LETTER TO PARENTS

Cut here and paste on school letterhead before making copies.

SCIENCE NEWS

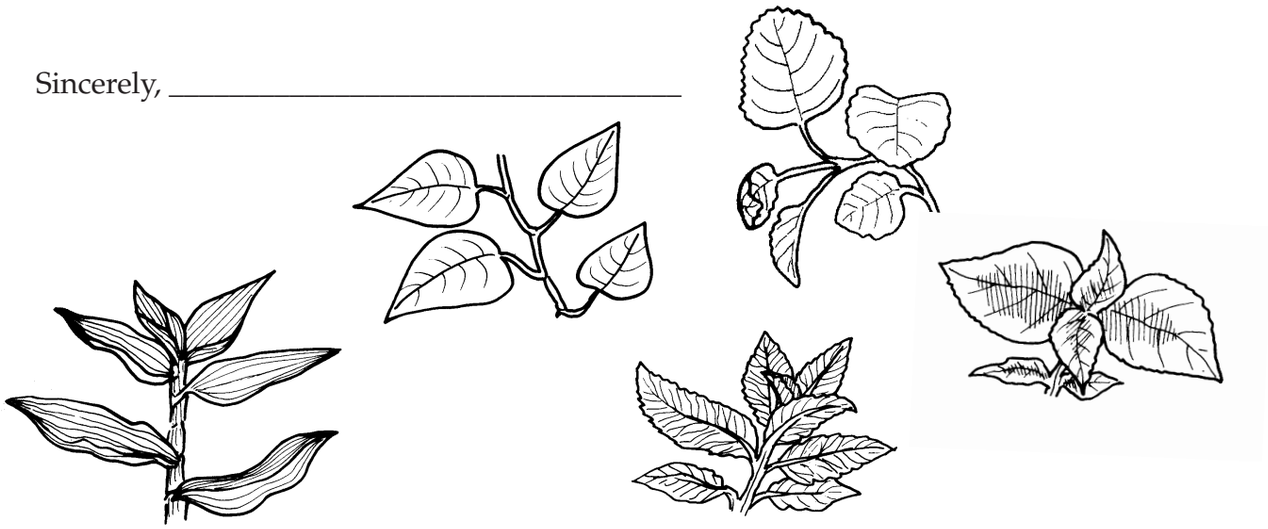
Dear Parents,

Our class is beginning a scientific study of plants and animals. We will be investigating several ways to propagate new plants, including growing plants from seed (wheat, rye grass, and alfalfa, a legume); bulbs (onions and garlic); stems (white potatoes and cuttings from various plants); and roots (carrots and radishes). The scientific thinking processes children will be using in their investigations include observing properties and structures of plants; communicating discoveries orally, in writing, and through drawing; comparing the development of plants over time; and organizing their findings in order to draw conclusions about how different plants reproduce. We will be making a terrarium and comparing the needs of plants and animals. We will be looking at features of different plants and animals and studying how those features help the plants and animals live in different environments. In addition, we will learn how animals use different teeth to bite, cut, and chew their food. I hope you will encourage your child to share his or her growing knowledge of plants and animals at home, and perhaps engage in a few plant-growing activities at home as well.

If your child has specific plant allergies, please let me know so I can plan accordingly.

We will root cuttings in a couple of weeks. If you have one or more plants that you could donate to the science program at that time, I would appreciate it. I could use Swedish ivy, English ivy, coleus, spearmint, or Wandering Jew plants. Thanks. We're looking forward to lots of fun and lots of learning as we explore a world full of plants and animals!

Sincerely, _____



WANTED: PLANTS OR STEMS

Dear Parents,

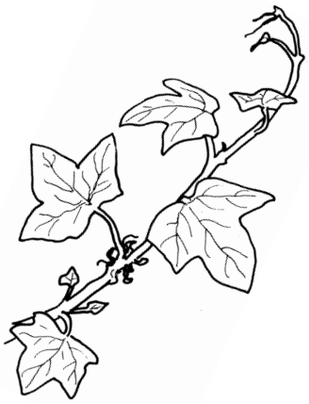
We have been growing new plants from seeds. Can we grow new plants from other parts of old plants? Curious scientists want to know!

Our class is in search of whole plants or stems from any of the plants below. Cuttings 10–24 inches long, with leaves, would be appreciated.

Please send any stem cuttings in a plastic bag by_____.

Thank you.

