES	Understand that everything we eat (except water and minerals, such as salt) comes from plants.
PROCESS AND RESEARCH SKILLS	Comprehension, application, analysis, synthesis, observation, decision making.
PRODUCT	Activity sheets, and understanding of our dependence upon plants.
SUGGESTED LOCATION	In the classroom or under a large tree.
TIME REQUIRED	30 to 45 minutes.
MATERIALS	Pencil and paper, activity sheets number 1 (Grocery Shopping word search) and 2 (What's for Breakfast word search).
ACTIVITY AND DISCUSSION	<ol style="list-style-type: none">1. Imagine that you are grocery shopping.2. Make a list of all the food you see. On one side of the paper list all the food you see that comes from plants. (Don't forget meat! Cows eat corn and grass.) On the other side of the paper list all the food you see that does not come from plants.3. Compare the two lists and discuss.4. Complete activity sheets.5. Is there any food listed in the words searches that does not come from a plant. Explain. (Of all of our food, only water and salt do not originate from plants.)6. Discussion: How important are plants for food?
EVALUATION	Participation in discussion.
EXTENSION	How important are plants to animals? What do animals get from plants? (food, shelter, nest material, hiding places, etc.) Complete lesson plan "Plants and Wildflowers as Habitat."



CELEBRATE WILDFLOWERS

#4 SHOPPING FOR PLANTS ACTIVITY SHEET 1

GROCERY SHOPPING

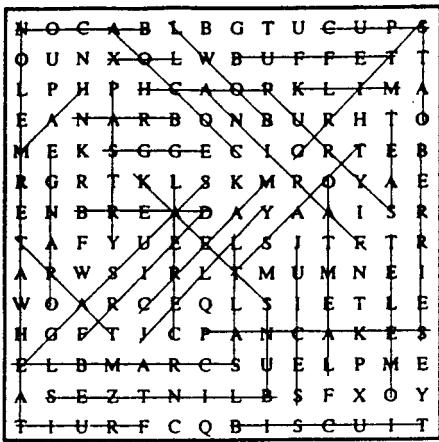


BEANS
BRIE
BUNS
BUTTER
CAKE
CHEW
COOK
CROUTE
DESSERT
DRINK
EGGS

GOBBLE
GOURD
GRILL
KALE
LEEKs
LEMON
LICK
LUNCH
MILK
MUSTARD
OMELET

ONION
PICKLE
PIES
PIZZA
PLATTER
PORK
RABBIT
RIBS
SAUCE
SAUSAGE
SHALLOT

SHRIMP
SLAW
SOUP
STEAK
TART
TOAST
VEAL
WAFFLE
WEINER
YOGURT

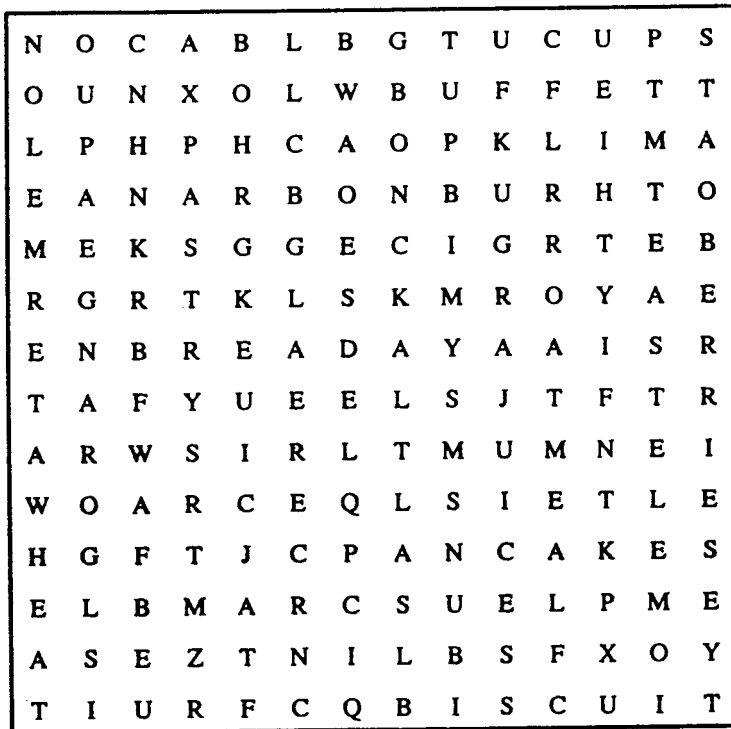


CELEBRATE WILDFLOWERS

#4 SHOPPING FOR PLANTS

ACTIVITY SHEET 2

WHAT'S FOR BREAKFAST?



BACON
BERRIES
BISCUIT
BLINTZES
BOWL
BRAN
BREAD
BUFFET
BUNS
CEREAL
COCOA

CREAM
CUPS
EGGS
FARINA
FRIED
FRUIT
GRITS
HAM
JELLY
JUICES

LOX
MELON
MILK
OATMEAL
OATS
OMELET
ORANGE
PANCAKES
PASTRY
POACH

SALT
SAUSAGE
SCRAMBLE
STEAK
SYRUP
TART
TEAS
TOAST
WATERMELON
WHEAT



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#5 PLANT PRODUCTS

CONTENT	How people use plants.
GRADE LEVEL	K-6
OBJECTIVE	List several products of wildflowers and other natural vegetation which we use in our everyday lives (wood, paper, honey, leather, wool, medicines, etc..)
PROCESS AND RESEARCH SKILLS	Comprehension, application, analysis, synthesis, observation, decision making.
PRODUCT	Discussion, Activity Sheets
SUGGESTED LOCATION	In the classroom or under a large tree.
TIME REQUIRED	30 to 45 minutes.
MATERIALS	Activity Sheets 1 and 2 (originals provided), pencil and crayons.
ACTIVITY AND DISCUSSION	Ask each student think of what things wildflowers, trees and other plants can be used for, or what products are made from them. <ol style="list-style-type: none">1. They make air, food, shelter and shade.2. Name three foods that come from wildflowers, trees and other plants. Honey, fruit, nuts, etc..3. Name four toys you have that are made of wood.4. Why would you plant wildflowers, trees or vegetables around your house? (for fruit , vegetables, beauty, etc..)5. Do you have furniture in your house made from a tree?6. Name other things that come from plants. (pencils, popcicle sticks, paper, popcorn, etc.)
EVALUATION	Complete and discuss activity sheets.
EXTENSION	Complete Celebrate Wildflowers lesson plan, "Shopping for Plants" and "Making Perfume."



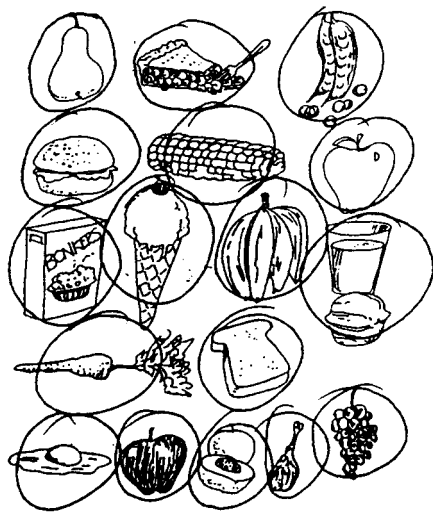
CELEBRATE WILDFLOWERS

#5 PLANT PRODUCTS
ACTIVITY SHEET 1

Cross out all things that are NOT made from plants:



