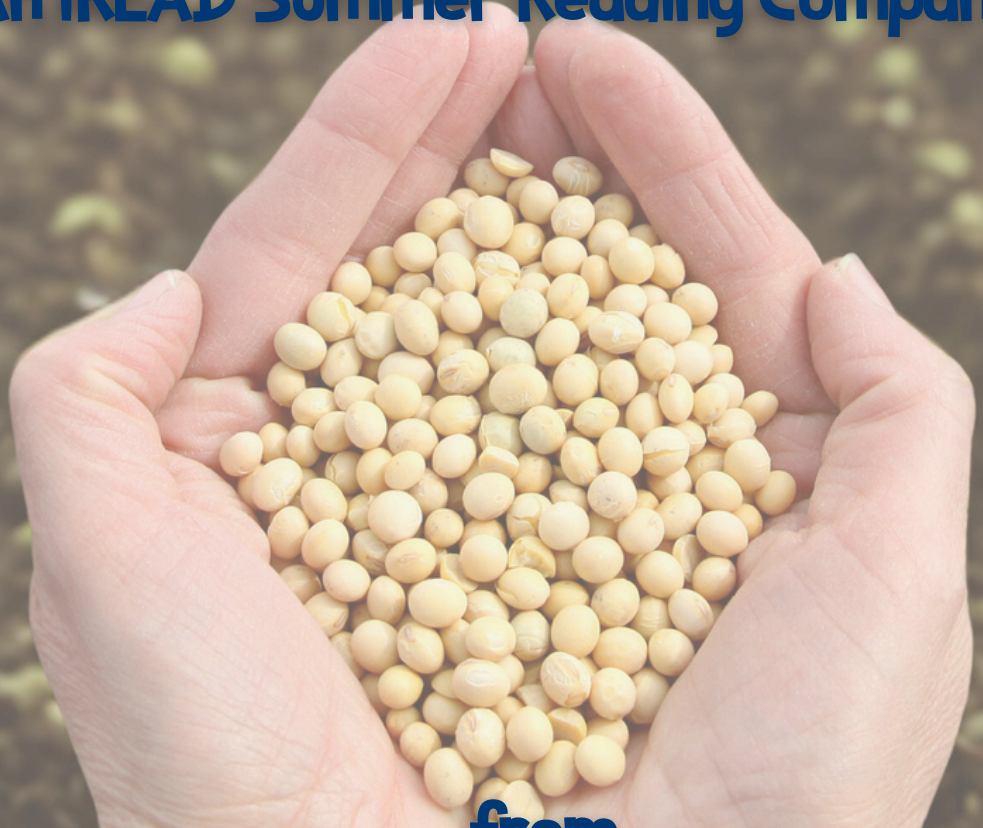
PLANT A SEED, READ At Your Library

Summer 2026

An iREAD Summer Reading Companion



from

Illinois AGRICULTURE in the Classroom℠

PLANT A SEED, READ At Your Library Summer 2026

An iREAD Summer Reading Companion from Illinois AGRICULTURE in the Classroom℠

Ag-Accurate Book Recommendations:	Accompanying IAITC Lesson:
"Tops & Bottoms" by Janet Stevens	Tops and Bottoms Lesson: Teach students about how we eat different parts of different plants in this fun lesson.
"Here in the Real World" by Sara Pennypacker	DIY Seed Tape: Connect concepts of math and gardening as students make their own "seed tape" for a spring garden.
"Full of Beans" by Peggy Thomas	Beanie Baby Lesson: Teach students about seed germination with this Ag in the Classroom classic!
"Oh Say Can You Seed?" by Bonnie Worth	Garden in a Glove Lesson: Learn about how different seeds germinate with this fun "hands"-on lesson.
"The Tiny Seed" by Eric Carle	Growing Letters Lesson: Encourage writing practice for your students while also learning about seed germination and plant growth.
"Worm Makes a Sandwich" by Brianne Farley	Classroom Vermicomposting: Fascinate your students with the exciting world of vermicomposting -- compost made by worms!
"Up in the Garden and Down in the Dirt" by Kate Messner	Throw & Grow: Students can help create new habitat for pollinators by creating (and tossing!) their Throw and Grows.
"The Pie that Molly Grew" by Sue Heavenrich	Pumpkin Chain Activity: Teach students about the life cycle of pumpkins with this fun and engaging activity.
"Bread Lab" by Kim Binczewski and Bethany Econopouly	Wheat Milling Activity: Show students how flour is made with this engaging look into wheat and milling.
"A Fruit is a Suitcase for Seeds" by Jean Richards	My Little Seed House Lesson: Show students the basics of seed germination with this fun activity.
"The Soil in Jackie's Garden" by Peggy Thomas	Soil Sam Lesson: Teach students about seed germination and the difference between monocots and dicots with this fun and silly extended activity.

Find all these lessons and more at https://iaitc.co/iread26

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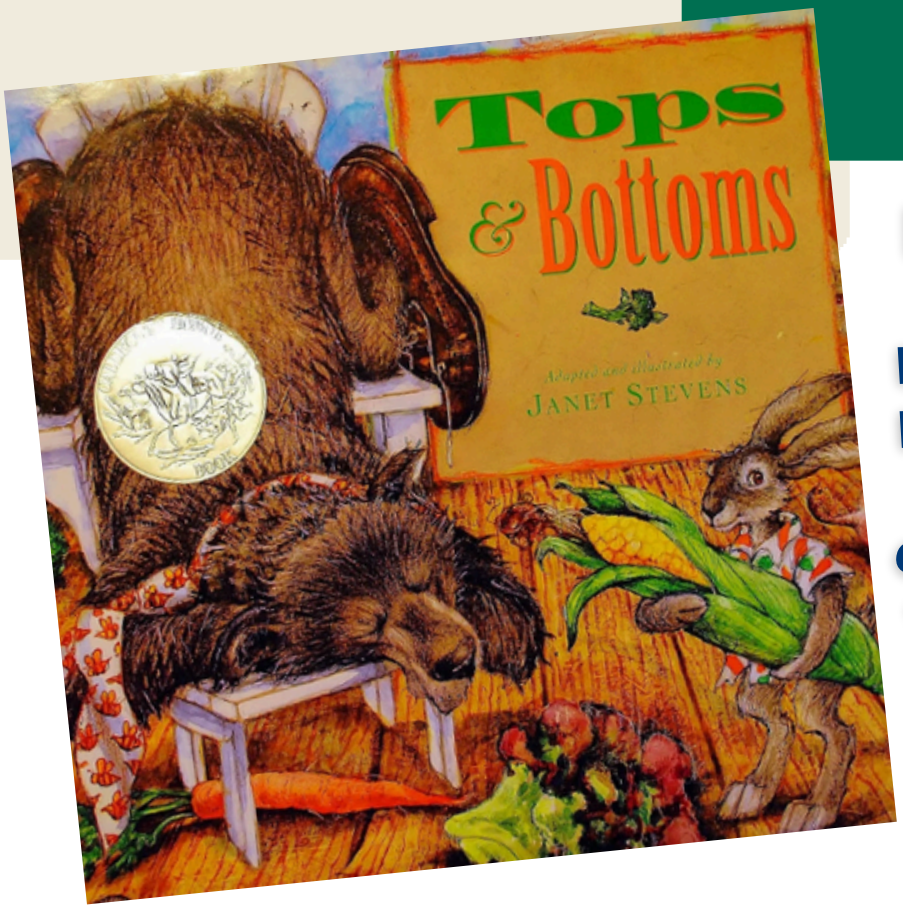


"TOPS & BOTTOMS"

Janet Stevens

Hare solves his family's problems by tricking rich and lazy Bear. With roots in American slave tales, Tops & Bottoms celebrates the trickster tradition of using one's wits to overcome hardship.

TOPS AND BOTTOMS

Teach students about how we eat different parts of different plants in this fun lesson that pairs with "Tops and Bottoms", by Janet Stevens.

See following page(s) for lesson plan!

Science Literacy

Tops and Bottoms

Grade Level
2-5

Length of Lesson
45 minutes

Objective
To help students have a better understanding of how garden vegetables grow and what part of the vegetable they can eat.

Materials Needed
- Copies of the vegetable template
- Hole punches
- White paper plates (2 per student)
- Scissors
- 2 Paper fasteners (brads)
- Glue
- Colored pencils or crayons

Standards
Common Core
CCSS.ELA-Literacy.RL.K.9; RL.K.10; RI.K.9; RI.K.10; RF.K.1; W.K.2; W.K.8; SL.K.2; SL.K.4; SL.K.5

NGSS
K-LS1-1; K-ESS3-1

Lesson Summary
This lesson is a fun, hands-on activity that uses paper plates and deepens student understanding of how different vegetables grow. Students will also learn that we eat different parts of different vegetables!