English Ivy

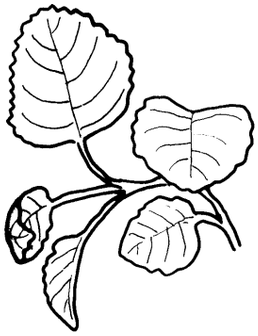


Spearmint

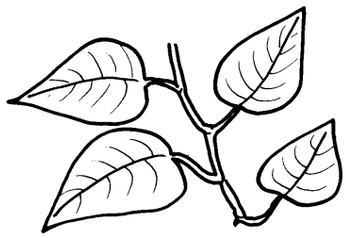
Wandering Jew

Coleus

Swedish Ivy



Pothos



CENTER INSTRUCTION CARD A

HABITAT MATCH

MATERIALS

Habitat mats
Organism cards for each habitat

SET UP THE CENTER

Select the mats and the cards to be used at the center. Lay the mats out on the center of the table. Keep the cards in separate stacks on top of each mat.

GUIDE THE ACTIVITY

1. **Introduce the Activity.** Show the habitat mats and the eight cards that go with each habitat. Tell students they can do some activities with the mats and cards. They can be played in pairs or in groups of three to six. Describe the procedure, modeling the actions as you proceed.

Get to Know a Habitat

a. Each person chooses a mat and the matching cards.
b. Everyone looks at their eight plants and animals on the cards, and sees how they match to the habitat.
c. In turn, each student names their habitat and two things that live there.
d. Continue to play until everyone has had a turn.

Habitat Match

a. Each person chooses a mat and the matching cards.
b. Take all the cards from students and shuffle them. Each player gets eight new cards, which may not be associated with the habitat on their mat.
c. In turn, each student calls out two cards. Someone with the matching habitat should say "Match" and correctly place it on their mat.
d. Each person will take turns calling out two cards until all cards have been correctly matched to their habitat.

Guess My Plant or Animal (Played in pairs with one mat and eight cards)

a. The pairs sit side by side with the habitat mat in front of them and the eight cards spread face up around the mat.
b. One person thinks of one of the cards, but does not tell their partner.
c. The partner has to ask yes or no questions to guess which plant or animal the person is thinking of.

CENTER INSTRUCTION CARD B
HABITAT MATCH

Find It

a. Have students pick a new habitat mat. Mix all the cards for those mats and give each student five cards. The rest of the cards go in a stack in the middle of the table.
b. Each student looks for two cards that go with their habitat. If they can, they put the pair on their mat.
c. If they don't have two, they can ask anyone if they have a card that goes with their habitat. If the person has one, they hand it over. Otherwise they say "Find it," and the player picks a card from the stack to try to find a pair. You can pick only one card and then it is the next person's turn.
d. Each person gets a turn, until students find all the cards that match their habitat mat.

Group the Animals and Plants

a. Mix the cards for as many habitats as there are students playing.
b. Give each student eight cards.
c. The first person puts one of their cards in the middle of the table.
d. The next person puts down a card that matches the kind of animal it is. For example, if the first card is a hawk, the second person puts down another bird. Other animal groups are reptiles, amphibians, mammals, mollusks, insects, and annelids (earthworms). If it's a plant, then the next card must be a plant.
e. If the next player doesn't have a card that matches, the player puts down a different card.
f. The next person tries to match the first group or the second group.
g. Play continues with new groups being established, and matches being made until all the cards are sorted correctly.