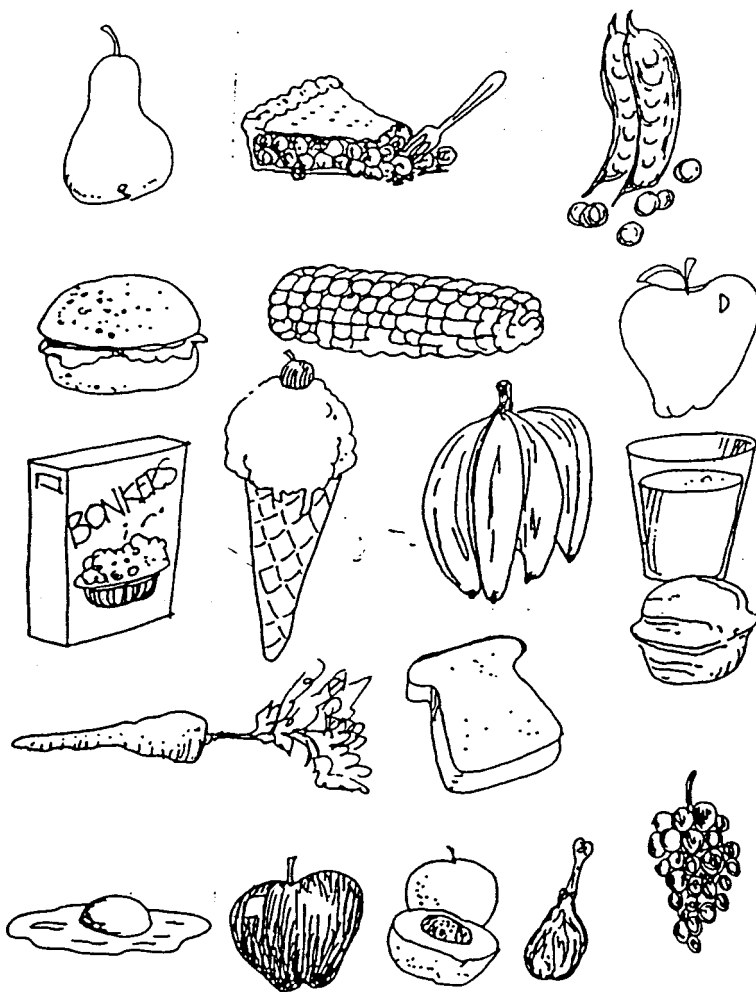
Draw 3 other things you use that are made out of plants.



CELEBRATE WILDFLOWERS

#5 PLANT PRODUCTS ACTIVITY SHEET 2

Circle all the foods that get their beginnings from plants.



Eggs, ice cream, and hamburgers originally start out as plants. How can this be? Explain.



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#6 MAKING PERFUME

CONTENT	How perfume is made.
GRADE LEVEL	K-6
OBJECTIVE	Learn how perfume is made by making some .
PROCESS AND RESEARCH SKILLS	Comprehension, application, analysis, synthesis, observation.
PRODUCT	Perfume.
SUGGESTED LOCATION	In the classroom or at home.
TIME REQUIRED	Preparation time 10 minutes. Wait time 2 weeks.
MATERIALS	Baby food jar with a lid for each perfume flavor, rubbing alcohol, enough fragrant plant parts to fill jar (rose petals, sagebrush leaves, violets, cloves, cinnamon, lavender, etc.), knife or food processor and a strainer.
ACTIVITY AND DISCUSSION	<p>Many plants have strong fragrances. Chose your favorite fragrant plant and make perfume the way cosmetic companies make perfume.</p> <ol style="list-style-type: none">1. Chop plant parts into small pieces. Place in jar.2. Fill jar with alcohol.3. Put lid on. Wait for 2 weeks. (Alcohol dissolves aromatic oils.)4. Strain. If fragrance is strong enough, close and age for another week. If not, add more chopped plants and repeat.5. Try several fragrant plants. Make up recipes for perfume.
EVALUATION	Completion of product.
EXTENSION 1	Mass produce, bottle, label and distribute your perfume.
EXTENSION 2	Study fragrant plants in their native habitat. Are they more fragrant at a certain time of the day or the year? Why do you think this is so? (To attract pollinators.) Complete lesson plans, "Pollinator Field Guides" and "Bees as Pollinators."



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#6 MAKING PERFUME

CONTENT	How perfume is made.
GRADE LEVEL	K-6
OBJECTIVE	Learn how perfume is made by making some .
PROCESS AND RESEARCH SKILLS	Comprehension, application, analysis, synthesis, observation.
PRODUCT	Perfume.
SUGGESTED LOCATION	In the classroom or at home.
TIME REQUIRED	Preparation time 10 minutes. Wait time 2 weeks.
MATERIALS	Baby food jar with a lid for each perfume flavor, rubbing alcohol, enough fragrant plant parts to fill jar (rose petals, sagebrush leaves, violets, cloves, cinnamon, lavender, etc.), knife or food processor and a strainer.
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ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#7 PLANTS ALIVE!

CONTENT	Plants are living organisms.
GRADE LEVEL	K-6
OBJECTIVES	Understand that plants are living organisms.
PROCESS AND RESEARCH SKILLS	Experimentation, observation, and reporting.
PRODUCT	Observations and understanding that plants are living organisms.
SUGGESTED LOCATION	Classroom or schoolyard.
TIME REQUIRED	10 minutes preparation time. 1 week of observation.
MATERIALS	Small leafy house plant or schoolyard flower or shrub, plastic bag, twist tie, petroleum jelly,
BACKGROUND	<p>One of the most difficult concepts to get across to children is that plants are living things. They do not move. Animals are certainly alive. Plants are alive too, and their lives are just as tenuous and their bodies are just as fragile as those of any animal.</p> <p>In one regard, plants are better off than humans and other animals — they make their own food from scratch. Just as when we collect ingredients to make a chocolate cake, plants collect water and minerals from the soil, oxygen from the air, and energy from the sun to produce sugars and starches which they use to live and grow. Plants make their own food and humans and other animals eat plants.</p>
ACTIVITY AND DISCUSSION	<p>Plants exchange the carbon dioxide humans and other animals breathe for oxygen, but can we prove that plants “breathe”? Yes, we can.</p> <ol style="list-style-type: none">1. Put the house plant or some growing leaves of the flower or shrub inside the plastic bag.2. Seal up the bag with the twist tie.3. Watch the bag for a week, keep a journal of your observations.



CELEBRATE WILDFLOWERS

#7 PLANTS ALIVE!

ACTIVITY AND DISCUSSION CONTINUED

4. What happens? (Moisture collects on the inside of the bag.)
5. Why do you think this happens? (As a plant respire or "breathes" some moisture escapes from its body — just like humans and other living organisms.)

Plants breathe through their leaves. Putting petroleum jelly on the leaves will clog the pores (stomata) through which air passes in and out of the leaf.

1. Take the plant out of the plastic bag.
2. Carefully cover both sides of two leaves with petroleum jelly.
3. Coat just the top sides of another two leaves.
4. Coat just the undersides of another two leaves.
5. Observe for a week, record observations in a journal.
6. What happens? (The coated leaves are pale and wilting. The ones that are coated on both sides are in the worst shape.)
7. How many days does it take before a leaf drops off? (Varies) Which leaf drops off? (The leaf coated on both sides.)
8. Why do you think the leaves with only one side coated are better off? (Stomata are on both sides of the leaf.)
9. Which of the one side coated leaves is doing better? (The ones coated on the top sides.) Why do you think this is so? (There are more stomata on the underside of the leaf.)

EVALUATION

Written observations in journal.

EXTENSION

The circulatory system of a plant is called the vascular system. It is made up of "veins" of phloem and xylem. Water and minerals move from the roots to the leaves by way of the phloem. Manufactured sugars and starches move through the xylem from the leaves to storage areas in stems, trunks and roots. These food storage organs are usually used during the winter months to store food energy until spring when it is needed again to build leaves and flowers.

Materials

- Stalk of celery
- Large carrot
- 2 jars or drinking glasses
- Red and blue food coloring
- Paring knife



CELEBRATE WILDFLOWERS

#7 PLANTS ALIVE!

EXTENSION CONTINUED

1. Cut 1 inch off the bottom of the celery stalk. Cut 1 inch off the narrow end of the carrot.
2. Pour water into the jars to a depth of about 2 inches.
3. Color one jar of water with red food coloring. Color the other jar of water with blue food coloring.
4. Put the stalk of celery (cut end down) into the red jar. Put the carrot (cut end down) into the blue jar.
5. Let them stand in a sunny place for two days.
6. What happened to the leaves at the top of the celery? (They stood upright and started to grow.) How do you think this happened? (The water moved up the stem and into the leaves.)
7. Take the celery stalk out of the water. Cut the celery in half. What do you see inside the celery? (Veins!) Can you tell where the red water went up the stalk? (In the veins.) Gently scrape the length of the celery stalk with the knife until you can get a good look at the red tubes/veins running up the celery stalk.
8. Take the carrot out of the water. Cut the carrot in half. What do you see?

illustration



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#8 WHAT IS A WILDFLOWER?