Suggested Sequence of Events:
1. Read through the Illinois AITC Specialty Crops Ag Mag. Interactive online versions can be found on our website.
2. Complete the activity following the procedures:
   - Read "Tops and Bottoms" by Janet Stevens.
   - Ask students to think of vegetables they eat. Together, list them on a chart. Emphasize that vegetables are plants grown for food. It may also be necessary to emphasize the difference between fruits and vegetables as the list is made.
   - Have students color and cut out the vegetables from the vegetable template.
   - Next, have students fold one plate in half and draw a line down the center of the plate. Color one half of the plate blue and the other half brown.
   - Now have students glue the vegetables on the colored plate. The blue space will serve as the sky, so anything that grows on "top" should be placed on the line "growing" into the blue, anything that grows from the "bottom" should be placed on the line "growing" into the brown side of the plate.
   - On the second paper plate, write the words "Tops" and "Bottoms" in their corresponding place on the plate. Now fold the plate in half and cut along the fold.
   - On the left side of the first plate (the one containing the vegetables) place a hole punch about 1/2 inch from the edge.
   - Lastly, place the two halves labeled "Tops" and "Bottoms" on top of each other and place a hole 1/2 inch in on the left side. This hole should line up with the decorated plate. Line all the holes up and place a brad to secure the plates.
   - Now the bottom plate should have a cover. When the "Tops" is pulled up it should reveal the crops that grow on top and the same with the "Bottoms."
5. Whole class discussion and reflection of activity. Pair students together and have them share their tops and bottoms with their partner.

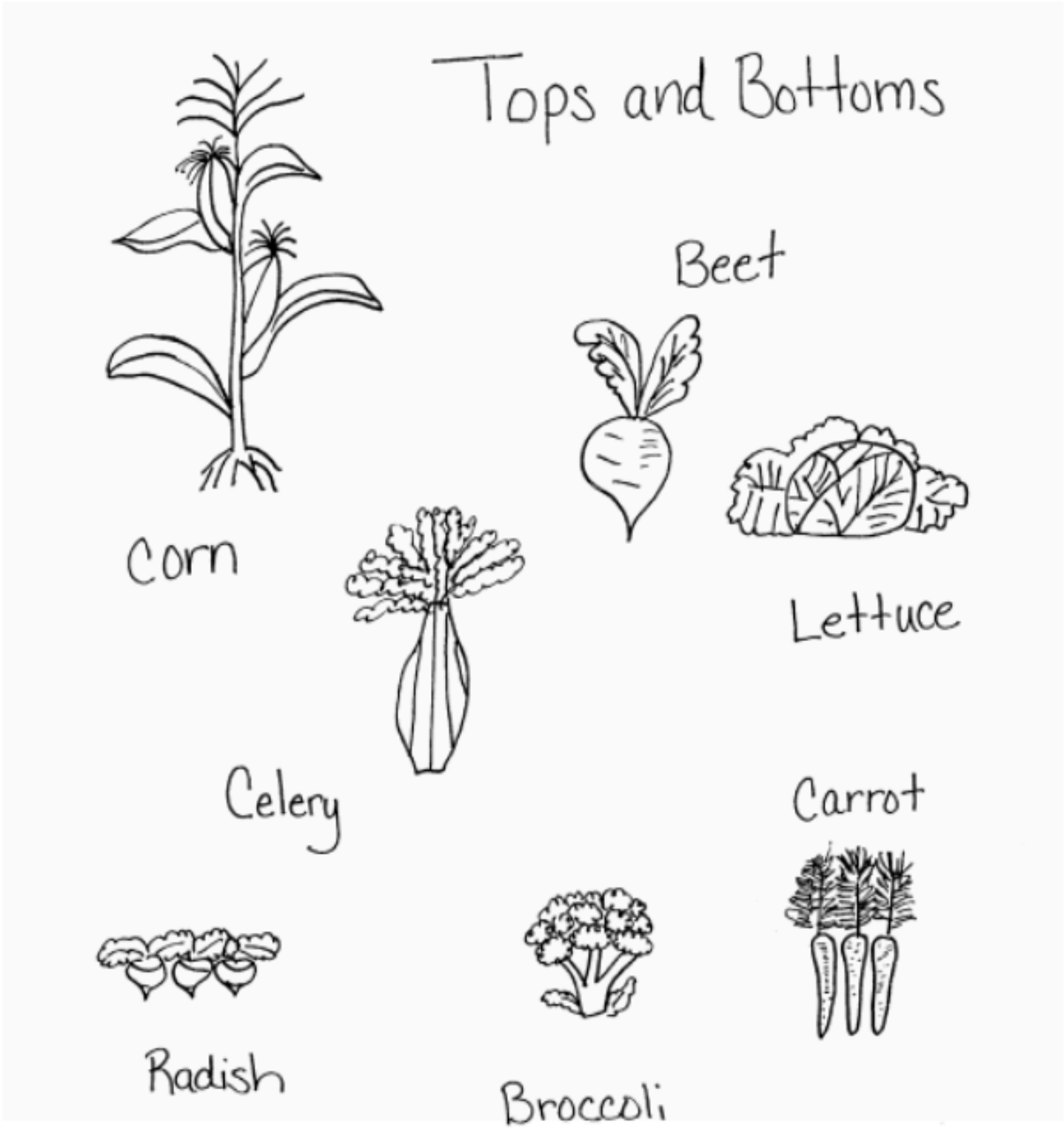
TEACHER RESOURCES

Extension Ideas:

- After reading *Tops and Bottoms*, have students compare their list of vegetables to the ones featured in the book. See how many vegetables students have already tried.
- Some vegetables have multiple plant parts that are edible. Research less common uses for some of these plant parts and share with your students. For instance, many people throw away or compost their green carrot tops, but those can be used to make a tasty pesto!
- In addition to the parts of the plant, have students also think about the colors of the vegetables we eat and why it's important from a nutritional perspective to have many colors of fruits and vegetables on our plates.
- Write a letter to the Bear and Hare families. Perhaps students could give them hints on growing vegetables or inquire about how their garden is growing.
- Have students start pollinator seeds in your classroom that they can take home to plant at home.
- Start a school garden with quick-growing crops that students can plant and harvest before the school year ends.
- Go to aginthecclassroom.org to contact your County Ag Literacy Coordinator for free classroom sets of our Ag Mags!

Science Literacy

Tops and Bottoms: Template



Step 1

Step 2

Step 3

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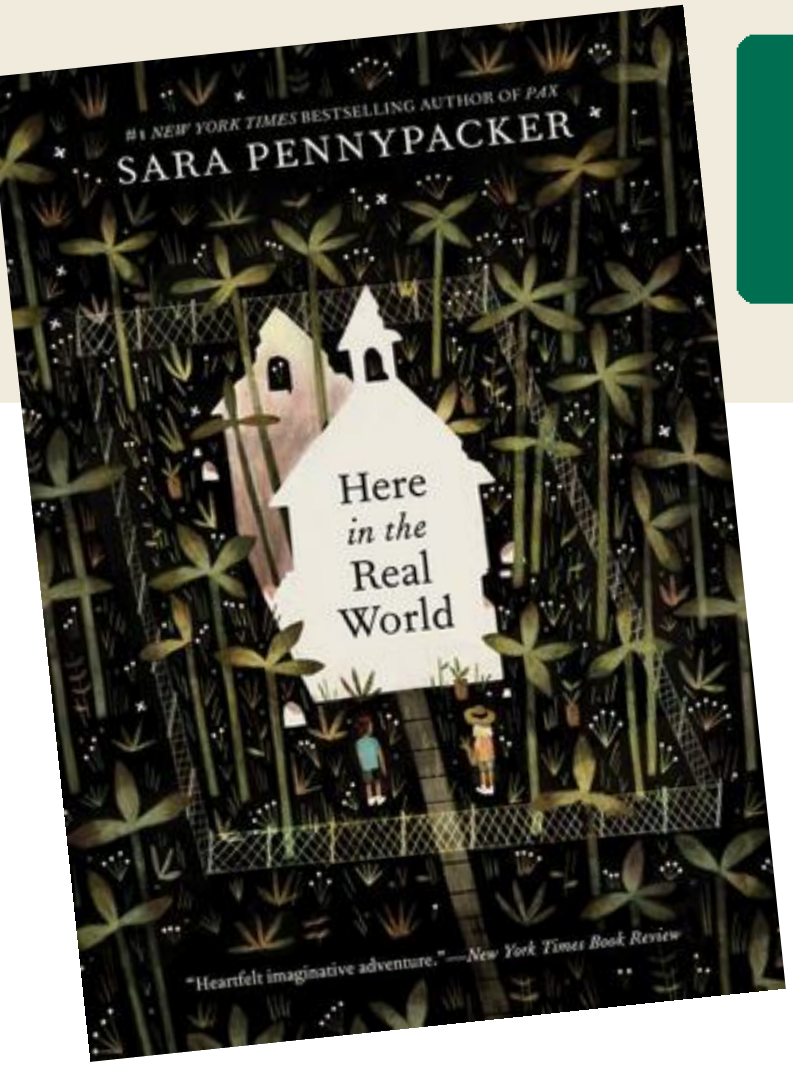


"HERE IN THE REAL WORLD"

Sara Pennypacker

Here is a gorgeous and moving middle grade novel that is an ode to introverts, dreamers, and misfits everywhere. Ware can't wait to spend summer "off in his own world"--dreaming of knights in the Middle Ages and generally being left alone. But then his parents sign him up for dreaded Rec camp. On his first day Ware meets Jolene, a tough, secretive girl planting a garden in the rubble of an abandoned church next to the camp. Soon he starts skipping Rec, creating a castle-like space of his own in the church lot. Jolene scoffs, calling him a dreamer--he doesn't live in the "real world" like she does. As different as Ware and Jolene are, though, they have one thing in common: for them, the lot is a refuge.

