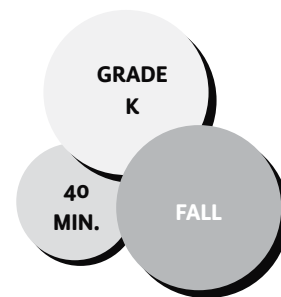


Fabulous Five: What a Plant Needs to Thrive

THEME: GROWING AND ACCESSING NOURISHING FOOD

Adapted with permission from Shelburne Farms' Cultivating Joy and Wonder



ESSENTIAL QUESTION

What does a plant need to grow?

LEARNING OBJECTIVES

- ✓ Students will be able to explain what a plant needs to grow.
- ✓ Students will be able to plant a seed.

CONCEPTS

air soil space sun water

ENGAGING THE CLASSROOM TEACHER

- During Action Steps 2–5, suggest that the teacher pass out the stations' beads to each student, helping them string the beads onto their pipe cleaner if they need the support.
- During Action Steps 6 and 7, suggest that the teacher support students as they scoop a container of soil or compost, bring it to the garden bed, and sprinkle it over the newly sown seeds.

LESSON DESCRIPTION

In this lesson, students go on a mystery journey, following clues around the garden while learning what plants need, before planting their own seeds. This lesson is designed to be taught in conjunction with Up, Up, Up We Grow!, Let Us Grow Lettuce!, and Bean Buddies.

MATERIALS

- Letter envelope
- Bag of beads for each station (1 bead for each student)
 - Yellow for Sun
 - Blue for Water
 - Clear for Air
 - Green for Space
 - Brown for Soil
- 1 For each student
 - Pipe cleaner
 - Popsicle stick
 - Large bean seed
- Station Clues and Station Images (pp. 64–74)
- Fabulous Five Worksheet (p. 75)
- 5 stakes (1 for each clue station)
- Pinwheel, make your own or purchase
- 10–15 ½ quart containers or plant pots (for carrying finished compost to garden bed)
- Finished compost (bagged or from garden)

PREPARATION

- Prepare clue stakes, laminating and stapling pictures to the stakes. Tape the bag of corresponding beads to each stake as well.
- Set up locations for each clue in the scavenger hunt.
 - For the sun station, choose the sunniest spot in the garden or a place where sunflowers are planted.
 - Make the water station at a garden bed in need of water. Fill watering cans for

students to use at this station.

- › The air station should be in a wide open space in your garden where students will have plenty of room to do jumping jacks.
 - › Make the space station a couple garden beds where students can plant their seeds. Use popsicle sticks to indicate how far apart your seeds should be spaced from each other.
 - › The soil station can be at your compost pile if you have one.
- › Place bean seeds into an envelope with the first clue.

ACTION STEPS

1. Seeds and Clue 1: Gather students in a circle and say, *My friend is a farmer, and she gave me this special packet of bean seeds. She told me to share them with a special group of kids, but I'm not sure what I'm supposed to do with them.* Pass out the seeds to each student, and when your envelope is empty pretend to theatrically discover the first clue, saying, *Wait! There's a message here.* As you read each clue, be sure to read slowly, emphasizing important words and using hand gestures to aid students' cognition. Read aloud the first clue and ask students, *Where do you think our seeds want to go?* (Somewhere sunny!) Tell students to be sure to hold onto their bean or put it in their pocket if they have one. **(10 min.)**

2. Sun and Clue 2: Guide students to the next clue, letting them mostly lead the way. Once you find the sun stake, have students take a moment to bask in the sun with their eyes closed, saying, *Let's warm up our seeds and ourselves.* You might ask students to take a couple breaths in and out to savor the sunny

moment (if it's a sunny day!). Then have the classroom teacher or volunteer pass out a pipe cleaner and yellow bead to each student, and explain that this represents the sun, while you read the next clue. Ask students, *What are our seeds telling us they need in addition to sun?* (water) **(5 min.)**

3. Water and Clue 3: Have students lead you to the water stake and say, *Now that we know plants need water, let's help these plants by watering them.* Have students take turns with watering cans, watering a garden bed close to the water stake. Meanwhile, pass out blue beads to represent water. Once everyone has had a turn, read aloud the third clue, pausing to allow students to fill in the blank by saying "air." **(5 min.)**

4. Air and Clue 4: Once at the air station, say, *When I say "go!" we're going to do ten jumping jacks. Ready? Go!* Ask students how they feel, and point out, *When our bodies work hard, we breathe deeper because we need air, just like our seeds do.* Pass out clear beads, and read the next clue, again allowing students to fill in the blank by saying "space." **(5 min.)**

