

Mary, Mary, Quite Contrary

Mary, Mary, quite contrary,
How does your garden grow?
With silver bells and cockleshells,
And pretty maids all in a row.



Mary, Mary, Quite Contrary

INTRODUCTION

Read aloud the nursery rhyme. Read it again, this time inviting children to say it with you. Talk about what happens in the rhyme.

To jumpstart scientific thinking, display the art that accompanies the rhyme. Point out the plants in Mary's garden. Tell children that plants need soil, water, light, and air to grow. Invite children to share about their experiences in growing plants or working in a garden.



Continue with questions, such as:

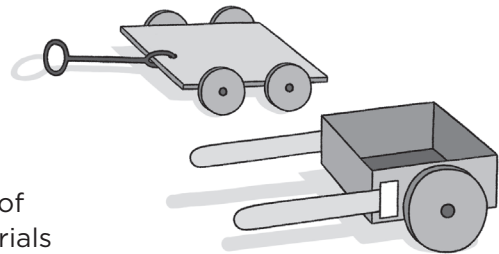
- ⚙ What tools are useful in planting a garden?
- ⚙ How might Mary get all of her garden supplies out to the garden in one trip?
- ⚙ Why do plants need water and sun to grow?
- ⚙ Which parts of a plant grow under the ground? Which parts grow above ground?

ACTIVITY 1

Garden Cart

Challenge: Design and build a garden cart that Mary can use to carry her garden supplies.

Tell children they will make a garden cart using their choice of materials. Invite children to draw their idea and list the materials they need on their planning sheet. Then have them do the activity. Afterwards, have children mark on their sheet whether or not their idea worked. Discuss which ideas worked, which didn't, and why.



DIRECTIONS

- 1 Gather the materials you need.
- 2 Make your garden cart. Use your idea from your planning sheet.
- 3 Test your cart. Does it roll? Can it carry some things, like paper clips?
- 4 If not, what changes can you do to make it work? Give it a try.

MATERIALS

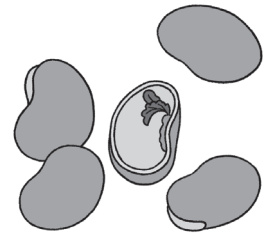
- Garden Cart planning sheet (p. 4)
- **cart body:** assorted food and gift boxes, tissue boxes, paper ice-cream cartons, juice cartons, chip canisters, plastic food containers, recyclable frozen dinner dishes, cardboard, thick foam sheets, rectangular foil pans
- **axles and wheels:** sturdy straws, dowels, round chopsticks, lollipop sticks; ribbon spools, cardboard circles, foam cup bottoms, sturdy plastic cup lids
- craft sticks, pipe cleaners, rubber bands, paper fasteners, paper clips
- tape, hole punch, scissors

ACTIVITY 2

Seed Examinations

Challenge: Explore the inside of a seed to find the different parts of the seed.

Display the “Inside a Seed” learning poster and discuss. Tell children they will open up and examine the inside of a seed to identify its different parts. They will then draw and label the seed on their recording sheet.



DIRECTIONS

- 1 Choose a lima bean seed.
- 2 Carefully open your seed. (It’s okay if the two sides come apart.)
- 3 Observe your seed. Use a hand lens. Can you find these parts: coat, root, food storage, and leaves?
- 4 If you need to, gently move the inside parts around so you can see them better. Use a toothpick.
- 5 Fill in your recording sheet.

MATERIALS

- Inside a Seed learning poster (p. 8)
- Seed Examinations recording sheet (p. 8)
- lima beans, presoaked overnight
- hand lenses
- toothpicks
- paper towels
- crayons

ACTIVITY 3

How My Garden Grows

Challenge: Grow a plant from a seed. Then track the plant’s growth over time.

Display the “A Plant Grows” learning poster and discuss. Tell children they will watch a seed start to grow in a planter. Then they will follow the growth of the plant. Have children draw the items they need on their recording sheet. Then have them do the activity and fill in their sheet as they track the growth of their plant over a few days.