DIY SEED TAPE

Connect concepts of math and gardening as students make their own "seed tape" for a spring garden.

See following page(s) for lesson plan!

Science Math

DIY Seed Tape

Grade Level
3-6

Length of Lesson
30 minutes

Objective
By the end of this lesson, students will have a better understanding of the process of seed germination and the role of math in real-world gardening, farming, and other situations.

Materials Needed
- Rulers or tape measures
- Radish, lettuce, or other garden vegetable seeds
- 1-ply toilet paper
- Spray bottles filled with water

Standards
NGSS
2-LS2-1; 3-LS1-1; 3-LS3; 3-LS4; 5-LS2-1

Common Core Math
CCSS.Math.Content.3.MD.C.5-7; 4.MD.A.2-3; 6.EE.A.4

Lesson Summary
This lesson is designed to give students a hands-on activity that shows how seeds germinate. Students will determine the correct spacing to plant their seeds and then calculate how many seeds they could plant in a specific area. Students should have a basic understanding of plant life cycles and what the term "germination" means.

Suggested Sequence of Events:
1. Read *We Are the Gardeners* by Joanna Gaines to capture student interest.
2. Read through AITC Seasons Ag Mag to learn about how the seasons affect plant growth.
3. Complete the activity following the procedures:
    - Hand out the student worksheet and read the background Information section as a class.
    - Hand out materials to students.
    - Ask students to measure and cut a two foot long piece of toilet paper.
    - Students should lay the toilet paper on their workspace and lightly spray it with water. The paper should be damp but not sopping wet.
    - Next, students should lay their rulers next to the paper and determine the correct spacing for their chosen seeds. Using the ruler as their guide, students should carefully lay out their seeds in the center of the paper.
    - Then, have students fold the paper in half lengthwise to cover the seeds, and then fold in half once again. If the paper is too dry, have students lightly spray it again and then press the layers of paper together.
    - Leave undisturbed until dry. The seeds should now be adhered to the paper. Students can dig a furrow, unroll their seed tape, and then cover with soil. The seeds should now be planted at the proper spacing.
6. Whole class discussion and reflection of activity.

TEACHER RESOURCES

Background Information:
Quick-growing crops are best for this activity, particularly if you are having students plant these in a school garden. Radishes, turnips, lettuce, a variety of salad greens, and more can all be planted in early spring and be ready to harvest before the school year ends.

Root crops, such as radishes, can also be planted in groups of 3-4 seeds. The spacing between each grouping should be increased to allow the roots to spread out and have room to grow.

Extension Ideas:
- Students could experiment with spacings of seeds and grouped seeds to calculate the ideal spacing. AITC's "Throw and Grow" activity could be modified for this purpose as well.
- Have students collect data on the growth of their plants by making observations every day or every other day, and using measuring devices to measure their plant growth.
- Have students explain what seed germination is and what is necessary for seeds to germinate!
- Have students figure out the spacing of seed placement in gardens that are various shapes.
- Watch a time lapse videos of seeds germinating and plants growing. There are many of these available online. Here is the link to a particularly good one for radishes: https://youtu.be/e2zVeUPxBU4 and https://youtu.be/bfi3iipTQo0
- Ask your students if there are ways to use less space but still plant the same amount of seeds. Then introduce "Square Foot Gardening," a popular garden spacing method.
    - There are many books and resources related to this technique. There are many ways this could be adapted for a variety of real-world math exercises with calculating area, planting density, and more.
- Here are some additional suggestions for excellent books on gardening for your students: *Up in the Garden and Down in the Dirt* by Kate Messner, *What Will Grow* by Jennifer Ward, *Plants Can't Sit Still* by Rebecca E Hirsch, *A Seed is Sleepy* by Dianna Hutts Aston and Sylvia Long, *From Seed to Plant* by Gail Gibbons.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

Science Math

DIY Seed Tape

Student Worksheet

Background Information

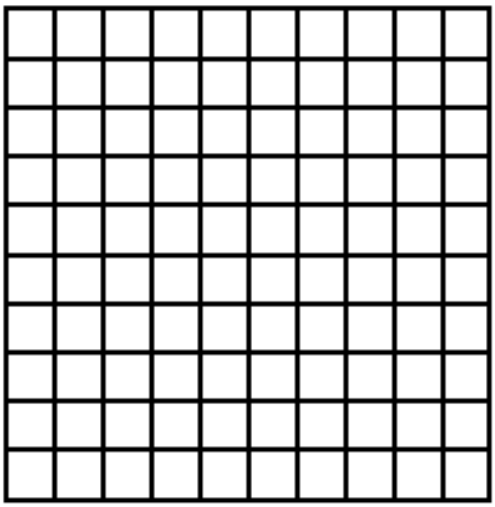
All plants require space around them to grow! The space around them will vary depending on the type of plant; some need more room than others. This is extremely important for gardeners and farmers to consider when it's time to plant their seeds!

If the seeds are too crowded, the plants will not have room to grow. If the seeds are too far apart, the plants will not grow big enough to block weed seeds from germinating and out-competing them!

Farmers and gardeners use a wide variety of tools and technologies to make sure they are planting at the proper seed density. Making a "seed tape" is one way to make sure seeds are properly spaced.

Today, you are going to "plant your own garden" and determine the spacing required between your seeds for the size of your garden!

- My garden is 10 foot by 10 foot.
- I'm planting _____ seeds!
- According to the planting instructions, my seeds should be planted _____ inches apart in the same row.
- There also needs to be _____ inches between each row!



1. How many rows will fit in this garden?
2. How many seeds can I plant in each row?
3. How many total seeds can I plant?
4. What is the total length in feet of the rows in my garden?
5. What is the total length in inches of the rows in my garden?
6. What is the total area of my garden in square feet?

Science Math

DIY Seed Tape

Seeding Instructions

It's time to create your very own Seed Tape! Follow these instructions to create and plant your Seed Tape.

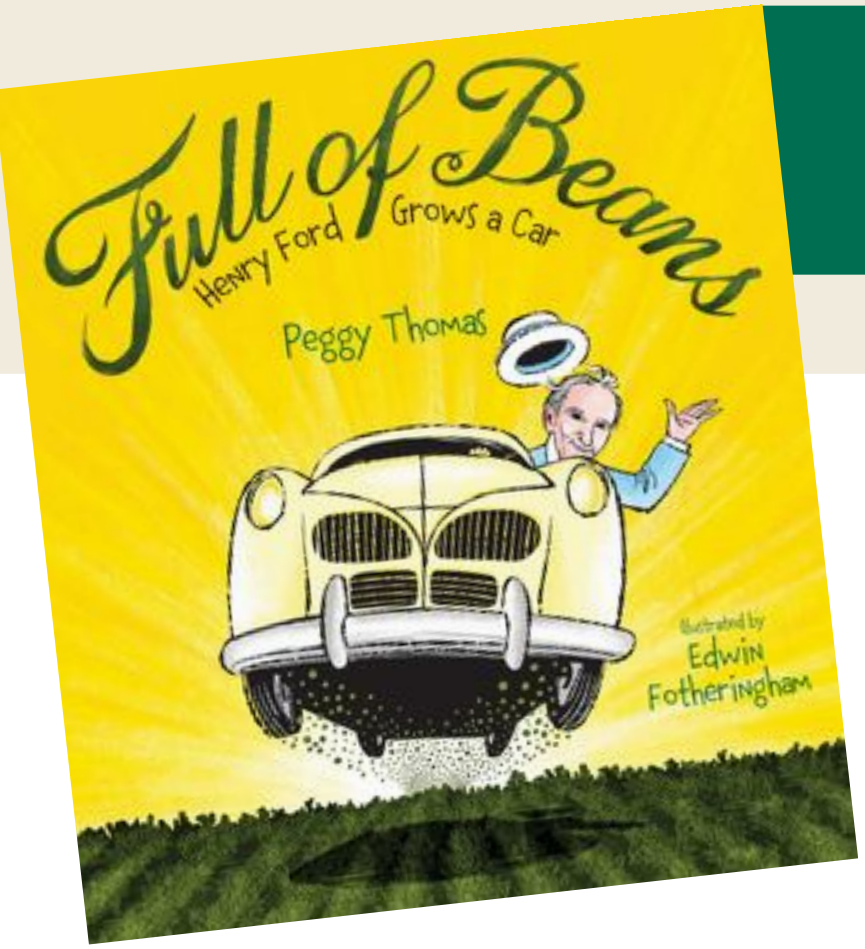
Today we are seeding _____ seeds onto our Seed Tape.