CONTENT	Definition of the word "Wildflower."
GRADE LEVEL	K-6
OBJECTIVE	Understand the meaning of the word "wildflower" and how wildflowers are different from other plants.
PROCESS AND RESEARCH SKILLS	Comprehension, application, analysis, synthesis, decision making, value development, imagining and abstract thinking.
PRODUCT	Understanding and an open interest to further study.
SUGGESTED LOCATION	In the classroom or outside near some flowers.
TIME REQUIRED	10 to 15 minutes.
MATERIALS	Pencil and paper and a score keeper.
ACTIVITY AND DISCUSSION	<p>Game of 20 Questions leads to discovery of the word WILDFLOWER.</p> <ol style="list-style-type: none">1. I am thinking of an object that is common in our environment. You may ask me questions answerable with only "yes" or "no" to determine what the object is. The catch is, you only have 20 chances to guess my word, so plan your questions well. Let me start off with an example: "Is this a beautiful object?"2. Students continue on their own. Remind them to spend questions wisely. They may want to cooperate in thinking up questions.3. Once the word "WILDFLOWER" is discovered, ask the students to consider what the meaning of that word is. Assist them by dividing the word into its roots: WILD and FLOWER.4. Encourage students to use a dictionary or site examples of other "wild" things or "flowers."5. Are the flowers in your yard wildflowers? Why or why not? Might we see a wildflower growing in a crack in the sidewalk downtown? Why or why not?6. Where might we go to see the most possible wildflowers?7. Are there times when a wildflower might be considered a weed?



CELEBRATE WILDFLOWERS

#8 WHAT IS A WILDFLOWER?

EVALUATION

Have students each write their definition of "WILDFLOWER."

EXTENSION 1

Play "20 Questions" using other related words, ie: habitat, pollinator, maple tree, weed, etc..

EXTENSION 2

Complete lesson plans, "Wildflower Poetry," and "State Flowers."



ENVIRONMENTAL LEARNING PROGRAM CELEBRATE WILDFLOWERS

#9 WILDFLOWER PARTS

CONTENT	Name, structure and function of plant parts.
GRADE LEVEL	K-6.
OBJECTIVES	Observe and identify the parts of a flower.
PROCESS AND RESEARCH SKILLS	Dissection, observation and reporting.
PRODUCT	An illustration of a wildflower, identifying and labeling parts.
SUGGESTED LOCATION	In the classroom.
TIME REQUIRED	One hour.
MATERIALS	Plant diagram, Activity Sheet 1, a fresh cut flower for each four students (a simple flower like a tulip or lily from the florist or garden), hand lenses, and Activity Sheet 2.
BACKGROUND	<p>Wildflowers bloom for only one purpose - to produce seeds. Their color, size smell and shape contribute to their success.</p> <p>A typical flower consists of four sets of flower parts: sepals, petals, stamens, and pistils.</p> <p>The outside most set of flower parts consists of the sepals. Sepals are usually green and leafy texture. They are the parts that enclose the bud. When the flower blooms, the sepals fold back to allow the petals to emerge. On some flowers, the sepals are colored like the petals. All the sepals together are called the calyx.</p> <p>The second set of floral parts is the petals. Petals are colorful and usually larger than the sepals and attract pollinators. All the petals together are called the corolla.</p> <p>Stamens, the third set of floral parts, are the flower's pollen producing organs. Each stamen consists of two parts: 1) anthers that produce the pollen; and 2) a long filament that is the stem of the anther.</p>



CELEBRATE WILDFLOWERS

#9 WILDFLOWER PARTS

BACKGROUND CONTINUED

The last set of floral parts is the pistil. A flower can have many pistils. Pistils are composed of three main parts: 1) the sticky top called the stigma, which catches pollen grains; 2) the style, a long neck that connects the stigma and the ovary; and 3) the ovary, in which ovules are produced. An ovule is an embryonic plant.

Seed production is a two-step process. The first step is pollination. Pollination is the transfer of pollen from the anthers of one flower to the stigma of another. Once a pollen grain has landed on a stigma, it germinates and produces a pollen tube that grows downward through the style and through the tissues of the ovary until it reaches and fertilizes an ovule. The ovule ripens, or matures, into a seed.

TEACHER WILL

1. Lead class in a discussion of the background information.
2. Review parts of a flower using Activity Sheet #1. One way to do this is to make vocabulary cards of each word. Students can review with questions and answers or a "Jeopardy" quiz format.
3. Divide class into groups of six or fewer students in each group.
4. Distribute one flower (tulip or lily), and hand lens to each group.
5. Coach students to discover the following:
 - a) The swollen tip of the stem that the flower rests on is called the receptacle. In some flowers this is more of a location than a structure.
 - b) The sepals (calyx), which on a tulip or lily are petal colored. There are 3 sepals and 3 petals on a tulip or lily.
 - c) A set of petals above the calyx, known as the corolla.
 - d) Above the base of the corolla are the filaments of the stamen with anthers (pollen holding structures) on top. This is the male reproductive structure of the flower.
 - e) In the center, protected by all the other parts, is the pistil, with the lowest part at the base called the ovary, and the style rising to support the stigma. This is the female reproductive structure of the flower.
6. Point out that each group of structures is in a specific position in relation to the stem and to the other groups.

STUDENTS WILL

1. Read and discuss background information (above).
2. Review parts of the flower using Activity Sheet #1.
3. Carefully pull the flower apart, piece by piece--saving the pieces--to discover receptacle, calyx, sepals, corolla, petals, stamens, filaments, anthers, pistil, ovary, style, and stigma.



CELEBRATE WILDFLOWERS

#9 WILDFLOWER PARTS

STUDENTS WILL CONTINUED

4. Using the hand lens, examine the tulip's floral parts.
5. Compare the parts of this flower with the chart and learn their relative positions.
6. Review and complete Activity Sheet #1.
7. Draw the flower parts of your dissected flower.

EVALUATION 1

1. Have students draw flowers that have one part missing.
2. Have them challenge the other students in their group to guess which part is missing.

EXTENSION 1

If the season permits, take a walk to look at various kinds of flowers, trying to determine the essential parts of each.

EXTENSION 2

Complete Activity Sheet 2. Discuss.

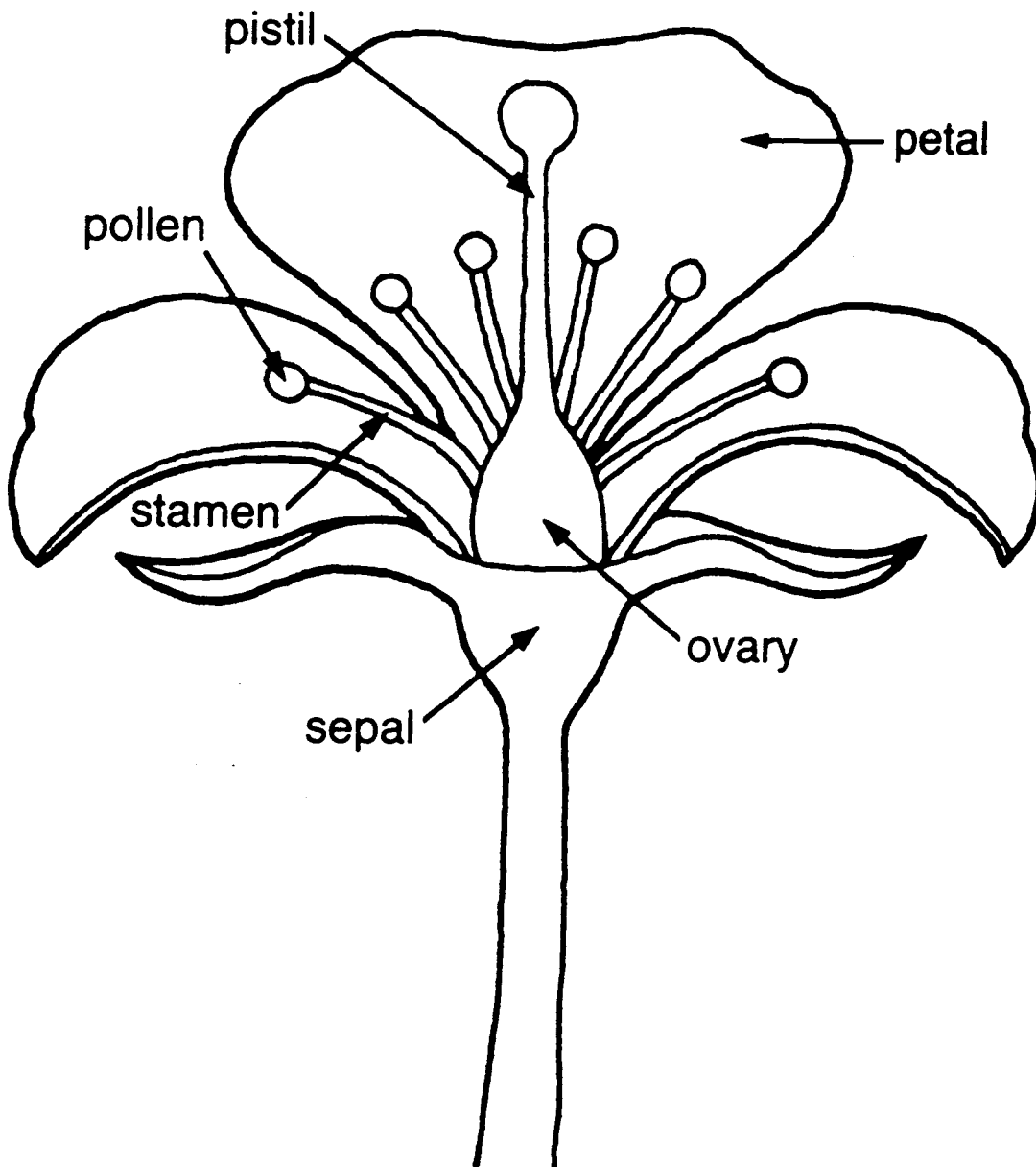
EXTENSION 3

Complete lesson plans, "Pollinator Field Guides" and "Bees as Pollinators."



