LETTER TO FAMILY

Cut here and paste onto school letterhead before making copies.

SCIENCE NEWS

Dear Family,

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, oat, ryegrass, 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 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 structures of different plants and animals and studying how those features help the plants and animals live in different environments. In addition, we will be going outdoors to investigate the diversity of plants and animals in our schoolyard. 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 or animal 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 *Tradescantia zebrina* plants.

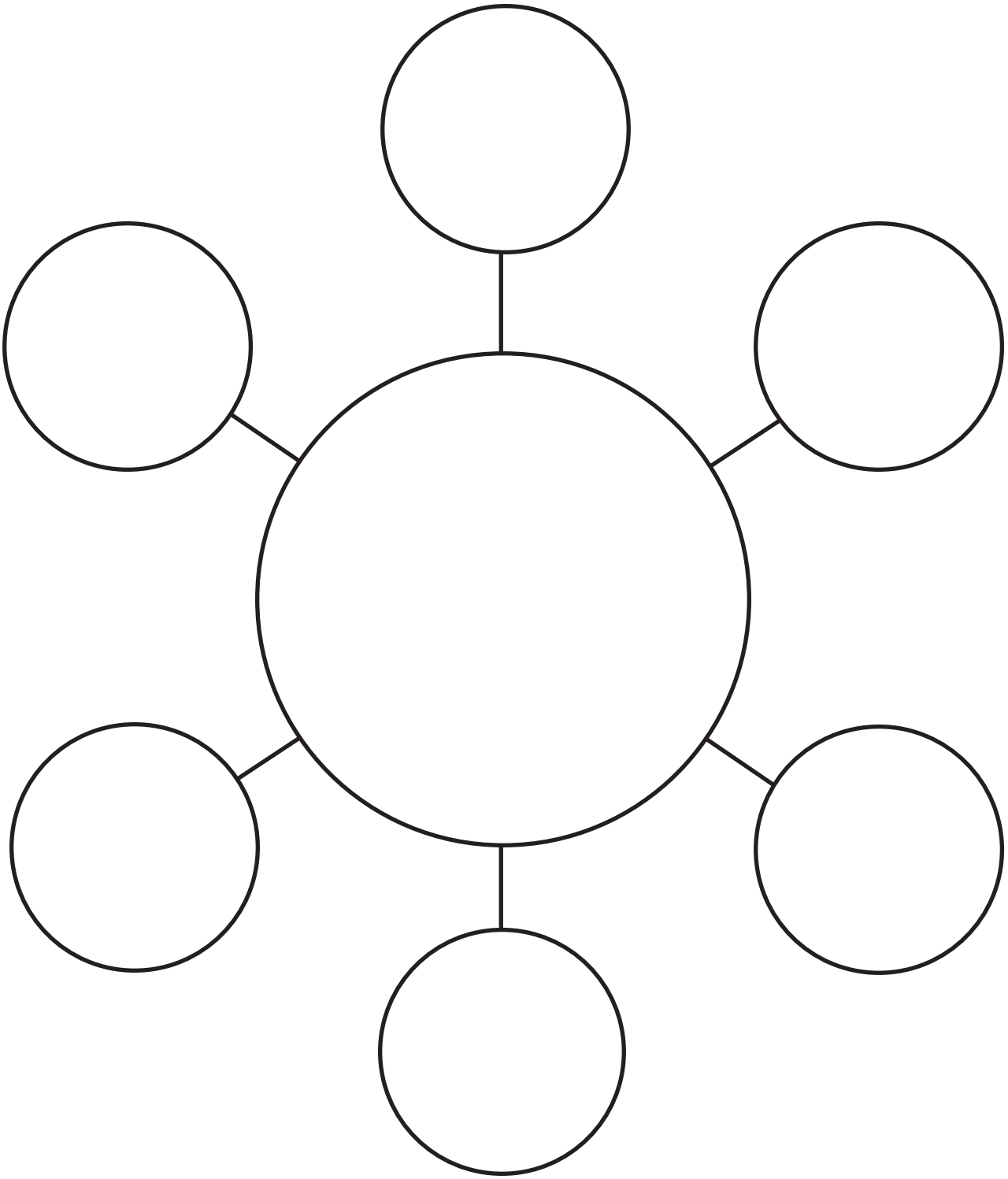
We're looking forward to lots of fun and lots of learning as we explore a world full of plants and animals! You can get more information on this module by going to www.FOSSweb.com.