DIRECTIONS

- 1 Moisten the paper towel. Wrap it loosely around your seed. Place in your planter.
- 2 Put the planter in a sunny window. Observe the seed for a few days. Spray water on the paper towel to keep it moist.
- 3 What happens to your seed? Record in your recording sheet.
- 4 Now, carefully remove your seed. Fill your planter about $\frac{2}{3}$ full with soil. Plant your seed in the soil.
- 5 Care for and observe your plant. Fill in your recording sheet to track its growth over time.

MATERIALS

- A Plant Grows learning poster (p. 9)
- How My Garden Grows recording sheets (pp. 6–7)
- lima beans, presoaked overnight
- clear plastic cups, jars
- paper towels
- spray bottle filled with water
- potting soil

Name: _____

Garden Cart

Challenge Design a garden cart that rolls. Then build your cart.

Draw your idea here.

**MY
IDEA**

What materials do I need?

Did my idea work?



yes



no

Name: _____

Seed Examinations

Challenge Open a lima bean seed. Look inside. Can you find the different parts of a seed?

I found these parts of my seed. (Check the boxes.)

coat

root

food storage

leaves

This is my seed and its parts.

(Draw or glue a picture here. Then label the parts.)

Name: _____

How My Garden Grows

Challenge It's time to start a garden! Set up an experiment.

Watch how a seed starts to grow.

What I Need

(Draw the three things you need.)

Seed

Paper towel

Planter

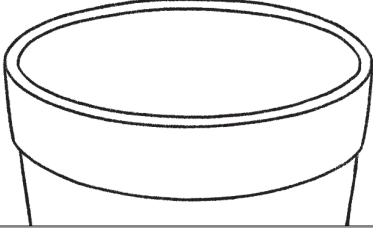
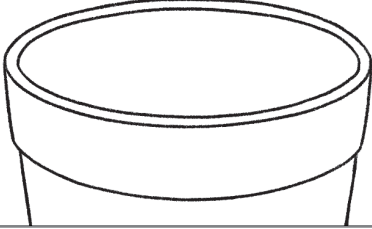
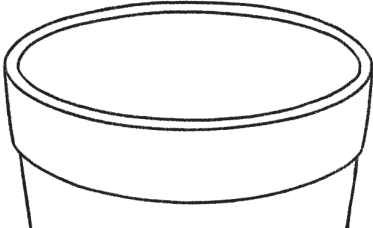
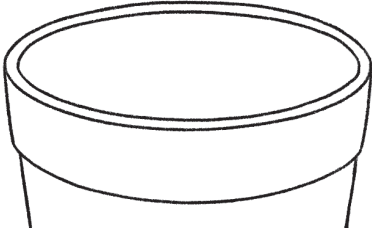
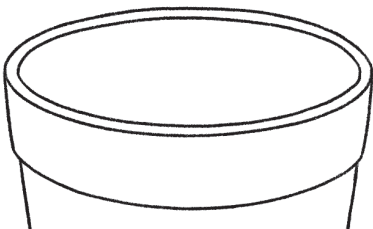
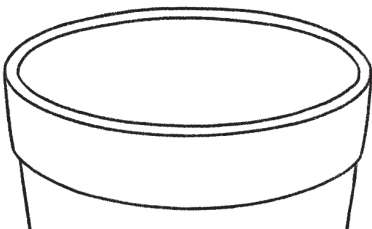
What Happened

(Show or write what happened to your seed.
Draw or glue a picture of your seed planter here.)

