

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. 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. I hope you will encourage your child to share his or her growing knowledge of plants 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 (creeping Charlie), 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!

Sincerely, _____

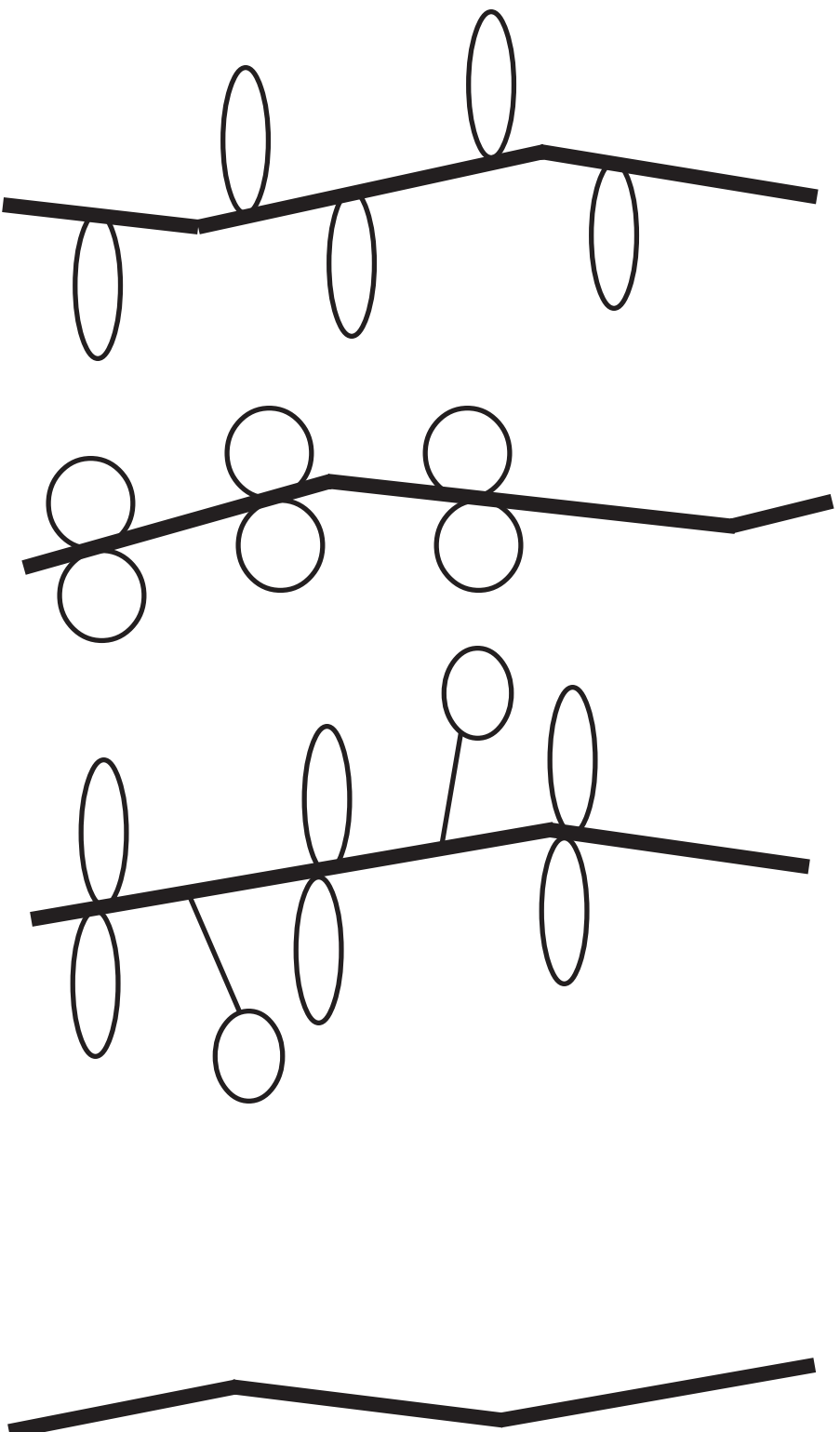


Name _____ Date _____

MATH EXTENSION A
INVESTIGATION 1: BRASSICA SEEDS

What is the pattern of leaves on each stem?
Draw three more leaves on each.

Make your own pattern
of leaves on this stem.



Name _____ Date _____

MATH EXTENSION B

INVESTIGATION 1: BRASSICA SEEDS

Sally and Jorge planted beans in their garden. They thought it would be interesting to compare the length of the stems that grew and the number of leaves that were on each stem. They made a table of their observations.