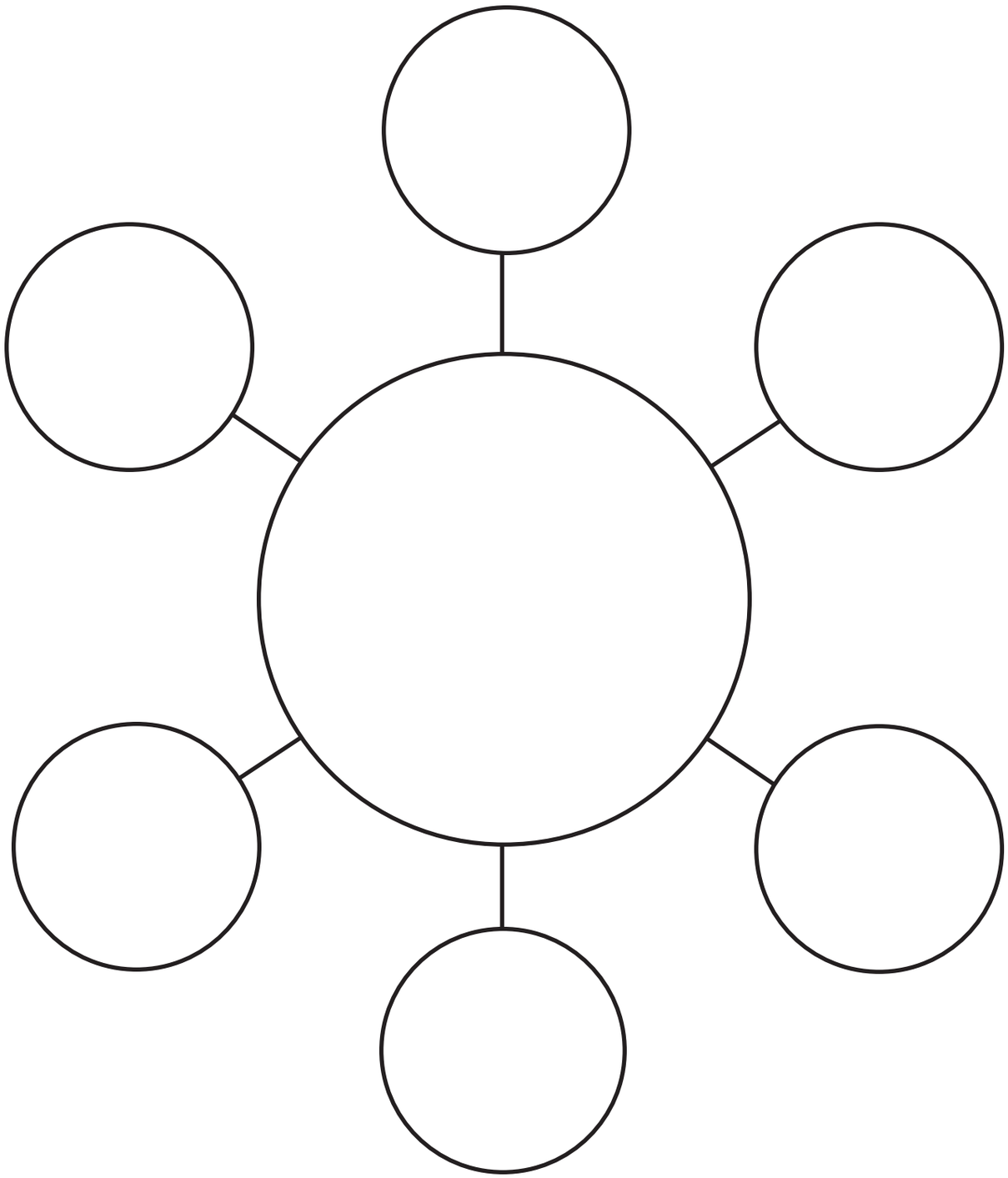
2. **Explain and Guide the Activities.** Depending on the number of students and their interests, suggest different activities to play. Explain the procedure and help guide the play. Students may need help reading some of the information on the cards. Some students may want to make up their own games.

3. **Prepare the Center for the Next Group.** When time is nearly up, ask students to help sort the cards into their habitat groups and place them on top of the appropriate mat for the next group of students.