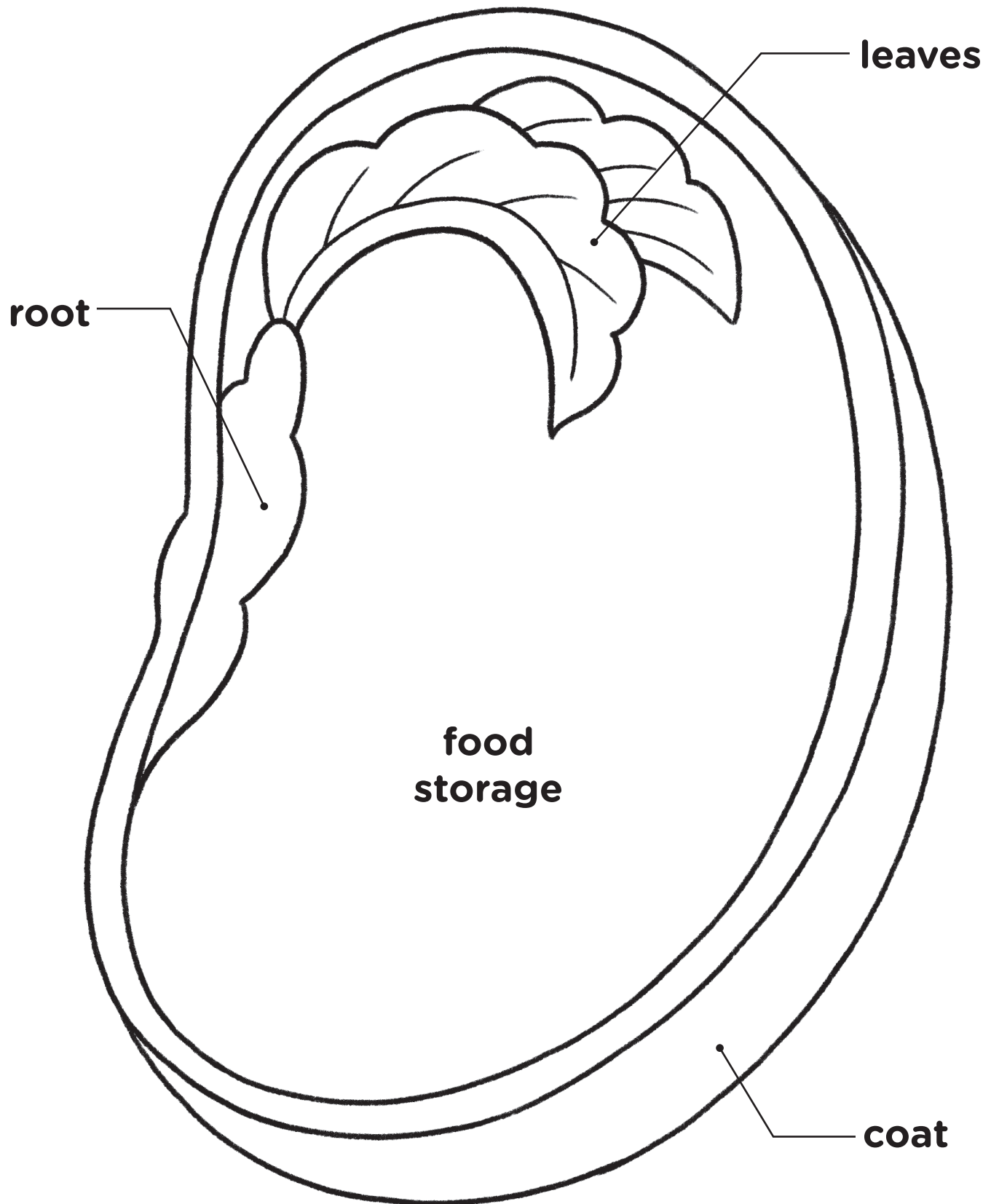
Name: _____

How My Garden Grows

Challenge Plant your seed in soil. Watch how your plant grows over time. Write or draw your observations below.