5. Space and Clue 5: Once students find the space station, explain that you think this is where the seeds are ready to be planted! Ask students to put their arms out to show how much space they like around their body, and explain that plants need their space too. Show students with your hands how far apart their seeds should be spaced from each other, and explain how they should pull out a popsicle stick and plant their seed in its place to make sure it has enough space. Show students how deep they should plant their seed using your

finger and ask them all to point to the depth on their finger as well. Tell students to place seeds more shallow than their normal depth to account for the compost students will add to the bed. As students finish planting their seeds, pass out the green bead and then read aloud the final clue. **(5 min.)**

6. Soil: At the soil station, show students how to take a scoop of compost, and explain that they'll bring this back to where they planted their seed. If you have a thriving compost system, take time to show students some interesting features before completing the task. **(5 min.)**

7. Nurturing Our Seeds: Back at the space station, demonstrate how to gently sprinkle the compost over the garden bed, and gently pat down the soil. Then have students water their seeds. Ask, *Have we given our seeds all they said they needed? Let's see.* Go through a checklist of all the needs, asking students to determine whether their seed has them. **(5 min.)**

REFLECTION

Have students discuss the following questions in small groups, then share with the class: **(5 min.)**

Social and emotional learning

- *How did it feel to plant a seed and give it what it needs?*
- *Ask yourself: Was I safe and respectful in the garden today?*

Check for understanding

- *What are the things you need to grow? How are they the same and different from plants?*

ADAPTATIONS

Dress Up a Plant Variation: As a way to engage students at the beginning of the lesson, play Dress Up a Plant, as described in FoodCorps lesson "Plant Part Mystery," where you or the classroom teacher are dressed up by the students to resemble a plant. Have a bag of props and costume material for them to choose from to ensure the plant has roots, a stem, leaves, flowers, etc. Then once the plant is fully dressed, have them theatrically drop the first clue and say, *The plant is giving us a message!* Then continue with the hunt.

Worksheet Extension: Have students complete the Fabulous Five Worksheet, coloring and labeling each thing a plant needs. Write together as a class, displaying the words so students can copy them.

ACADEMIC CONNECTIONS

Next Generation Science Standards, Life Science Disciplinary Core Idea

NGSS LS1.C

Organization for Matter and Energy Flow in Organisms

All animals need food in order to live and grow.

They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)

Seed

Clue 1

For me to grow big and strong,
You'll have to help me along.
Five things I need to stay alive—
We'll call them the **fabulous five!**
The first will surely help me wake.
It's cold in here for goodness sake!
I must warm up and feel the light—
Take me where it's warm and bright.

Sun

Clue 2

I'm much warmer, thanks a bunch,
But now I think it's time for lunch.
I make my own food whenever I'm hungry,
But the problem is, I'm really *thirsty*!

Look around—you need to think,
and find something for plants to drink.

Water

Clue 3

You need me, and I need you!

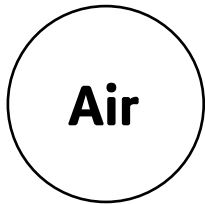
Now for your third clue:

We eat and drink and need to share,
'Cause both of us must breathe the

_____.

Look around—think and observe.

Can you see where wind is pushing air?



Clue 4

Even though I'm little now,
I'll soon be big enough—somehow.
I'll grow with others (it's not a race).
Just don't plant us too close,
I need my _____.

Look around! You'll see a sign,
showing plants with room, growing fine.

Space

Clue 5

Sun, water, air, and space —
Are things I need to live.
But there's one more,
It's dark and brown,
Just under your feet,
So please look down,
It's _____!



Soil

The Fab 5!