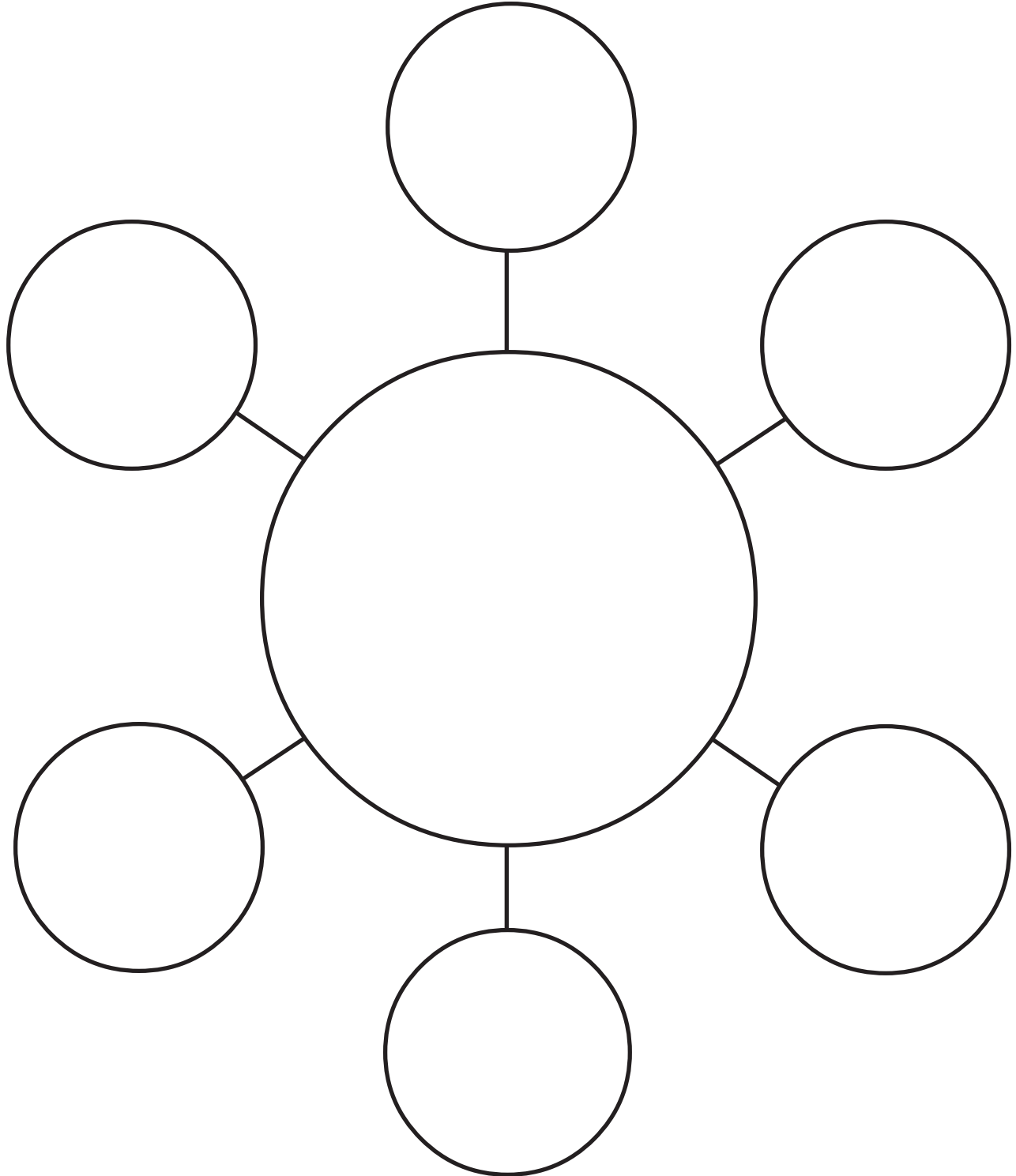
Can you find the number pattern in the lists? Predict which numbers will come next.