CELEBRATE WILDFLOWERS

#9 WILDFLOWER PARTS
FLOWER DIAGRAM





CELEBRATE WILDFLOWERS

#9 WILDFLOWER PARTS ACTIVITY SHEET 1

1. Spread newspaper on your desk and place the flower on it.
2. Draw the flower in the box below. Show and label all the parts you can see.
3. Examine and count the petals. Remove the petals.

You will need:

newspaper
large simple flower
pencil or crayons
hand lens

How many petals are there? _____

What color are the petals? _____

4. Remove a stamen. Look at the end with the hand lens.

What do you see? _____

5. Touch the end of the pistil. Then rub a stamen on the pistil. Look at the pistil through the lens.

What does the pistil feel like? _____

What happens when you rub the stamen on the pistil? _____

6. Locate the ovary. Split the ovary open with your fingernail.

Are there eggs inside? If so, how many? _____



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#10 POLLINATORS

CONTENT	Different colors and shapes of flowers are pollinated by different pollinators.
GRADE LEVEL	K-6
OBJECTIVES	Observe interaction between flowers and pollinators.
PROCESS AND RESEARCH SKILLS	Observation, comprehension, application, analysis.
PRODUCT	Drawing of wildflowers and their pollinators.
SUGGESTED LOCATION	Among wildflowers in their native habitat or in a garden full of flowers.
TIME REQUIRED	30 minutes to one hour.
MATERIALS	Paper and pencil, wildflower and native plant field guides, field glasses, and newspaper article, "Flower Determines Honey's Taste."
BACKGROUND	<p>Many flowers need pollen from other flowers to produce seeds, but flowers cannot move. So they have developed a clever scheme for attracting bees, butterflies, hummingbirds, bats, beetles, ants, and in some parts of the world - mosquitoes to carry pollen to other flowers. Bees probably are the most frequent pollen carriers.</p> <p>Flowers attract pollinators by their flower color, fragrance, or nectar. Bees can perceive the colors in the yellow, blue, and ultraviolet spectrum of light, but they cannot see colors in the red spectrum. Hummingbirds can see reds and oranges.</p> <p>Clearly marked or shaded areas near the center of some flowers guide bees and other pollinators to the nectar, a sweet liquid secreted by the flower. To reach the nectar, pollinators must crawl over the pistil and anthers to reach into the flower's heart. In doing so, the pollinators deposit and pick up pollen and transfer it from flower to flower.</p>



CELEBRATE WILDFLOWERS

#10 POLLINATORS

BACKGROUND CONTINUED

The "mouth-tongue" proboscis of bees enables them to suck up the nectar. Bees can taste sweet, bitter, sour, and salty flavors. They can also taste with their front legs and antennae.

Flowers send messages with their fragrances. Bees are enticed more by the flowers' smells than by their colors and shapes.

Some flowers smell like rotting flesh. These plants, such as Polemonium (Jacob's Ladder) and Veratrum (Skunk Cabbage), attract pollinators such as flies, which feed on dead and putrefying flesh.

The petals of some flowers are modified to help pollination. Some flowers have a lip-like shape that provides a landing place for bees. Bumblebees, which are heavier, can open a snapdragon's (Antirrhinum) "mouth", but a honeybee is too light.

Bees carry pollen from flower to flower, pollinating the flowers and making fruit and seed production possible. Thus, the bee and the flower work together.

Flowers have evolved many other ways to attract pollinators or discourage unwanted visitors. For example, flowers that are pollinated by night-flying bats and moths have white or light-colored petals and produce heavy evening fragrances that attract these nocturnal pollinators. Some flowers stay closed at certain times during the day, making their nectar unavailable to undesirable insects.

Other flowers, like those in the Morning Glory Family (Convolvulaceae), open early in the morning and close about midday to accommodate the working hours of their pollinators.

CAUTION

Be aware of safety when around stinging insects.

1. Bees or wasps are not interested in humans until struck at or startled by sudden movements. Simply move away slowly with your head down.
2. Colors and scents attract insects. Wear subdued colors, not bright colors or black. Don't wear perfumes, hair sprays, lotions, and other scented items that might attract insects.
3. Wear long sleeves and pants to protect you from nettles, grassburrs, and insects.



CELEBRATE WILDFLOWERS

#10 POLLINATORS

CAUTION CONTINUED

4. Ward off flying insects with insect repellents safe for humans.
5. Ask parents of children allergic to stings to provide appropriate medication in case children are stung.

ACTIVITY AND DISCUSSION

1. Find a spot where you can see a variety of flowers.
2. Spend 15 to 20 minutes quietly sitting still and watching.
3. Take brief notes on the interactions you observe between flowers and pollinators.
4. Discuss your observations as a group. How long did the insects spend at each flower? What did the insects do while visiting the flower?
5. Draw color pictures of your observations.

EVALUATION

Field notes and accuracy of drawing.

EXTENSION 1

Did you know?

The largest flower in the entire plant kingdom is a parasite that grows on the roots of a vine in the dense tropical forest of Sumatra. The flower, which has been measured at 1.4 meters in diameter, was discovered in 1818 by a botanist. The plant has an awful odor of decay and feces.

Predict what the pollinators are for this giant flower? (Flies)

EXTENSION 2

Determine the significance of the weight of pollinators.

Materials: Large flowers, sticky clay.

1. Have students roll small balls of clay into an assortment of sizes. The balls represent insects of different sizes.
2. Starting with the smallest ball, place them on/in the flowers to mimic insects pollinating stigmas. Repeat until the flower collapses and can no longer support the weight of the balls.
3. Repeat this with other flowers.
4. Which flower could support the largest ball of clay? List some insects which could pollinate these flowers. Which flowers supported the least amount of weight? These flowers must have small pollinators or be pollinated by wind. List some insects that could serve as pollinators for these flowers.
5. Can you think of a flower that might require a heavy or strong pollinator to get the flower open? (A rose, delphinium, others.)



**ENVIRONMENTAL LEARNING PROGRAMS
CELEBRATE WILDFLOWERS**

#11 BEES AS POLLINATORS

CONTENT	Honey bees are one of the most important pollinators.
GRADE LEVEL	K-6
OBJECTIVES	Observe interaction between flowers and honeybees as pollinators.
PROCESS AND RESEARCH SKILLS	Observation, comprehension, application, analysis.
PRODUCT	Understanding.
SUGGESTED LOCATION	Among wildflowers in their native habitat or in a garden full of flowers.
TIME REQUIRED	30 minutes to one hour.
MATERIALS	Paper and pencil, wildflower and native plant field guides, field glasses, Honeybee drawings and diagram, and the newspaper article, "Flower Determines Honey's Taste."
BACKGROUND (READ ALOUD)	<p>Honeybees are amazing insects. Imagine making 60,000 flights to gather nectar for one teaspoon of honey or constructing such perfectly designed cells that architects marvel at them. The bustling activity of a hive seems confusing, but can be broken down into a simple series of tasks.</p> <p>Three different types of bees perform all the tasks within a hive: the queen, female workers and male drones. The queen lays eggs for the hive. She can lay up to 3,000 eggs per day!</p> <p>Female worker bees emerge from the egg as adults. For the first three weeks of her life she produces wax and royal jelly (fed to the queen.) She also stores pollen in cells, cleans and repairs the hive and guards the entrance to the hive. After three weeks she scouts for and collects pollen and nectar.</p> <p>Male drone bees serve only one function: to be the mates of the queen and fertilize her eggs. In autumn, drones are forced out of the hive.</p>



CELEBRATE WILDFLOWERS

#11 BEES AS POLLINATORS

CAUTION

Be aware of safety when around stinging insects.