1. Cut a piece of toilet paper, or seed tape, to the proper length your teacher instructed.
2. Lay the piece of toilet paper across your workspace and use your ruler or tape measure to measure the length.

My seed tape is _____ feet long. This is the same as _____ inches long!

Based on the planting instructions, how many seeds should fit on your seed tape? Show your calculations in this box!

3. Using your spray bottle, lightly spray water onto the seed tape to moisten it. It should **not** be soaking wet!
4. Lay your ruler or tape measure on the edge of the seed tape. Carefully lay the seeds at the proper spacing along the middle of the strip of seed tape.
5. Then, fold the seed tape in half lengthwise and lightly press down. The seeds should stick to the toilet paper somewhat. If your paper is too dry, mist it again with the water and press again. Fold the seed tape in half lengthwise one more time and lightly press down.
6. Let your seed tape fully dry before you move it. Once it's dry, you can carefully fold it or roll it up until you are ready to plant!
7. On planting day, dig a furrow in your garden space. Your furrow needs to be the same length as your seed tape!
8. Place the seed tape in the furrow and cover it with soil.
9. Water daily to keep the soil moist until your seeds germinate. Make sure to water regularly and pull out any pesky weeds that pop up to give your young plants their best chance to grow into tasty vegetables!— remember, your seeds need room to grow!



"FULL OF BEANS"

Peggy Thomas

Famous car-maker and businessman Henry Ford loved beans. And he showed great innovation with his determination to build his most inventive car--one completely made of soybeans. With a mind for ingenuity, Henry Ford looked to improve life for others. After the Great Depression struck, Ford especially wanted to support ailing farmers. For two years, Ford and his team researched ways to use farmers' crops in his Ford Motor Company. They discovered that the soybean was the perfect answer. Soon, Ford's cars contained many soybean plastic parts, and Ford incorporated soybeans into every part of his life. He ate soybeans, he wore clothes made of soybean fabric, and he wanted to drive soybeans, too.

BEANIE BABY

Teach students about seed germination with this Ag in the Classroom classic!

See following page(s) for lesson plan!

Science

Beanie Baby

Grade Level
K-7

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will have a better understanding of the process of seed germination.

Materials Needed
- Jewelry size resealable baggies (found in craft stores)
- Crystal Soil (order from Flinn Scientific at 800-452-1261)
- Hole Punch
- Water
- Measuring Spoons
- Soybeans
- Yarn
- Copies of student worksheet

Standards
Common Core
CCSS.ELA-Literacy.RI.4.3; RI.4.4; RI.4.5; RF.4.3a

Social Studies
SS.EC.1.4; SS.EC.2.4; SS.EC.FL.1.4; SS.G.2.4; SS.G.3.4

NGSS
5-PS1-4

Lesson Summary
This lesson is designed to give students a hands-on activity that shows how seeds germinate. Students will create a "beanie baby" which allows them to observe not only the process of seed germination, but also the environment a seed needs for growth.

Suggested Sequence of Events:
1. Set Up: Pre-cut yarn into pieces long enough to tie as a necklace. Hole punch baggies above the seal.
2. Read "Full of Beans: Henry Ford Grows a Car" by Peggy Thomas to capture student interest. Ask if they know what other things we use soybeans for/in.
3. Read through AITC Soybean Ag Mag to learn about soybeans. Interactive online versions can be found on our website.
4. Pre-Activity Discussion: Hand out the student worksheet and ask them what a seed needs to start growing. Have them work individually to fill out the "Think" column to answer that question. Then have students pair up and share their ideas. They can add new information in the "Share" column. Then, as a whole class, have students share their ideas from the "Think" column. Go through the list one at a time and discuss whether a seed actually needs that to begin growing. Cross off the ones that are not necessary. Once your class comes to a final consensus, have each student write the class list in the "Share" column.
5. Complete the activity following the procedures:
    - Give each student a hole-punched baggie.
    - Have each student put 1/4 teaspoon of Crystal Soil into their baggie.
    - Add 2-3 soybeans into the baggie with the Crystal Soil.
    - Then add 1-2 tablespoons of water into their baggie.
    - Have them seal their baggies firmly so that they won't leak.
    - Then have them insert one end of yarn through the hole of the baggie and tie the ends of the yarn in a knot to make a necklace.
    - Tell them to wear the beanie baby around their neck, tucked under their shirts (warm, dark place). Have them check their beanie babies several times a day to observe germination and growth!
6. Whole class discussion and reflection of activity.

TEACHER RESOURCES

Extension Ideas:

- Print the "I'm Germinating, Ask me how!" labels on the last page of this document on Avery 5160 Peel & Stick Address Labels. Give one to each student to encourage them to tell others throughout the rest of their day how they are germinating!
- Read Dr. Seuss' "Oh Say Can You Seed" by Bonnie Worth and discuss the different parts of plants. Have students record unknown words as you read and go back to look up definitions.
- Have students create a comic strip showing the process of germination.
- Have students write a story from the soybeans perspective.
- Show a labeled diagram of a soybean plant.
- STEM: Have students build and label a model using recyclable materials.
- Introduce or teach about photosynthesis.
- Scientific Inquiry: Have students think more deeply about plant growth and create their own question, hypothesis, and experiment to test! Will soybeans grow faster in Mountain Dew, Coffee, or water? Does the amount of light affect the growth of the plant? Do different fertilizers, potting soils, temperature, etc. affect plant growth differently?
  - Have students use the "Student Inquiry Sheet" to test their variables.
- Watch a time lapse video of a soybean growing.
- Watch a video from a local farmer discussing soybean growth and harvest.
- Take a field trip to a farm.
- Invite a soybean farmer into the classroom.
- Watch the TEDx Talk "Sitting on Soybeans: Building the Bio-Based Automobile" presented by Debbie Mielewski. Discuss the idea of inventions and creativity. Discuss the broad possibilities of careers in Agriculture. Discuss how Debbie is a female in a stereotypically "male" career and how she is breaking that stigma.
- Research the "accidental" invention of the Crystal Soil used in the activity (which happened in Peoria, IL)
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

Science

Beanie Baby

Student Worksheet

Background Information

Soybeans are small, round seeds, each with a tiny hilum and made up of three basic parts. Each soybean has a seed coat, cotyledon, and the embryo. Each soybean plant generally reaches a height of 1 m (3.3 feet) and takes 80-120 days from sowing to harvesting. So how does a seed turn into a plant? Let's find out!

What does a seed need to start growing?

Think	Pair	Share

Materials

- 1 jewelry size resealable baggie
- Measuring spoons
- 1/4 teaspoon of Crystal Soil
- 1-2 tablespoons of water
- 2 soybeans
- 1 piece of yarn

Make a Prediction!

How long will it take for your seed to germinate?

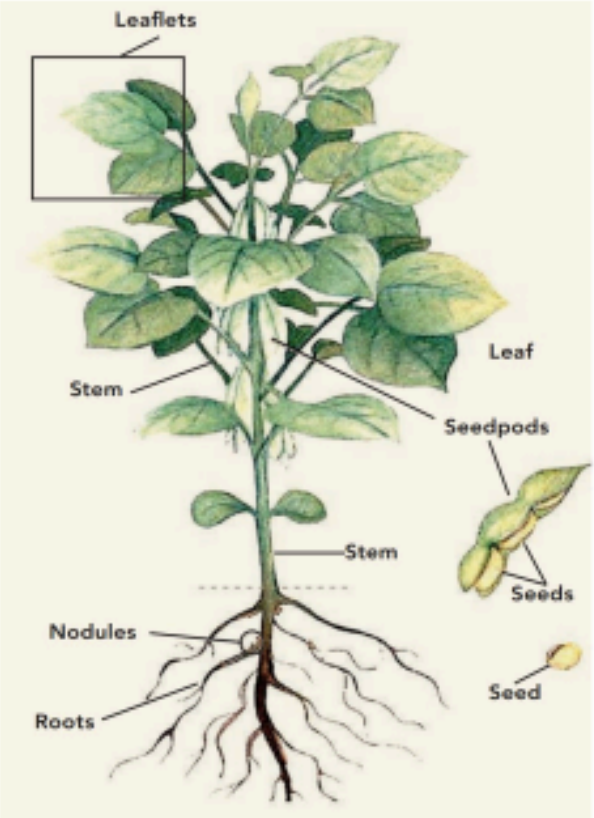
Procedures

1. Open your jewelry-sized baggie.
2. Measure 1/4 teaspoon of the Crystal Soil and carefully dump it into your baggie.
3. Gently push your 2 soybeans into the Crystal Soil.
4. Carefully measure 1-2 tablespoons of water and pour into your baggie.
5. Seal your baggie firmly and make sure there are no leaks!
6. Insert one end of your yarn piece through the hole in the baggie and tie the ends of the yarn in a knot.
7. Wear your beanie baby like a necklace and tuck it into your shirt (it's a little chilly at first!).
8. Check on your beanie baby several times a day to observe germination and record its growth!