Name _____ Date _____

MATH EXTENSION A

INVESTIGATION 1: GRASS AND GRAIN SEEDS

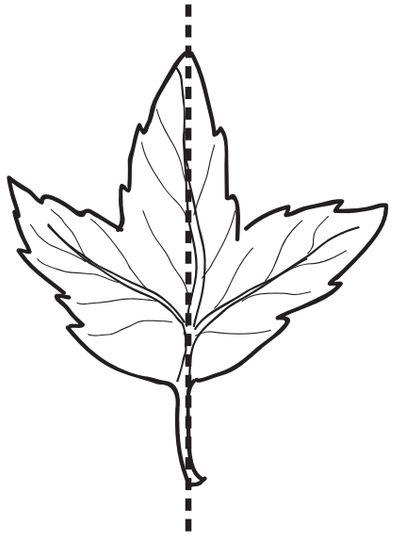


Name _____ Date _____

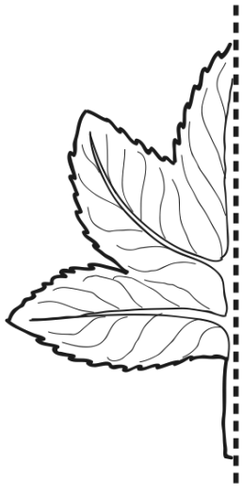
MATH EXTENSION B

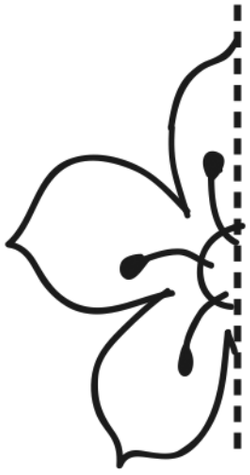
INVESTIGATION 1: GRASS AND GRAIN SEEDS

Many flowers and leaves look the same on both sides, like this.

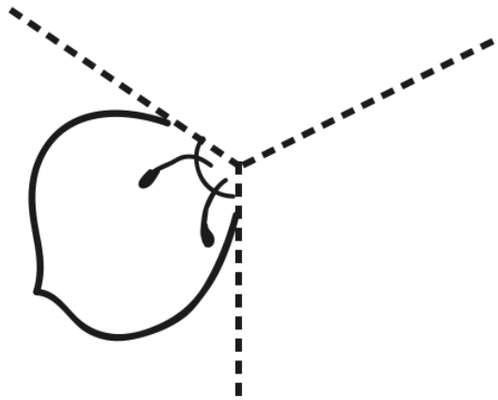


1. Color in the half leaf and half flower.
2. Copy the pattern on the other side to make a whole flower or leaf. Color it.





3. Try a three-part pattern!



Name _____ Date _____

MATH EXTENSION A

INVESTIGATION 2: STEMS

Jia found a potato. She saw four nodes on it. She cut it into four parts and planted it. She watered it and waited.

Stems and leaves grew from each potato part. Underground, each potato part grew five new potatoes.

How many new potatoes did Jia grow in all?

Name _____ Date _____

MATH EXTENSION B

INVESTIGATION 2: STEMS

Pretend that your class has an old ivy plant that is growing too big. If every student in your class makes a new plant from an old stem, how many plants would you have?

If your class sells all the new plants for a quarter each, how much money would your class have?

Name _____ Date _____

MATH EXTENSION A

INVESTIGATION 3: TERRARIUMS

Amelio and Amy each set up a terrarium at home. When Amy counted the plants and animals in her terrarium, the total was 17. When Amelio counted the plants and animals in his terrarium, the total was 6 less than Amy's. How many plants and animals did Amelio have in his terrarium?

Amelio and Amy decided to put their plants and animals together in a larger terrarium. How many plants and animals in all will be in this new terrarium?

Name _____ Date _____

MATH EXTENSION B

INVESTIGATION 3: TERRARIUMS

Another class is setting up terrariums in their room. They have a total of 20 worms to place in their four terrariums. What are different ways they could put the 20 worms in the terrariums? (The number of worms does not have to be the same in each terrarium.)

Name _____ Date _____

MATH EXTENSION A

INVESTIGATION 4: BULBS AND ROOTS

Jeremy wanted to plant some bulbs in a barrel. He needed to plant them in the fall so they would bloom in the spring.

He went to the nursery and bought five tulip bulbs and six daffodil bulbs. In the spring, all of the bulbs grew except for one tulip and one daffodil.

How many bulbs did Jeremy have blooming in the spring?

Name _____ Date _____

MATH EXTENSION B

INVESTIGATION 4: BULBS AND ROOTS

Garlic bulbs grow in a bunch called a head. A head of garlic can be split into six little bulbs.

Each little bulb can grow into a plant. When the plant is grown, garlic flowers bloom. Before the plant dies, it makes a new head with six little bulbs under the ground.

Letitia had one head of garlic. She planted each of the bulbs and soon had flowers blooming in her garden.

She wanted more plants blooming in her garden next year. She dug up the garlic heads after the plants died so she could save the bulbs.

How many bulbs do you think she will be able to plant next year?

Name _____ Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 1: GRASS AND GRAIN SEEDS

Wheat, corn, barley, rice, and oats are grass plants that are staple sources of nutrition for cultures around the world. The abundant seeds of those plants are the group of foods we call grains. You may have examples of grains in your kitchen, perhaps as whole grains of rice or a tortilla made from flour. Here are some places where another grain, corn, might be found in your kitchen.

tortillas frozen corn	cereal canned corn	bread popcorn	flour grits	muffins cornstarch

Have your child look for examples of grains in your home. He or she can list the examples or bring in a small labeled sample for a class display.