My Observations	
Day _____ 	Day _____ 
Day _____ 	Day _____ 
Day _____ 	Day _____ 

Inside a Seed



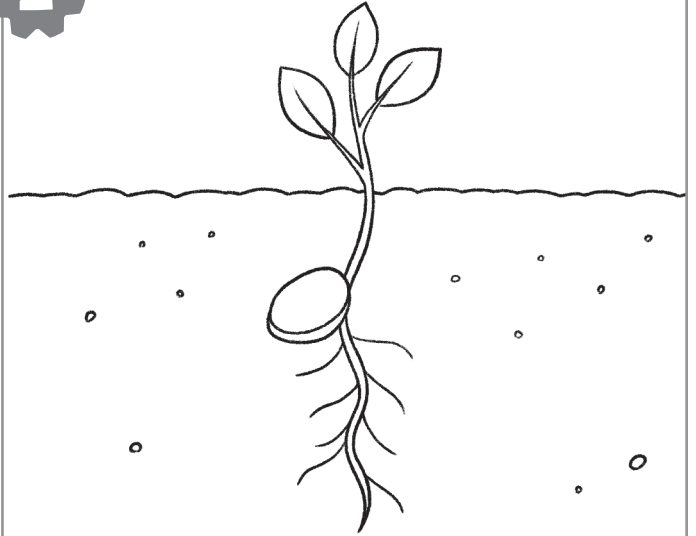
A Plant Grows

1



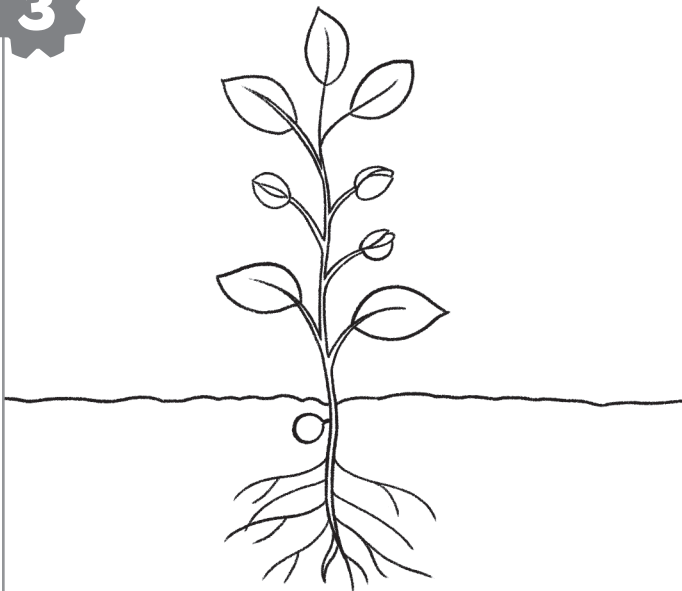
A seed is planted in soil.
It begins to grow.

2



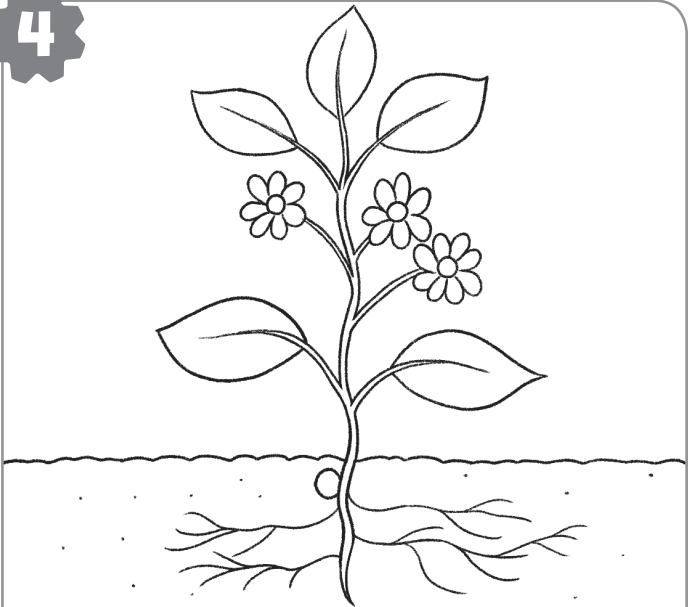
Roots grow into the soil.
Leaves begin to grow
above ground.

3



The stem grows taller.
More leaves grow.
Buds form on the stem.

4



The leaves grow larger.
The buds open up.
They are now flowers!