1. Bees or wasps are not interested in humans until struck at or startled by sudden movements. Simply move away slowly with your head down.
2. Colors and scents attract insects. Wear subdued colors, not bright colors or black. Don't wear perfumes, hair sprays, lotions, and other scented items that might attract insects.
3. Wear long sleeves and pants to protect you from nettles, grassburrs, and insects.
4. Ward off flying insects with insect repellents safe for humans.
5. Ask parents of children allergic to stings to provide appropriate medication in case children are stung.

ACTIVITY AND DISCUSSION

1. Study the drawings of the three kinds of bees and the diagram of bee body parts. Answer and discuss the following questions:
 - a) How does a honeybee smell? (With its antennae.) Where are these? (On the front of its head.)
 - b) Could a honeybee clearly see a red rose? (No.) Why or why not? (They can't tell red from other colors.)
 - c) How long is a honeybee's tongue? (About twice as long as its head is.)
 - d) Where does a honeybee carry the nectar it has gathered? (In its honey stomach.)
 - e) Where does it carry the pollen it has collected? (In the pollen baskets on the third pair of legs.)
 - f) What do you suppose the bees do with the nectar they collect? (They make honey out of it.) what do you think they do with the pollen they collect? (They eat it!)
 - g) How far can a bee fly? (Up to eight miles.)
 - h) True or false: A honeybee dies if it stings someone. (True.) Explain.
 - i) True or false: All the honeybees you see collecting nectar and pollen are females. (True.)

EVALUATION

Participation in discussion.



CELEBRATE WILDFLOWERS

#11 BEES AS POLLINATORS

EXTENSION 1

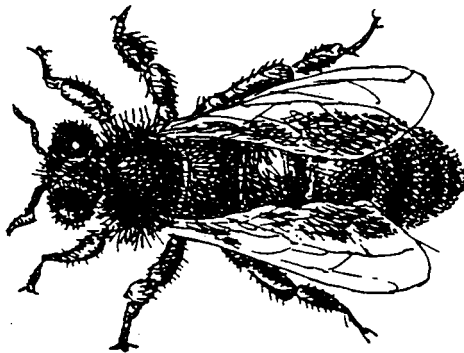
Consider the following: How do you think a honeybee can spot a good honey flower among all the other plants around? (How do you spot a McDonald's sign among all the other signs on the road?)

EXTENSION 2

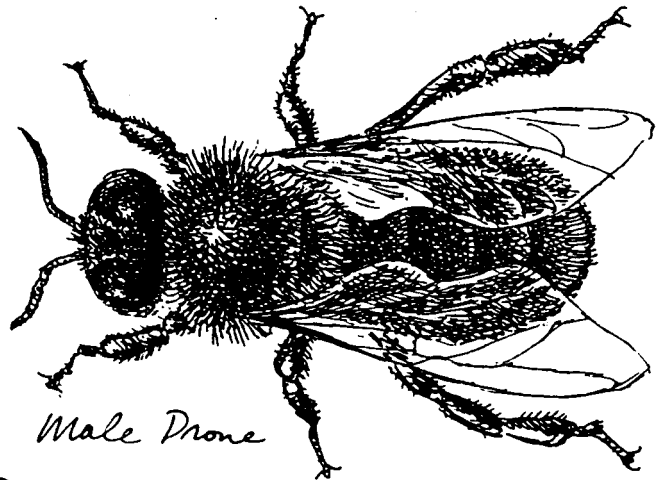
Follow a honeybee on its visits to your neighborhood flowers. Make a map of your neighborhood and mark each stop. How far did the honeybee travel in 15 minutes? Were you able to follow the honeybee back to its hive? How far away from where you first saw the honeybee was her hive?

EXTENSION 3

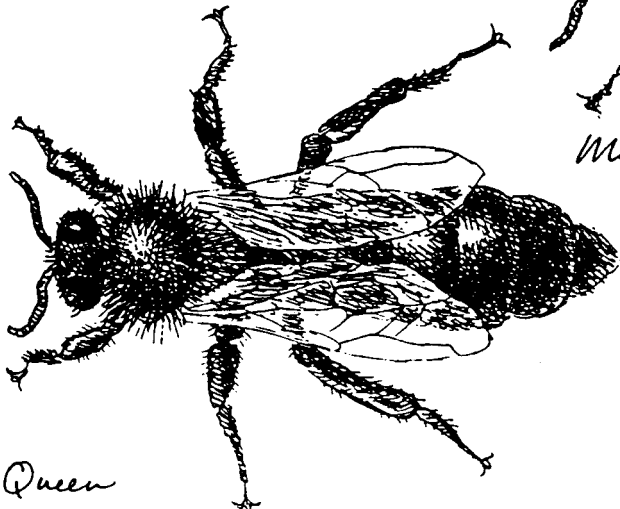
1. Read newspaper article, "Flower Determines Honey's Taste"
2. Purchase some different shades of honey to test taste. (Health food stores commonly have various kinds of honey available.)
3. Discuss.



Female Worker



Male Drone



Queen



CELEBRATE WILDFLOWERS

#11 BEES AS POLLINATORS HONEYBEE DIAGRAM

In order to perform its complicated tasks, a bee's body must be very specialized, both internally and externally.

1. **Antennae** Contain many smell-sensitive pits, giving the bee a keen sense of smell
2. **Compound Eyes** Can differentiate colors except red and black
3. **Mandibles** Gather pollen and mold wax
4. **Tongue** Collects nectar and passes it on to the honey stomach
5. **Wings** Two pairs of delicate wings that lock together with fine hooks, enabling the bee to fly distances up to eight miles

Legs

Three pairs of specialized legs:

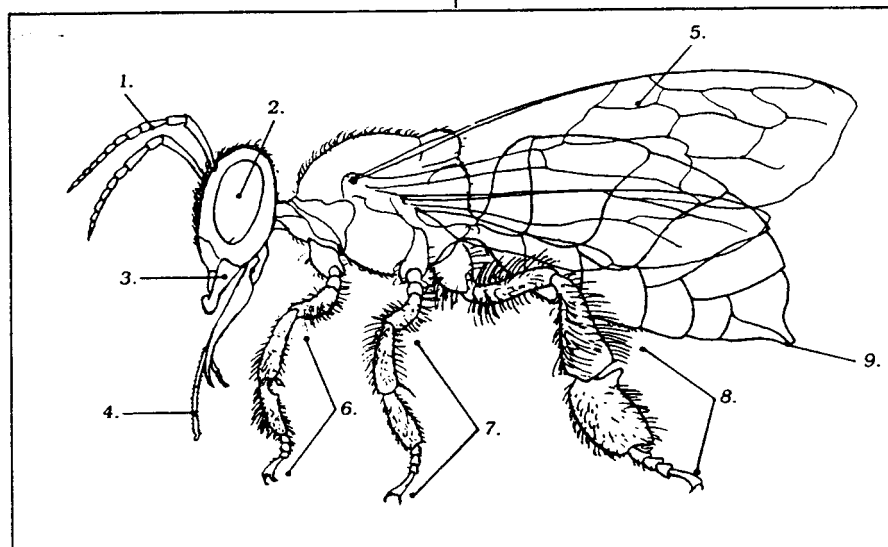
6. *First pair*— each leg has a comb for removing pollen and other materials from the antennae and a pollen brush to gather pollen from the foreparts of the body

7. *Second pair*— each leg has a pollen brush to remove pollen from the first legs and other body parts, and a spur to pick up wax

8. *Third pair*— each leg has a pollen basket for carrying pollen, pollen brush, and pollen comb for cleaning its body and collecting pollen; the wax gland is located just behind this pair of legs

9. **Stinger**

Connected to a gland that secretes stinging fluid; when used, it and other parts of internal organs are pulled out of the bee, causing its death.





CELEBRATE WILDFLOWERS

Flower Determines Honey's Taste

Andy sends the Star Wars Question and Answer Book About Space to Nora Douglas, 8, Decatur, Ill., for her question:

How do bees make honey?

Bees make thick, sweet honey from flower nectar. Nectar is a watery fluid.

Bees sip the thin nectar from the blossoms of flowers and carry it to their hives. Each worker bee has a special pouch called a honey bag inside its body. Here the bee stores the nectar it collects.

In the bee's honey bag, the sugar and nectar are broken down by a process called inversion into two simple sugars, levulose and dextrose. After the honeybees deposit the nectar in the hive, they allow most of the water to evaporate and the liquid becomes thick. The bees also add enzymes that enhance the honey's flavor.

Flowers Influence Color

Actually, the flavor and color of the honey is influenced by the kinds of flowers from which the nectar comes. Honey ranges in color from white through dark amber.