Science

Beanie Baby

Student Worksheet



Vocabulary

Cotyledon: a seed leaf stored in a seed which are the first leaves the plant will have.

Embryo: part of a seed that develops into a new plant, including the stem, leaves, and roots.

Germination: the phase of plant growth when the seed begins to sprout.

Hilum: the scar on a seed marking the point of attachment to its seed vessel (the brown spot).

Radicle: the lower part of the axis of the embryo, the primary root.

Seed Coat: the outside cover that protects the seed.

Seed Pod: a structure that holds seeds. Each pod typically holds 3-4 beans.

Soybean Oil: a pale yellow oil derived from soybeans by solvent extraction. Used as a food and in the manufacture of soap, candles, inks, paints, varnishes, etc.

Stem: the main stalk of the plant.

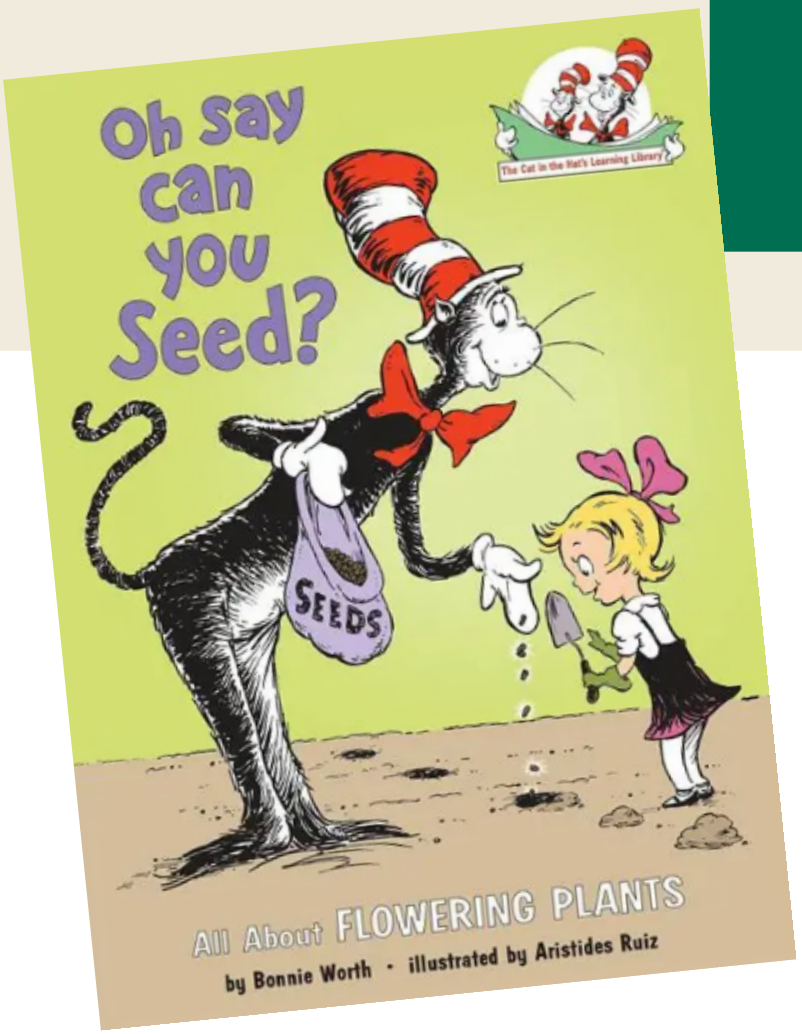
Taproot: a main root descending downward from the radicle and giving off small lateral roots.

Observe, measure, record!

Use the table below to record your data.

Day	Measurement in cm	Observations


I'M GERMINATING
Ask me how!



"OH SAY CAN YOU SEED?"

Bonnie Worth

With the able assistance of Thing 1 and Thing 2 -- and a fleet of Rube Goldbergian vehicles -- the Cat in the Hat examines the various parts of plants, seeds, and flowers; basic photosynthesis and pollination; and seed dispersal.

GARDEN IN A GLOVE

Learn about seed germination with this fun "hands"-on lesson.

See following page(s) for lesson plan!

Garden in a Glove

Science Literacy

Grade Level
K-5

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will have a better understanding of seed germination.

Materials Needed (per student)
- Clear, plastic glove (food service gloves work well)
- 5 cotton balls
- 5 types of seeds
- Pencil
- Water
- Yarn
- Marker

Standards
Common Core:
CCSS.ELA-Literacy.RL.K.9; RL.K.10; RI.K.9; RI.K.10; W.K.3; W.K.7; W.K.8; SL.K.3; RI.4.7; SL.4.1

NGSS:
K-LS1-1; K-ESS3-1; 2-LS2-1; 3-LS1-1; 3-LS3; 3-LS4; 5-LS2-1

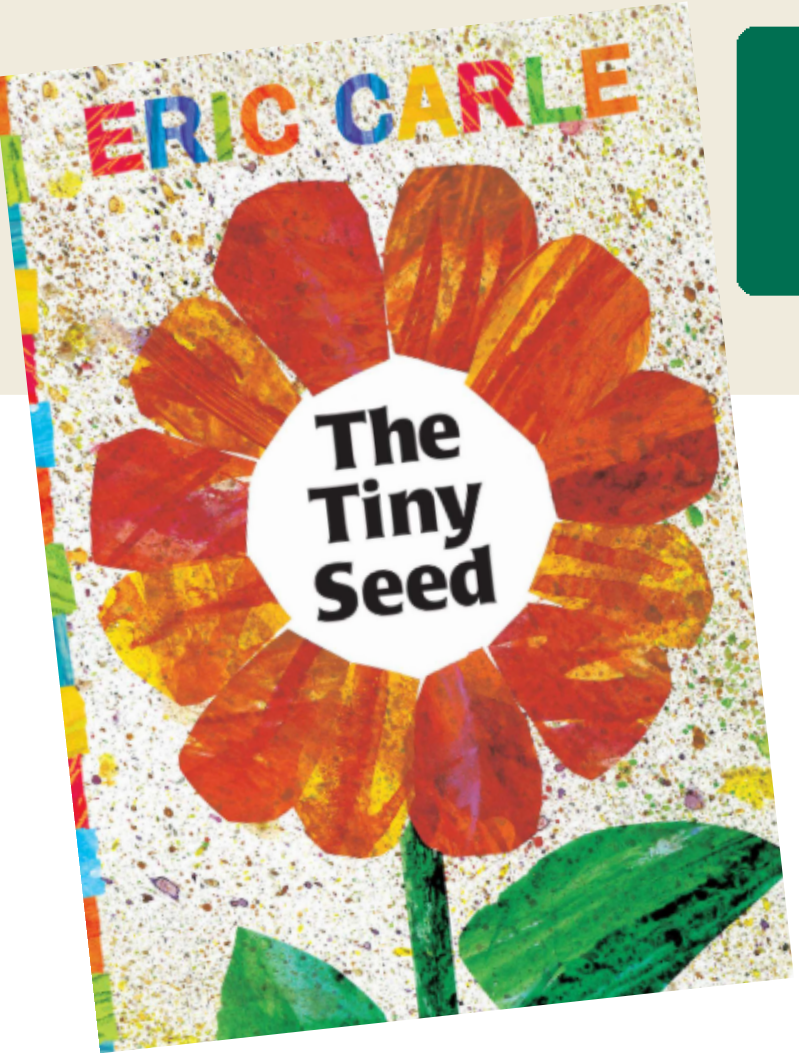
Lesson Summary
This lesson is designed to show students how seeds begin to turn into plants and what seeds need for germination.