Sincerely,

Name _____ Date _____

MATH EXTENSION A

Investigation 1: Grass and Grain Seeds

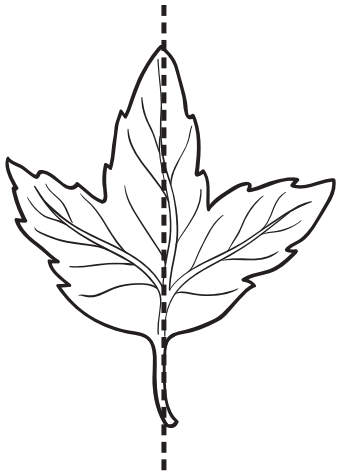


Name _____ Date _____

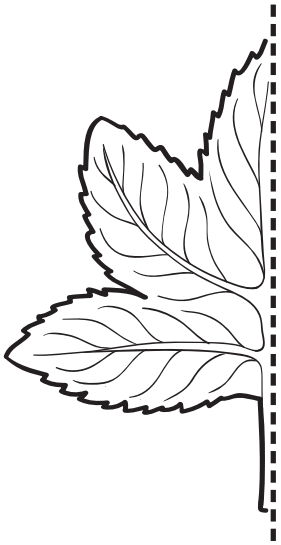
MATH EXTENSION B

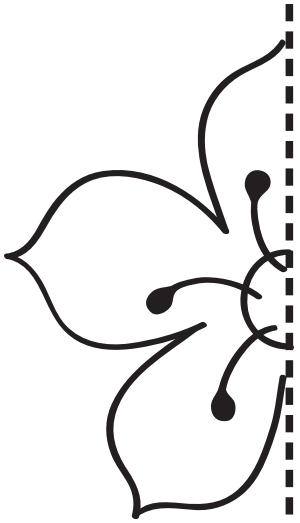
Investigation 1: Grass and Grain Seeds

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

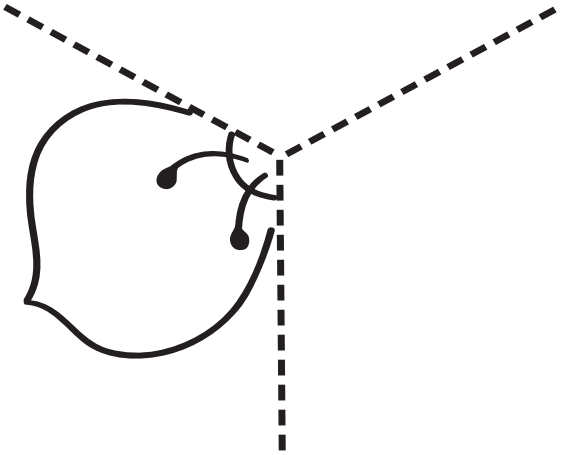


1. Color in the half leaf and half flower below.
2. Copy the pattern on the other side to make a whole flower or leaf. Color it.





3. Try a three-part pattern!



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	cereal	bread	flour	muffins
frozen corn	canned corn	popcorn	grits	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 _____

MATH EXTENSION A

Investigation 2: Stems

A girl 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 the girl 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?

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 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 _____

MATH EXTENSION A

Investigation 3: Terrariums

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

The girl and boy 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

Some students are setting up terrariums in their classroom. 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.)

HOME/SCHOOL CONNECTION

Investigation 3: Terrariums

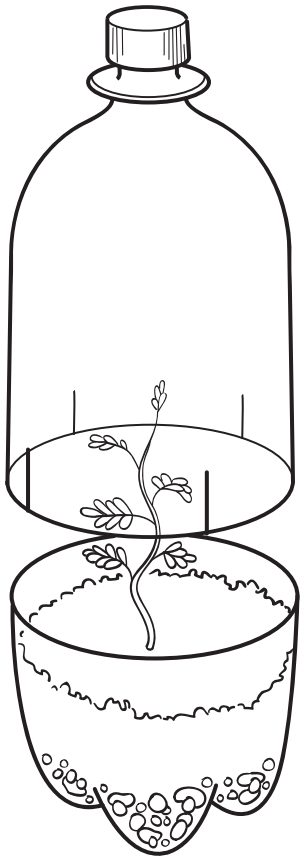
In class, we have been growing new plants from seeds and from the stems of some plants. By making a simple, low-maintenance terrarium at home, your child can continue to make plant observations. You could plant the terrarium with rooted stem cuttings, seeds, potatoes (a modified underground stem), or 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
- 1 Scissors
- Soil
- Gravel or pebbles
- Seeds, small plants, or stem cuttings with roots

Directions

1. Remove the label from a 2-liter plastic bottle. Ask an adult to cut the bottle about 10 centimeters from the bottom. Leave the cap on.
2. Cut four 2.5-centimeter 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 _____

MATH EXTENSION A

Investigation 4: Growth and Change

A boy 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 the bulbs grew except for one tulip and one daffodil.

How many bulbs did the boy have blooming in the spring?

Name _____ Date _____

MATH EXTENSION B

Investigation 4: Growth and Change

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.

A girl 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?

HOME/SCHOOL CONNECTION

Investigation 4: Growth and Change

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 into 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?