Wheat	Corn	
Rice	Oats	Barley

Name _____ Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 2: STEMS

In class, we are observing how stems grow and sprout. There are many plant stems that we enjoy at our table and see in the market.

Next time you go shopping with your child, please take this checklist and a pencil with you. Ask your child to check off any of the following stems that he or she can find. If you find others, write them down.

asparagus

brussels sprouts on a stem

white potato

red potato

broccoli

parsley

celery

artichoke (with stem)

_____

_____

_____

Name _____ Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 3: TERRARIUMS

In class, we have been growing new plants from seeds and from the stems of some plants. By making a simple, low-maintenance terrarium at home, your child can continue to make plant observations. You could plant the terrarium with rooted stem cuttings, seeds, potatoes (a modified underground stem), or yard transplants. Everything the plants need to live is placed inside the terrarium before it is sealed: water, soil, and air. Placed in a well-lit area, out of the sun, the terrarium plants will live untended for a long time.

MATERIALS

- 1 2-liter plastic bottle
- Soil
- Stem cuttings with roots, seeds, or small plants
- Scissors
- Gravel or pebbles

DIRECTIONS

1. Remove the label from a 2-liter soda bottle. Have an adult cut the bottle about 4 inches (10 cm) from the bottom. Leave the cap on.

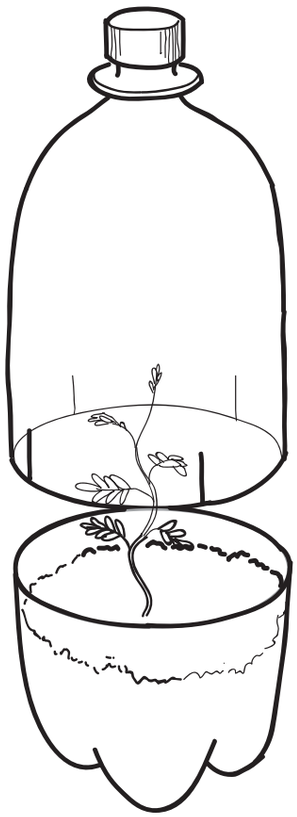
2. Cut four 1-inch (2.5-cm) slits along the bottom edge of the top part of the bottle.

3. Put a layer of gravel or small pebbles in the plastic base. Add a layer of soil. If you are planting seeds in the terrarium, fill the soil to near the top edge and plant your seeds.

4. Gently place your rooted cutting in the soil and fill more soil in around it.

5. Water the soil. Place the top section of your bottle on the bottom, fitting the slits over the base.

6. Place the terrarium in a well-lit area. Your terrarium plants have everything they need to live and grow.



Name _____ Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 4: BULBS AND ROOTS

Read the following story with your child. Then have him or her write an ending to the story, or dictate an ending for you to write.

Once upon a time there lived a poor family who worked hard every day. Papa would go to town and look for jobs. Peter would go to the nearby farms to milk cows, and his mother would mend clothes. Everyone worked hard to put food on the table for the evening meal. Everyone, that is, except Henry. Henry was too young to help Papa with his jobs, too afraid of cows to help his brother, and didn't know how to mend clothes.

One day Henry was sitting by the road to town when a farmer passed on his way to market. "Hello, Henry," called the farmer. "What are you doing sitting alone by the road?"

"Oh, hello," mumbled Henry. "I'm wishing I could help my family. Everyone works so hard so we can buy food for our supper. Everyone but me. I'm too young to help Papa, too afraid of cows to help my brother, and I don't know how to mend clothes with my mother. I'm afraid I'm rather useless."

"Now, Henry," replied the farmer, "no person is useless. We all have ways to help. Sometimes it is difficult to discover how." The farmer reached into his wagon and pulled out a small sack. He handed the sack to Henry and said, "Sometimes all we need is some help getting started and a little creativity. See what you can do with these to help your family. Good luck, Henry." The farmer continued on his way to market.

Henry looked in to the sack. He saw a potato, a carrot, and a handful of seeds. "How will one potato, one carrot, and some seeds help me or my family?" Henry wondered. "It's not much of a meal." But as Henry sat and thought, and thought and sat, an idea began to form in his head. As the idea grew, so did his excitement. "I know what I'll do with these!" exclaimed Henry, as he jumped up and ran home.

What will Henry do?

How will it help his family?