Suggested Sequence of Events:
1. Set Up: Pass out supplies to each student and have them write their names on their gloves.
2. Read "Oh Say Can You Seed?" by Bonne Worth to capture student interest.
3. Read the IL AITC Soil Ag Mag to learn about soil. Interactive online versions can be found on our website.
4. Complete the activity following the procedures:
    - Label each finger of the glove with the type of seed you will be planting.
    - Wet five cotton balls and wring them out.
    - Dip each cotton ball in a different type of seed.
    - Put each cotton ball with the seeds attached into each finger of the glove. (hint: you may have to use a pencil to get the cotton ball all the way to the tips of the glove fingers)
    - Blow a little air into the glove and then tie it closed at the top with a piece of yarn.
    - Tape the glove to a window, chalkboard, or wall. You may want to hang a clothes line under a chalk tray and use clothes pins to hold the gloves on.
    - The seeds will germinate in 3 to 5 days.
    - Transplant the seeds at about 1 1/2 to 2 weeks by cutting the tips of the fingers off the glove.
    - Transplant the small plants, cotton ball and all, into soil or sphagnum moss.
5. Whole class discussion and reflection of activity. Keep a plant growth journal as you go! Then, have students discuss their growth with a partner or in small groups.

TEACHER RESOURCES

Extension Ideas:

- Teach or review the term 'germination.'
- Read "The Curious Garden" by Peter Brown and talk about the importance of gardening and hard work.
- Have students draw or take pictures of their observations on their plant growth.
- Have students measure the growth of their plants and record the data on a graph.
- Scientific Inquiry: What do seeds need to germinate? Create a list of what students think a seed needs in order to germinate, and then test those variables. Once the plants germinate, does they need different nutrients/conditions to survive?
- Have students research a native Illinois flower and its usual pollinators.
    - Students can write a paper about their findings.
- Draw comic strips that show an understanding of seed germination and growth.
- If transplanting seeds to pots, have students decorate their pots before they plant their seeds.
- Learn about the difference of "soil" vs. "dirt."
- Learn about different Illinois pollinators!
- Have students write a paragraph about the importance of pollinators.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!



"THE TINY SEED"

Eric Carle

Eric Carle's classic story of the life cycle of a flower is told through the adventures of a tiny seed. With striking collage illustrations and simple, yet dramatic, text young readers will cheer the seed's progress as it floats across the sky, nestles in the ground, and finally grows into a giant flower.

GROWING LETTERS

Encourage writing practice for your students while also learning about seed germination and plant growth.

See following page(s) for lesson plan!

Science

Growing Letters

Grade Level
K-5

Length of Lesson
30 minutes

Objective
By the end of this lesson, students will have a better understanding of the factors of plant growth.

Materials
- Plant seeds
- Cookie sheets or foil baking trays
- Glue sticks
- Crayons
- Construction paper
- Water bottle
- Sealable plastic Baggies

Standards
NGSS
K-LS1-1; K-ESS2-2; K-ESS3-1; 2-LS2-1; 3-LS4-3

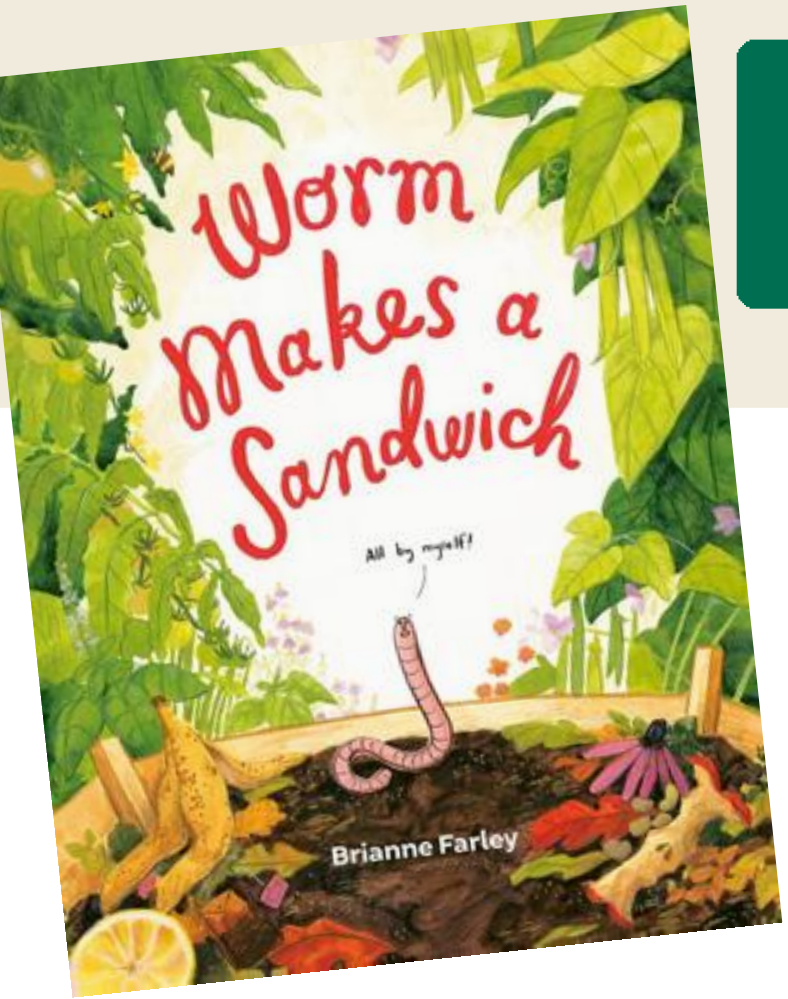
Lesson Summary
This lesson is designed to help students strengthen their understanding of seed germination and what factors might encourage and discourage plant growth.

Suggested Sequence of Events:
1. Read *The Tiny Seed* by Eric Carle to capture student interest and talk about how plants grow.
2. Read through the one of our Pollinator-themed non-fiction text resources to learn about native IL plants and pollinators. Interactive online versions can be found on our website.
3. Complete the activity following the procedures:
    - Cut sheets of construction paper in half length-wise. Each student receives a 1/2 piece of paper. Pour the plant seeds into the cookie sheets/foil baking trays.
    - Next, write each student's name (or just the first letter of their name) on the construction paper strip using the crayons. Older students can write their own name.
    - Give each student their piece of construction paper and a stick of glue. Have students trace their names with the glue stick.
    - Have them place their pieces of construction paper name-side down, into the plant seeds. Then pick it up and gently shake off any extra seeds.
    - Set to the side to let the glue dry.
    - Once the glue is dried, place the projects in sealable plastic baggies and spritz the paper with water so that the paper is damp but not soaking. The seeds should be kept damp to ensure growth. Seal up the baggie and tape it to a window, chalkboard, or wall.
4. Whole class discussion and reflection of activity.

TEACHER RESOURCES

Extension Ideas

- Small seeds like radishes, carrots or even grass seeds work really well for this activity.
- Have students choose a current vocabulary word that they've learned instead of their name.
- Have students keep an observation journal where they can draw or write what their name looks like as it grows.
- Learn about the water cycle as the water from misting the paper will begin to go through the steps.
- Read Dr. Seuss' "Oh Say Can You Seed" by Bonnie Worth and discuss the different parts of plants. Have students record unknown words as you read and go back to look up definitions.
- Have students create a comic strip showing the process of germination.
- Have students write a story from the seed's/plant's perspective.
- Show a labeled diagram of the plant(s) you're growing.
- Go to agintheclassroom.org to contact your County Ag Literacy Coordinator for free classroom sets of our Ag Mags!



"WORM MAKES A SANDWICH"

Brianne Farley

A sweetly humorous picture book about composting, told from the point of view of a worm. Meet Worm. He might be little. He might have no hands. But Worm would love to make a sandwich, just for you! To get started he'll need just one thing: garbage! This hilarious, engaging picture book is the perfect introduction to the process of composting from start to finish, told from the perspective of one little worm who is very eager to help.

CLASSROOM VERMICOMPOSTING

Fascinate your students with the exciting world of vermicomposting -- compost made by worms!

See following page(s) for lesson plan!

Science

Classroom Vermicomposting

Grade Level
K-8

Length of Lesson
Ongoing

Objective
By the end of this lesson, students will have a better understanding of vermicomposting and soil health.

Materials Needed
- (2) large, opaque plastic containers
- Replacement drain for cooler
- Drill & drill bits
- Newspaper
- Small amount of compost or soil
- 1/4 lb red wiggler worms
- Copy of the Weekly Log Sheet (optional)

Standards
NGSS
K-2-ETS1-1; K-LS1-1; 4-LS1-1-2; 4-ESS3-1; 5-LS2-1; MS-LS2-3

Lesson Summary
This lesson is a fun, hands-on activity designed to introduce students to the exciting world of vermicomposting—making compost with the help of worms! Students will help construct and maintain a classroom vermicomposter. As an alternative or supplemental lesson, students can make their own "desktop" composters as well.