Sun

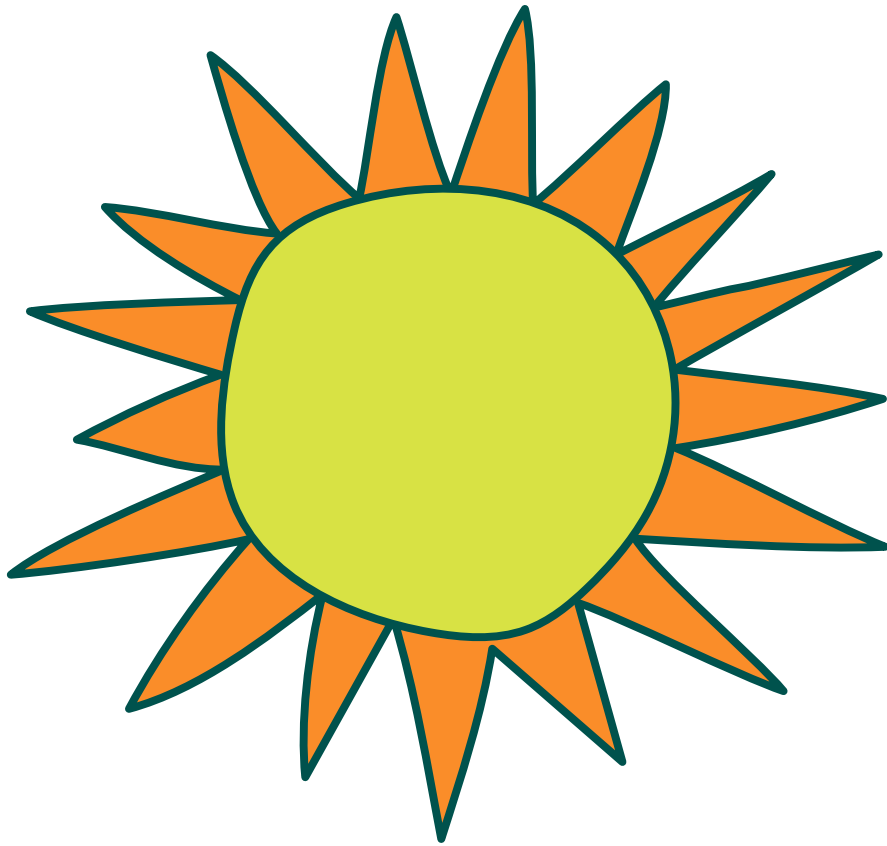
Water

Air

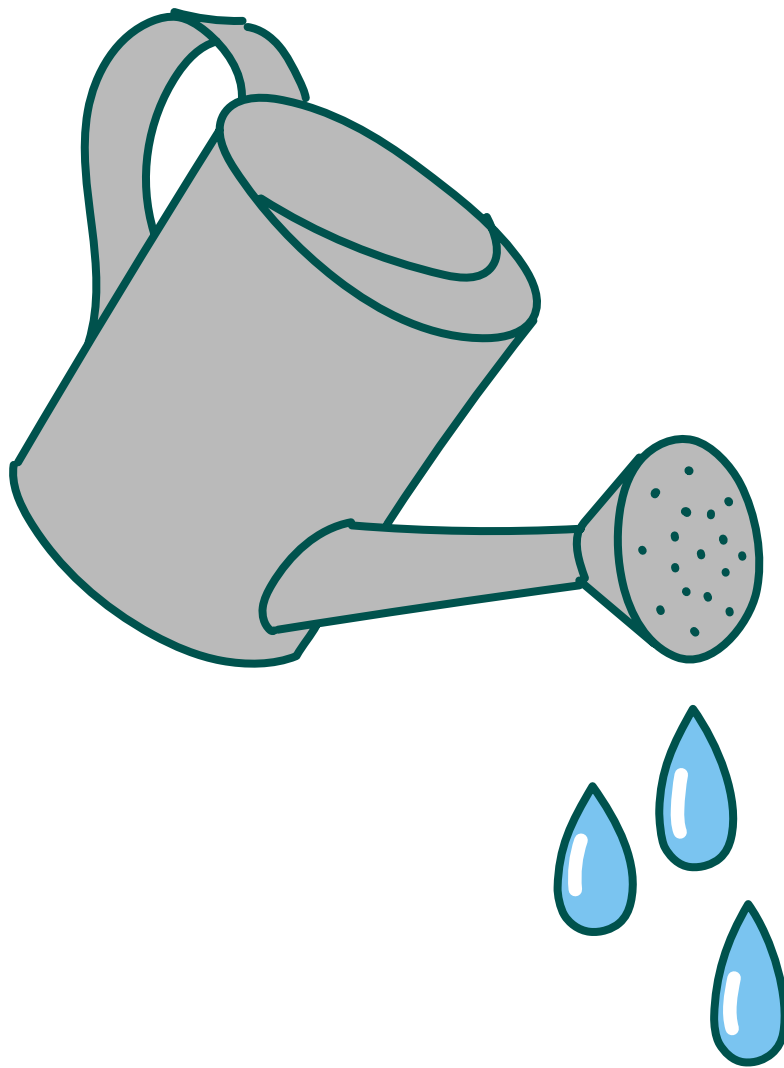
Space

Soil

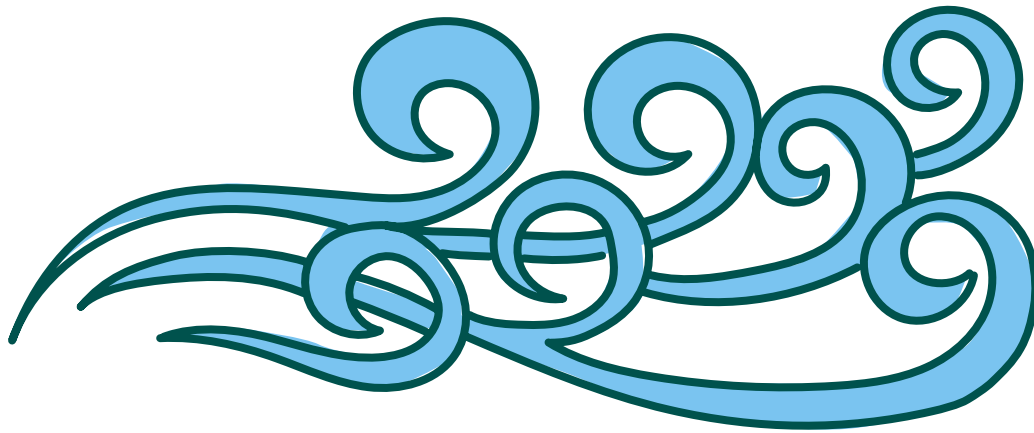