The light-colored honeys usually have the mildest flavor. The most common honey plants are alfalfa, alsike clover, sweet clover and white clover.

Many regional plants produce excellent honey. The clovers are common in the North with buckwheat flowers often used in the East. In the South, bees obtain nectar from tupelo, mesquite, sourwood and gallberry.

Among the white honeys, that of California white sage rates first, followed by orange blossom honey. Fall flowers, such as goldenrod and asters, give a dark honey.

Great Energy Food

Nutritionists tell us that honey is an excellent energy food because it contains simple sugars that can be used quickly by the body. It differs chemically from cane sugar, which is also an energy food.

Honey also contains mineral salts and other minerals needed by the

body. It is the only form of sugar that does not need to be refined.

Bakers often use honey in place of sugar for their products. Also, many cough medicines and laxatives are made with honey.

Florida and California are the leading honey-producing states in the United States. Other leading states and Canadian provinces, listed in the order of their importance, include Alberta, Minnesota, South Dakota, Wisconsin, Texas, Iowa, Manitoba and Nebraska.

Keeping Honey Fresh

About 225 million pounds of honey are produced each year in the United States and Canada.

Today, honey suppliers usually

remove the waxy cells or honeycombs that contain the honey and then seal it in airtight containers. This keeps the honey fresh for many months.

Commercial producers place the honeycombs in honey extractors. These machines whirl the honeycombs around, forcing the honey out. The honey is then bottled and sold.

When honey stands for a long time, the liquid may separate to form lumps called crystals. Some people prefer their honey in this form. Honey butter is also available. This product is made by beating honey and butter together.

Honey has been an important sweet diet item with man since ancient days.



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#12 POLLINATOR FIELD GUIDES

CONTENT	Flowers of different colors attract different pollinators.
GRADE LEVEL	K-6
OBJECTIVES	Using various colors of pressed flowers, create a field guide to the pollinators for various colors of flower.
PROCESS AND RESEARCH SKILLS	Comprehension, application, analysis and synthesis.
PRODUCT	Field guide to the pollinators for various colors of flowers.
SUGGESTED LOCATION	In the classroom.
TIME REQUIRED	15 minutes to one half hour for each of 2 phases of the project. Two week waiting time between phases, for pressing/drying of flowers.
MATERIALS	Flowers for pressing, telephone books, 5 x 8 card for each student. Purchase flowers at the florist or collect from the home landscape.
ACTIVITY AND DISCUSSION	<ol style="list-style-type: none">1. What is the purpose of plant colors (pigments)? (to attract different pollinators.)2. Pollinator preferences:<ul style="list-style-type: none">bees - blue or yellow flowers with sweet fragrances.hummingbirds - red flowers with long tubesbutterflies - brightly colored flowers in clusters.moths - white flowers with strong scents.beetles - bowl shaped flowers with lots of pollen.3. Why do you think each pollinator prefers that particular color?<ul style="list-style-type: none">bees - they can see it best and fragrant flowers make the sweetest honey.hummingbirds - they can see it best and the long floral tube is to accomodate their long bill.butterflies - they can see it best and spend time crawling over a single plant, eating nectar from several flowers.moths - to be easily detected at night.beetles - easy to climb into; lots to eat.



CELEBRATE WILDFLOWERS

#12 POLLINATOR FIELD GUIDES

ACTIVITY AND DISCUSSION CONTINUED

4. Collect and press flowers that would be pollinated by each of the above mentioned creatures.

PRESSING FLOWERS

Select blossoms that are fairly flat. If bumpy like a rose, separate into petals. Pick blooms before they begin to wilt. If the blossom has water on it from rain or garden sprinkling, allow it to dry before pressing.

The simplest plant press is an ordinary urban telephone book. Open the book to any page. Place the blossoms or petals on the page so that none are touching one another. Arrange them as flat as possible.

Many flowers can be pressed in a single telephone book. Be sure to leave at least 6 pages between each set of pressed flowers. These pages serve as blotters to absorb moisture from the flowers as they dry.

When you have placed as many flowers into the telephone book as you desire, close the telephone book. Place a heavy weight on it for 2 weeks. Do not open the book to take a peek for at least one week.

5. Put it all together.

MAKING THE FIELD GUIDE

Be sure that your pressed flowers are virtually dry and that no mold or mildew is present.

Select flowers/petals you wish to use and arrange them on a 5 x 8 card. Write the name or draw the creature pollinator next to the appropriate color of flower. There is no need to glue flowers in place.

Laminate flowers/petals to card with clear contact shelving paper.

6. Test your pollinator field guide in the field.

EVALUATION

Completeness, comprehension and success of pollinator field guide.

EXTENSION 1

Investigate the value of bats and other mammals as pollinators of wildflowers.



CELEBRATE WILDFLOWERS

#12 POLLINATOR FIELD GUIDES

EXTENSION 2

Investigate wind as a pollinator. What noticeable visual difference is there between creature pollinated wildflowers and wind pollinated wildflowers?

Wind pollinated wildflowers have no need to attract pollinators by being beautiful or fragrant. Consequently, wind pollinated wildflowers are usually not “showy” nor do they have a scent or treat of nectar. They do however have a seemingly over-abundance of pollen since pollination by wind or water is such a chancy thing. Examples of wind pollinated plants include: grasses, ragweed, sagebrush and many trees such as oaks, maples, and elms.

1. The pollen of which kind of plant, creature pollinated or wind pollinated, do you think is more likely to cause hayfever? Wind pollinated. Why? It's blowing around in the air all the time, and can easily enter your nose or eyes. Creature carried pollen is “heavier” and is sometimes sticky in order to stick to the creature. Generally, beautiful wildflowers DO NOT GIVE YOU HAYFEVER.

EXTENSION 3

Using pressed flowers, make some art pieces such as book marks or greeting cards.



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#13 BASIC WILDFLOWER CLASSICATION

CONTENT	Wildflowers and other plants can be catagorized by the shape of their flowers and the arrangement and number of flower parts.
GRADE LEVEL	K-6
OBJECTIVES	Learn the basic concept of plant classification.
PROCESS AND RESEARCH SKILLS	Observation, comprehension, classification, application, synthesis, decision making, group interaction, and cooperation.
PRODUCT	A rudimentary classification system.
SUGGESTED LOCATION	In the classroom.
TIME REQUIRED	30 minutes to one hour.
MATERIALS	Several large pieces of paper, pencils, six sets of six different kinds of cut flowers (36 flowers total, from the florist), a jar filled with (about 30 pieces) assorted sizes and shapes of nuts, bolts, screws, washers, nails and other hardware.
ACTIVITY AND DISCUSSION	<ol style="list-style-type: none">1. Place one piece of paper on a table or on the floor. Pour the jar of hardware onto the paper.2. Discuss with the class how this mixture of different objects might be separated into groups. As the class discusses, agree on some divisions. Have the students help divide the mixture of hardware into groups. (Divisions will probably be: washers in one pile, screws in another, nails in another, and so on.) As a group, you have just classified the hardware "kingdom" into smaller "family" groups. (If someone suggests dividing by color or length or whether or not one will stand on edge, do not discount these ideas!)3. Note that flowers of differnt kinds can also be divided into groups by they way they look.4. Divide class into six groups. Give each group a set of six different flowers and a large piece of paper.



CELEBRATE WILDFLOWERS

#13 BASIC WILDFLOWER CLASSICATION

ACTIVITY AND DISCUSSION CONTINUED

5. Explain that botanists classify the plant kingdom into smaller family groups. Have students study the characteristics of their six flowers and determine how to divide them into three or more smaller groups.
6. Separate these groups out on the paper. Beside each group, have students write a description of the group, answering the question, "Why are these particular flowers classified together in the same group?"
7. Mix flowers into a large group again and classify the flowers into three or more groups using different criteria.