Suggested Sequence of Events:
1. Set Up: Assemble all necessary materials. Teachers may want to mostly prepare the vermicomposting tubs beforehand and have students help with adding the worms.
2. Read through the IAITC Soil Ag Mag to learn more about soil health! Interactive online versions can be found on our website.
3. To prepare the composting bins, follow these steps (diagrams can be found on the Teacher Resources page:
    - Use the drill and a 1" drill bit to cut two holes near the top on each long side of one of the tubs. These holes will serve as ventilation for the worms.
    - Then, use the same 1" drill bit to drill a hole near the bottom on the short side of the other tub.
    - Attach the cooler drain through this hole. This will allow you to drain any liquid "worm tea" that collects in the bottom tub. Worm tea can be added to gardens and planting containers as fertilizer as well.
    - Return to the initial tub with the ventilation holes and flip the tub over. Switch to a 1/8" drill bit and drill a series of holes in the bottom of the tub. The holes should be large enough for liquid to drain, but not large enough to allow the worms to travel out of the tub.
    - Place this tub inside of the other tub to complete your vermicomposting bins!
4. To set-up your vermicomposting bins, follow these steps:
    - Have students tear the newspapers into small pieces.
    - Add the newspaper and compost/soil to the bin with the drain holes. Then, add a small amount of food waste. Avoid meat, dairy, and citrus products in your worm composter.
    - Finally, add the worms to your bin. Depending on how you received your worms, you may need to follow the directions included with them to "re-hydrate" the worms before adding them to your bin.
5. Your worm composter is now complete. Read the attached Teacher Resources page to learn more about maintaining your classroom composter.

TEACHER RESOURCES

- Watch our video about building our own vermicomposter on YouTube: https://youtu.be/U7d7zek6lEM

Maintainence:

- A vermicomposter takes little work to maintain in your classroom. Follow these tips to help your worms do their best work:
    - Add approximately the same weight in food as you have worms in your bin. For instance, if you start with 1/4 lb. of worms, add about 1/4 lb. of food scraps every week.
    - Food scraps that are in small pieces will be easier for the worms to digest quickly. Adding scraps of varying sizes may be a fun experiment to test how long it takes the worms to break down different materials.
    - Add shredded newspaper bedding as needed to keep the food scraps covered and help the pile retain moisture.
    - Burying the food scraps in the bin will help the worms digest the materials more quickly and will also eliminate the chance for bad smells.
    - The worm bin should have similar moisture to a damp sponge. Additional liquid should drain into the bottom bin, thought this often isn't even necessary.
    - The worms will self-regulate their population. As the population grows, you will need to add more food each week. Eventually, the worm colony can be split to create an additional worm bin.

Extension Ideas:

- Students can perform various experiments and inquiry activities with the vermicomposter:
    - Use the attached weekly log for students to fill out with what they added to the worm bin, what they noticed inside the worm bin, what the worms are currently decomposing, etc. Assign different students to fill out the log each week.
    - Weigh the worms at various points in time to determine how quickly they are multiplying.
    - Experiment with adding different size food scraps to see how quickly the worms can decompose them.
    - Once the worms are creating compost, extract some and use it with garden or container plantings. See how plants grown with the vermicompost grow differently that plants grown with other types of soils.
    - Take a sample of your vermicompost and submit it for a soil sample to see what nutrients are present in the worm castings. Compare this with a soil test taken from soil around the school yard.
    - Have students research the benefits of vermicomposting and composting.
- Variation: Students can also create their own "desktop" vermicomposters using large plastic cups with lids. Worms prefer to work in the dark. Use construction paper to make a collar to block the light from the cup. Then, students can remove the collar to view the worms and their progress.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

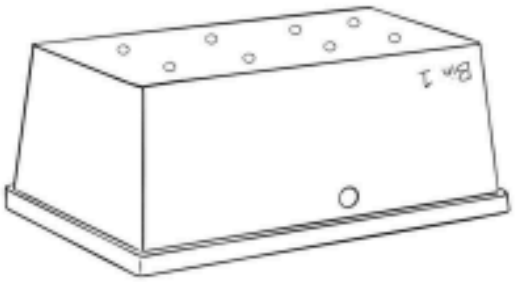
TEACHER RESOURCES

Holes for Ventilation

1" drilled holes
Top, 2 sides of the first bin

Holes for Drainage

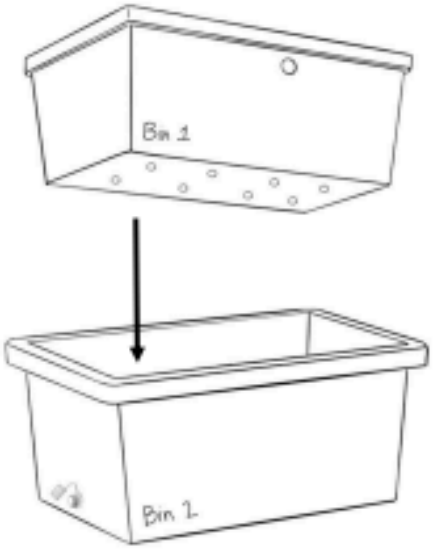
1/8" drilled holes
Bottom of the first bin



Hole for Cooler Drain

1" drilled hole
Bottom edge, 1 side of the second bin

(Cooler Drain)



Assembly

Secure the cooler drain in the hole drilled at the bottom of the second bin. Then, place the first bin into the second bin.

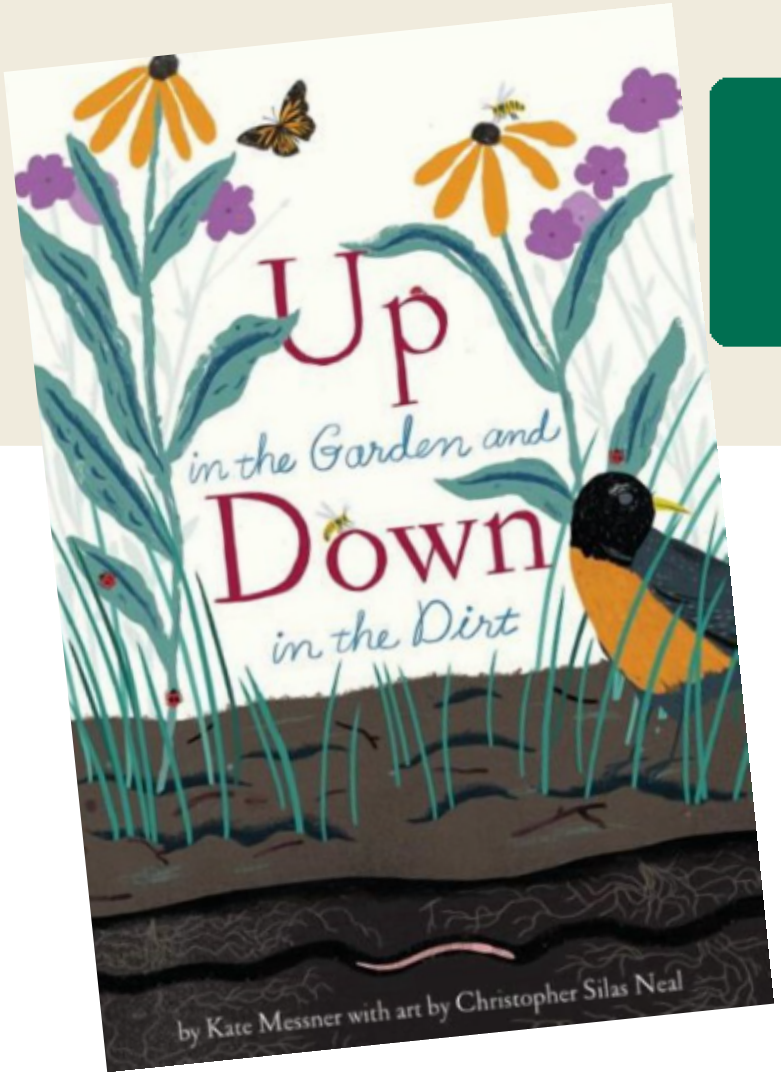
Your vermicomposter is ready for its materials and tenants!

Science

Classroom Vermicomposting

Weekly Log

Date	Food Scraps Being Added	Observations of compost



"UP IN THE GARDEN AND DOWN IN THE DIRT"

Kate Messner

In this exuberant and lyrical follow-up to the award-winning Over and Under the Snow, discover the wonders that lie hidden between stalks, under the shade of leaves . . . and down in the dirt. Explore the hidden world and many lives of a garden through the course of a year! Up in the garden, the world is full of green—leaves and sprouts, growing vegetables, ripening fruit. But down in the dirt exists a busy world—earthworms dig, snakes hunt, skunks burrow—populated by all the animals that make a garden their home.

THROW & GROW

Students can help create new habitat for pollinators by creating (and tossing!) their Throw and Grows.

See following page(s) for lesson plan!

Science Literacy

Throw & Grow

Grade Level
2-5

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will be able to explain the importance of pollinators.

Materials Needed
- Air dry clay
- Compost
- Wildflower seeds (native to your area)
- Small spray bottle with water

Standards
Common Core
CCSS.ELA-Literacy.RI.4.7; SL.4.1

NGSS
2-LS2-1; 3-LS1-1; 3-LS3; 3-LS4; 5-LS2-1

Lesson Summary
This lesson is a fun, hands-on activity designed to teach students more about the importance of pollinators. Students will also learn about seed germination and plant growth as you watch your flowers grow!