Plant your seeds!



SUN



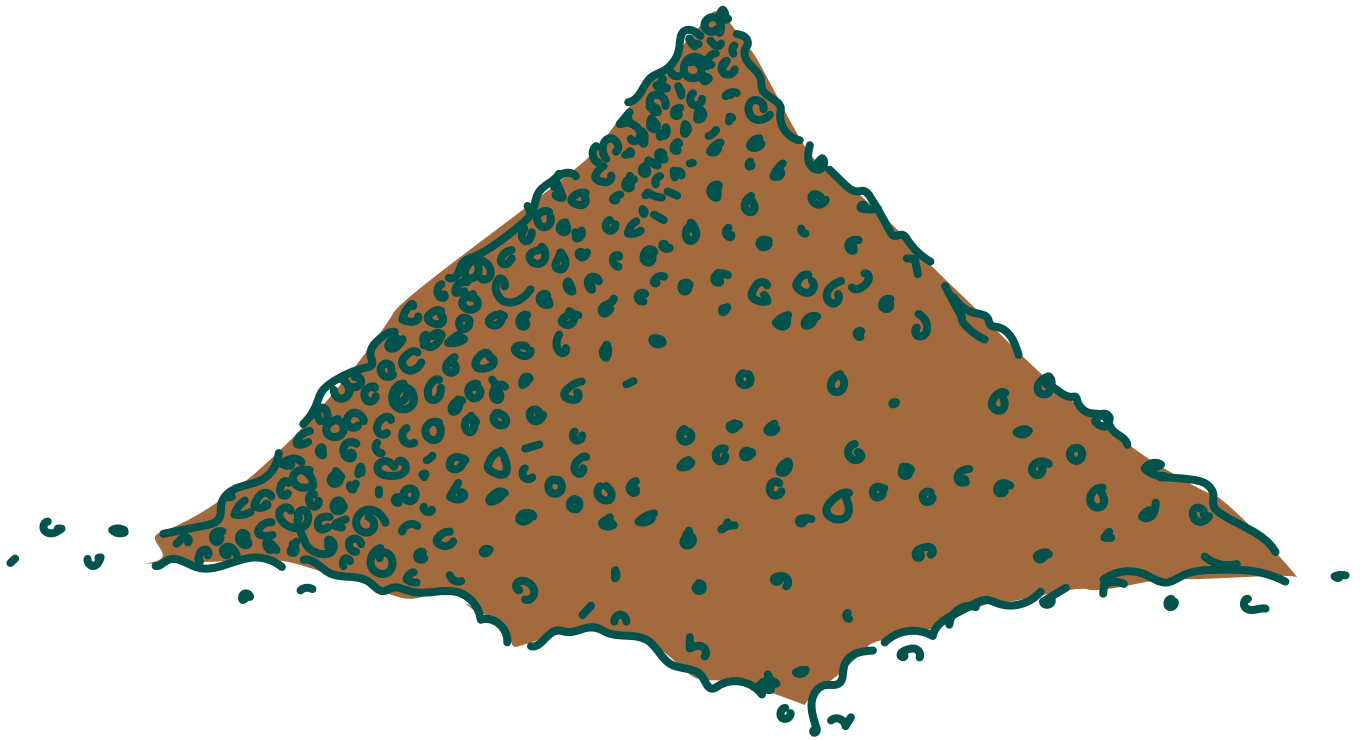
WATER



AIR



SPACE



SOIL

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