EVALUATION

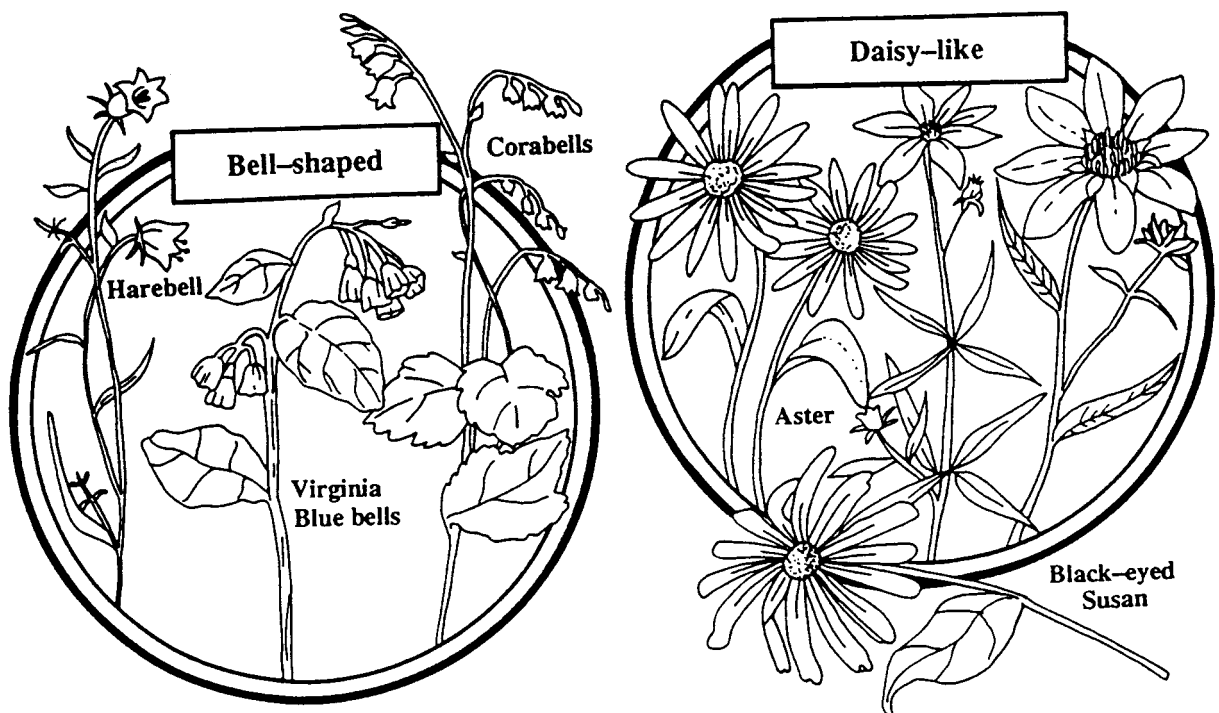
Understanding of classification of the hardware kingdom by applying observation skills and concepts of classification to the 6 flowers.

EXTENSION 1

Have each student group classify their flowers into six groups (one flower in each group.) Have them explain their reasoning. Simplification by classification down to a single species, is the very point of plant classification!

EXTENSION 2

There are nearly 350,000 known species of plants in the world. Imagine the task of classifying that many plants! It is a constant job begun in 1753 by Carl Linneus and carried on by botanists today.





**ENVIRONMENTAL LEARNING PROGRAMS
CELEBRATE WILDFLOWERS**

#14 STATE FLOWERS

CONTENT	The state flowers of each of the 50 United States.
GRADE LEVEL	K-6.
OBJECTIVES	Become acquainted with the state flowers of the 50 United States.
PROCESS AND RESEARCH SKILLS	Observation, comprehension, research.
PRODUCT	List of 50 state flowers.
SUGGESTED LOCATION	In the classroom or school library.
TIME REQUIRED	30 minutes to one hour.
MATERIALS	Paper and pencil, crayons, state flower chart, black and white drawings of state flowers of Utah, Wyoming, Nevada and Idaho (the states of the Intermountain Region.) For Utah, article, "The Segó Lily" by MMMM. Teachers in Wyoming, Nevada and Idaho may be able to locate similar resources in their states.
ACTIVITY AND DISCUSSION	<ol style="list-style-type: none">1. Pass each student a State Flowers Chart (original provided.)2. Each state has selected a flower that it thinks is special or historically significant. Most state flowers were designated by state legislation and are protected by those laws.3. Students have had a part in selecting the state flower in their states. The first state flower was suggested by school children in New York state in 1891. Check the State Flower chart to see what the state flower of New York is (rose.)



CELEBRATE WILDFLOWERS

#14 STATE FLOWERS

ACTIVITY AND DISCUSSION CONTINUED

4. Study the State Flower Chart carefully. What is the state flower of your state? Utah - Sego Lily. Nevada - sagebrush. Wyoming - Indian Paintbrush, Idaho - Syringa or Mock Orange Shrub.
5. Not all states selected a native wildflower for their state flower. New Hampshire for example chose the Lilac for their state flower. Is your state's flower a native wildflower? Utah - yes. Nevada - yes. Wyoming - yes. Idaho - yes.
6. Complete research to discover how and why your state's flower was selected. Discuss.
7. Color the pictures of the state flowers of the Intermountain Region states (originals enclosed.)

EVALUATION

Develop a state flower "bee" or Jeopardy -like game to help students learn the state flowers.

EXTENSION 1

Have each student select the state flower of one of the other states to research and share findings with the class.

EXTENSION 2

Vote on a school flower. Write a short paragraph about which one you selected and why.

EXTENSION 3

Write a letter to the governor of your state telling him what you think of your state's choice of a state flower.





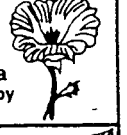

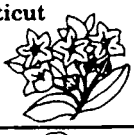
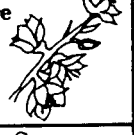



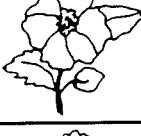









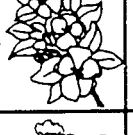
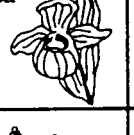
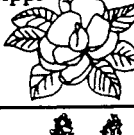



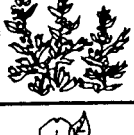



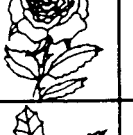
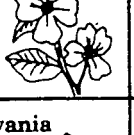

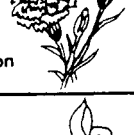
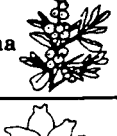
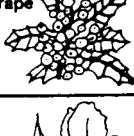


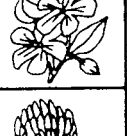
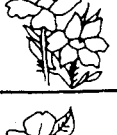
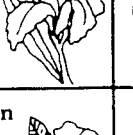
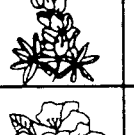

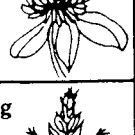





EXTENSION 4

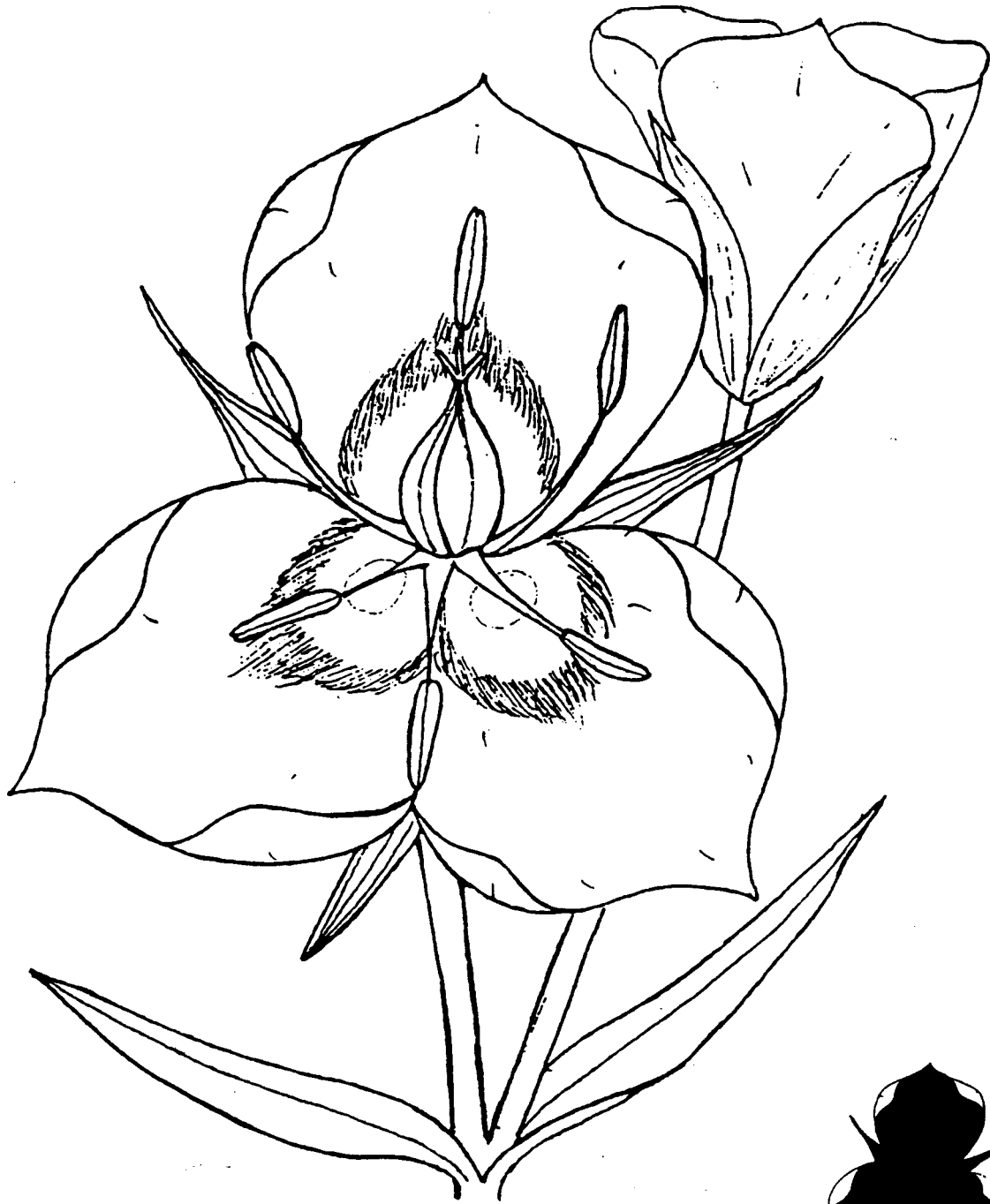
If your state's flower is a native wildflower, find out where its native habitat and blooming period are. Plan a field trip to see your state's flower in bloom.