Day	Stem length	Leaves
1	0 cm	0
4	4 cm	2
7	8 cm	2
10	12 cm	4
13	16 cm	4
16	20 cm	6
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

Name _____ Date _____

MATH EXTENSION A

INVESTIGATION 2: GRASS AND GRAIN SEEDS

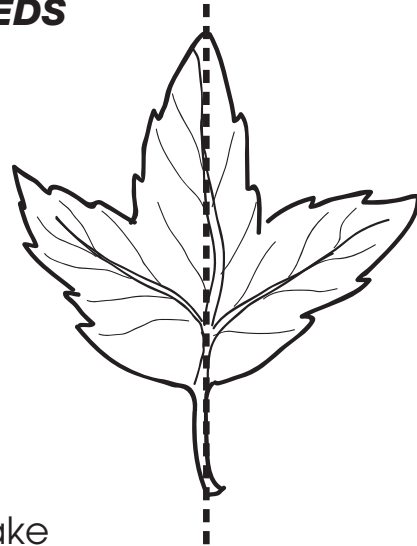


Name _____ Date _____

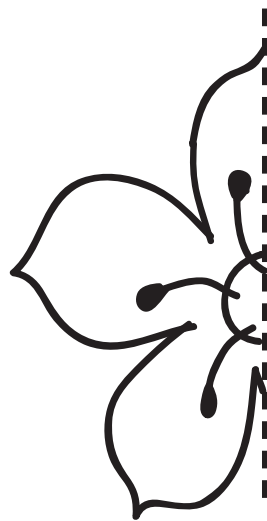
MATH EXTENSION B

INVESTIGATION 2: GRASS AND GRAIN SEEDS

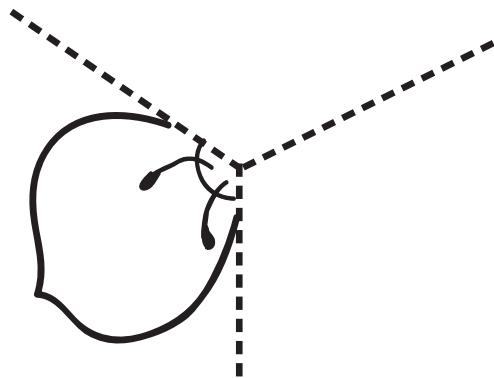
Many flowers and leaves look the same on both sides, like this.



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 3: STEMS

Joe found a potato. He saw four nodes on it. He cut it into four parts and planted it. He 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 Joe grow in all?

Name _____ Date _____

MATH EXTENSION B

INVESTIGATION 3: 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 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.

Rebecca 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: BRASSICA SEEDS

Dear Parents,

In class, we are observing special fast-growing brassica plants. The family of brassica plants includes many plants 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 brassica plants that he or she can find.

- | | |
|---|---|
| <input type="checkbox"/> mustard | <input type="checkbox"/> white cabbage |
| <input type="checkbox"/> brussels sprouts | <input type="checkbox"/> red cabbage |
| <input type="checkbox"/> kohlrabi | <input type="checkbox"/> collard greens |
| <input type="checkbox"/> bok choy | <input type="checkbox"/> kale |
| <input type="checkbox"/> turnips | <input type="checkbox"/> cauliflower |
| <input type="checkbox"/> broccoli | <input type="checkbox"/> chard |

Name _____ Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 2: GRASS AND GRAIN SEEDS

Dear Parents,

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 _____

HOME/SCHOOL CONNECTION

INVESTIGATION 3: STEMS

Dear Parents,

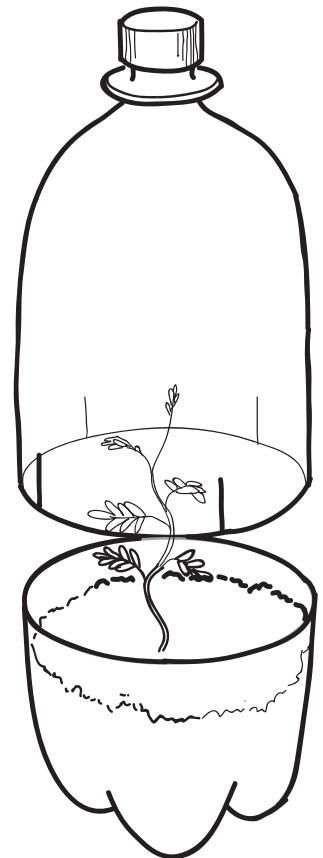
In class, we have been growing new plants from seeds and from the stems of some plants. By making a simple, low-maintenance terrarium at home, your child can continue his or her plant observations. The terrarium can be planted with rooted stem cuttings, seeds, potatoes (a modified underground stem), 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, the terrarium plants will live untended for a long time.

Materials

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

Directions

1. Remove the label from a 2-liter soda bottle. Cut the bottle about 4 inches (10 cm) from the bottom. Leave the cap on.
2. Cut four 1-inch (2-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

Dear Parents,

Please 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 peasant 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?