CELEBRATE WILDFLOWERS

from The Wild Page by Barry Dobson © 1982 Universal Press Syndicate

<h1>State Flowers</h1>		Where does your state flower grow? Look and see! Does it grow as a flower, shrub or tree?		
Alabama Carnellia Shrub 	Alaska Forget- Me-Not Flower 	Arizona Saguaro Cactus Tree 	Arkansas Apple Blossom Tree 	California Golden Poppy Flower 
Colorado Rocky Mountain Columbine Flower 	Connecticut Mountain Laurel Shrub 	Delaware Peach Blossom Tree 	Florida Orange Blossom Tree 	Georgia Cherokee Rose Shrub 
Hawaii Hibiscus Shrub 	Idaho Mock Orange Shrub 	Illinois Native Violet Flower 	Indiana Peony Flower 	Iowa Wild Rose Shrub 
Kansas Native Sunflower Flower 	Kentucky Goldenrod Flower 	Louisiana Magnolia Tree 	Maine White Pine Cone and Tassel Tree 	Maryland Black-eyed Susan Flower 
Massachusetts Mayflower Flower 	Michigan Apple Blossom Tree 	Minnesota Pink and White Lady Slipper Flower 	Mississippi Magnolia Tree 	Missouri Hawthorn Tree 
Montana Bitterroot Flower 	Nebraska Goldenrod Flower 	Nevada Mountain Sagebrush Shrub 	New Hampshire Purple Lilac Shrub 	New Jersey Purple Violet Flower 
New Mexico Yucca Flower 	New York Rose Shrub 	North Carolina Dogwood Tree 	North Dakota Wild Prairie Rose Shrub 	Ohio Scarlet Carnation Flower 
Oklahoma Mistletoe Shrub 	Oregon Oregon Grape Shrub 	Pennsylvania Mountain Laurel Shrub 	Rhode Island Violet Flower 	South Carolina Yellow Jessamine Shrub 
South Dakota Pasque Flower Flower 	Tennessee Iris Flower 	Texas Bluebonnet Flower 	Utah Sego Lily Flower 	Vermont Red Clover Flower 
Virginia Dogwood Tree 	Washington Western Rhododendron Shrub 	West Virginia Rhododendron Shrub 	Wisconsin Wood Violet Flower 	Wyoming Indian Paintbrush Flower 



- 1 - green
- 2 - white
- 3 - purple
- 4 - yellow

SEGO LILY

(*Calochortus nuttallii*)

State Flower of Utah



petals - white
stamen and centers - yellow
leaves - green
stems - brown

SYRINGA

(*Philadelphus lewisii*)

State Flower of Idaho



BIG SAGEBRUSH

(*Artemisia tridentata*)

State Flower of Nevada



flowers - yellow
leaves - green
stems - red

INDIAN PAINTBRUSH

(*Castilleja* species)

State Flower of Wyoming



ENVIRONMENTAL LEARNING PROGRAMS CELEBRATE WILDFLOWERS

#15 WILDFLOWER POETRY

CONTENT	Writing poetry about wildflowers. (Adapted from "Poet-Tree," Lesson #5, Project Learning Tree Environmental Education Activity Guide.)
GRADE LEVEL	3-12.
ADDITIONAL SUBJECTS	Science, creative writing, language arts.
OBJECTIVES	To express understanding, viewpoint and feelings about wildflowers through the art of poetry.
PROCESS AND RESEARCH SKILLS	Observation, comprehension, synthesis, composition, and discussion.
PRODUCT	One or more poems about wildflowers.
SUGGESTED LOCATION	In the classroom or under a big tree.
TIME REQUIRED	30 minutes to one hour.
MATERIALS	Paper and pencils.
ACTIVITY AND DISCUSSION	<p>Writing and sharing poems will give your students an opportunity to express their understanding, viewpoint, feelings, values and beliefs about wildflowers and other plantlife.</p> <ol style="list-style-type: none">1. Ask the students to name some of the benefits they derive from wildflowers and other plantlife. What experiences have they had with wildflowers and plants in the out-of-doors? How do wildflowers and the out-of-doors make them feel? Do they have a favorite wildflower or place they like to go to see wildflowers? Do they have any favorite stories about wildflowers? Are there any wildflower issues that concern them?2. Develop a group list of characteristics and attributes of wildflowers, ie: beautiful, fragrant, many colors, etc..3. Review the major parts of speech (nouns, verbs, adjectives, participles, etc.), provide examples and make sure each student understands.



CELEBRATE WILDFLOWERS

#15 WILDFLOWER POETRY

ACTIVITY AND DISCUSSION CONTINUED

4. Present the following poetic forms:

Acrostic - A poetry form where the first letter in each line, when read vertically, spells the name of something or conveys some other kind of message:

Example

Wildflowers
Escaping the
Environment.
Deciding to live in my front lawn.
Shall I let them?

Windspark - A poetry form that has five lines with the following pattern:

I dreamed
I was... (something or someone)
Where
An action
How

Example

I dreamed
I was a honeybee
In a field of wildflowers
Deciding where to begin
Hungry!

Haiku - A Japanese form of poetry that consists of three lines:

Five syllables
Seven syllables
Five syllables



CELEBRATE WILDFLOWERS

#15 WILDFLOWER POETRY

ACTIVITY AND DISCUSSION CONTINUED

Haiku (continued)

Example

The golden flower
Tosses in the morning breeze.
Petals fall lightly.

Cinquain - A poem that consists of five lines, each with a mandatory purpose and number of syllables:

The title in 2 syllables.
A description of the title in 4 syllables.
A description of action in 6 syllables.
A description of a feeling in 8 syllables
Another word for the title in 2 syllables.

Example

Flowers
Many colors
Vying for attention
Which one is the most beautiful?
All are!

Diamante - A poem that is diamond shaped, written in seven lines:

noun
adjective adjective
participle participle participle
noun noun noun noun
participle participle participle
adjective adjective
noun



CELEBRATE WILDFLOWERS

#15 WILDFLOWER POETRY

ACTIVITY AND DISCUSSION CONTINUED

Cinquain (continued)

Example

pollen
golden sticky
rubbing catching clinging
bees butterflies beetles hummingbirds
traveling landing fertilizing
sticky successful
seed

5. Have each student set separately from each other. After sitting quietly for 10 minutes, tell the student to write descriptive words about how wildflowers look, feel, smell and so on. Do wildflowers make any sounds? Are there any other living things near or on wildflowers? How do they feel about wildflowers?
6. Have students write their own poems about wildflowers. Encourage them to try more than one of the described poetic forms.
7. Allow the students to share their poems with the rest of the group (only if they choose to—do not force them to reveal their feelings if they are uncomfortable.) Have them explain the poetic form they used and why they chose it.
8. Ask the class the following questions: Do your poems mention the influence of people on wildflowers? The influence of wildflowers on people? How?

EVALUATION

Completion of assignment.

EXTENSION

Have students select their favorite poems and assemble them into a book. Students may choose to illustrate the poetry. Students may choose to create just one class book or run off enough copies for each student to have his own copy.