Suggested Sequence of Events:
1. Read "Up in the Garden and Down in the Dirt" by Kate Messner to snag student interest!
2. Read through the IL AITC Pollinator Ag Mag to learn about pollination. Interactive online versions can be found on our website.
3. Complete the activity following the procedures:
    - Have each student pull off a piece of clay and spread it out to be large enough to pour the compost on it.
    - Have them pour a pinch of compost on the clay and then pour the seeds on top of it.
    - Then, have students spray a small amount of water (one or two sprays) on their seeds.
    - Allow each student to fold together and knead the mixture until the mixture is thoroughly mixed together.
    - Have them roll it into a ball and bring it out to dry in the sun.
    - Now it is time to "throw and grow." Have them throw their seeds into their yard and wait for them to grow.
5. Whole class discussion and reflection of activity.

TEACHER RESOURCES

Background Information:
Spring is the best time to toss your throw and grows into your yard or an approved location at your school. Try to time it before a heavy rainfall in order to help the seeds germinate.

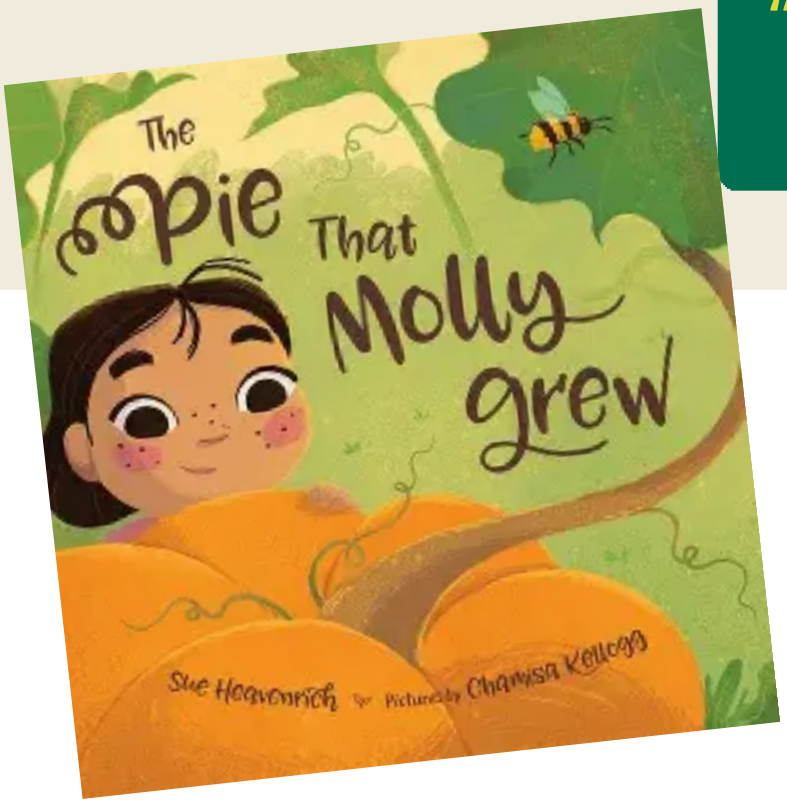
The clay helps hold the soil and seeds together. Once thrown, the clay will hold the compost and seeds together so the seeds have a nutritious home to germinate. Over time, the seeds will root into the ground and weather conditions will break down the clay.

Extension Ideas:

- Read "Our School Garden" by Rick Swann and talk about the importance of flower gardens. Talk with your principal and maintenance staff and see if there's an approved location on the school grounds where you can grow a pollinator garden.
    - Have students measure, design, and build the garden before you complete this activity.
    - If there is no approved location, have students 'throw' their "Throw & Grows" into a flower pot and set the pots by your classroom windows.
- Have students draw or take pictures of their observations on their plant growth.
- Have students measure the growth of their plants and record the data on a graph.
- Have students research a native Illinois flower and its usual pollinators.
    - Students can write a paper about their findings.
- Have students think more deeply about the role each material played in their throw and go; What is compost used for? What would happen if we didn't water it? How does a seed become a plant?
- Learn about the difference of "soil" vs. "dirt."
- Learn about different pollinators!
    - Invite a beekeeper in to talk about bees.
    - Get involved and learn about the Illinois Monarch Project. Available at https://www.ilfb.org/resources/ifb-in-action/illinois-monarch-project-provides-resources/
    - Watch this video from the Illinois Farm Bureau all about pollinator habitats. Available at https://www.youtube.com/watch?v=_QYvaiozsFc
- Have students write a paragraph about the importance of pollinators.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

PLANT A SEED, READ
At Your Library
Summer 2026

An iREAD
Summer Reading
Companion
from
Illinois AGRICULTURE in the Classroom℠



"THE PIE THAT MOLLY GREW"

Sue Heavenrich

Using "The House That Jack Built" rhyme scheme, the journey of bringing a pumpkin to harvest comes to life for young readers. Under Molly's watchful eye, each stage of growth is showcased. And at the end, the pumpkin is turned into a delicious pie for one and all to share in a celebration of gratitude. Back matter includes pumpkin facts, as well as a pumpkin pie recipe.

PUMPKIN CHAIN

Teach students about the life cycle of pumpkins with this fun and engaging activity.

See following page(s) for lesson plan!

Science Literacy

Pumpkin Chain

Grade Level
K-3

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will know the life cycle of a pumpkin.

Materials Needed
- Two orange paper plates per student (or white plates to be colored)
- Crayons
- Glue
- Construction paper (yellow, pink, brown and green)
- Pumpkin Chain templates
- Stapler
- Tape
- Yarn
- Hole Punch
- Scissors

Standards
Common Core
CCSS.ELA-Literacy.RL.4.3; W.4.2

NGSS
K-LS1-1; 3-ESS2-1; 3-LS1-1; 3-LS3-1

Lesson Summary
This lesson is designed to help students in sequencing and building models as well as help them understand the life cycle of a pumpkin.

Suggested Sequence of Events:
1. Set Up: Print each template onto colored construction paper: seed (brown), small pumpkin (green), leaf (green), blossom (yellow), pumpkin (orange). Cut out the shapes and then punch a hole on opposite sides of each template, except the seed, which only needs one hole.
2. Read "Life Cycle of a Pumpkin" by Ron Fridell & Patricia Walsh to capture student interest and to show them how pumpkins grow.
3. Read through the AITC Pumpkin Ag Mag to learn about pumpkins. Interactive online versions can be found on our website.
4. Complete the activity following the procedures:
    - Have students draw a jack o' lantern face on one of their orange paper plates.
    - Have students place their two paper plates together, orange side out, and line up the edges together.
    - Then, have them staple their two orange plates together around 2/3 of the edge. Leave the other 1/3 open.
    - Have them tape one end of a piece of yarn to the inside of the stapled paper plates and extend the yarn out of the opening.
    - Add a stem to the orange paper plates to make them look like a pumpkin. Put this to the side.
    - Ask students what shape is the start of a plant (seed). Then ask them what a seed grows into (leaves, blossom, etc). Use the yarn to tie these two shapes together. Repeat this until you get the chain completed. The orange pumpkin will be tied to the yarn that is already attached to the orange paper plates.
    - Tuck the shapes into the jack o' lantern. Starting with the seed, slowly pull the shapes out of the pumpkin and tell the story of how the pumpkin grows.
5. Whole class discussion and reflection of activity. Pair students together and have them share their pumpkin with their partner, telling the story of the pumpkin life cycle!

TEACHER RESOURCES

Extension Ideas:

- Use white paper plates and have students color their own pumpkins. Show them different pumpkin varieties and have them choose their favorite to color.
- Have student use one orange plate and one white plate, and write a pumpkin poem on the white plate.
- Have students label each shape on their pumpkin chain.
- Have students write about or talk about what is happening at each stage. For higher level students, have them research each step and write a paragraph explaining what happens at each phase and how long each phase takes.
- Have students create a comic strip showing the pumpkin life cycle.
- Have students tell a story from the pumpkin's perspective.
- Show a labeled diagram of a pumpkin.
- Introduce or teach about photosynthesis.
- Watch a time lapse video of a pumpkin growing.
- Watch a video from a local farmer discussing pumpkin growth and harvest.
- Take a field trip to a patch and pick your own pumpkins.
- Invite a pumpkin farmer into the classroom.
- Measure and adjust the lengths of the yarn in between each shape to represent how long each phase takes.
- Make playing cards of the life cycle of a pumpkin and have students race to put it in order.
- Take a closer look at squash bees and other pollinators. What is pollination? Why is it important for pumpkins?
- Have students think more deeply about pumpkin varieties. Are different pumpkins used for different things?
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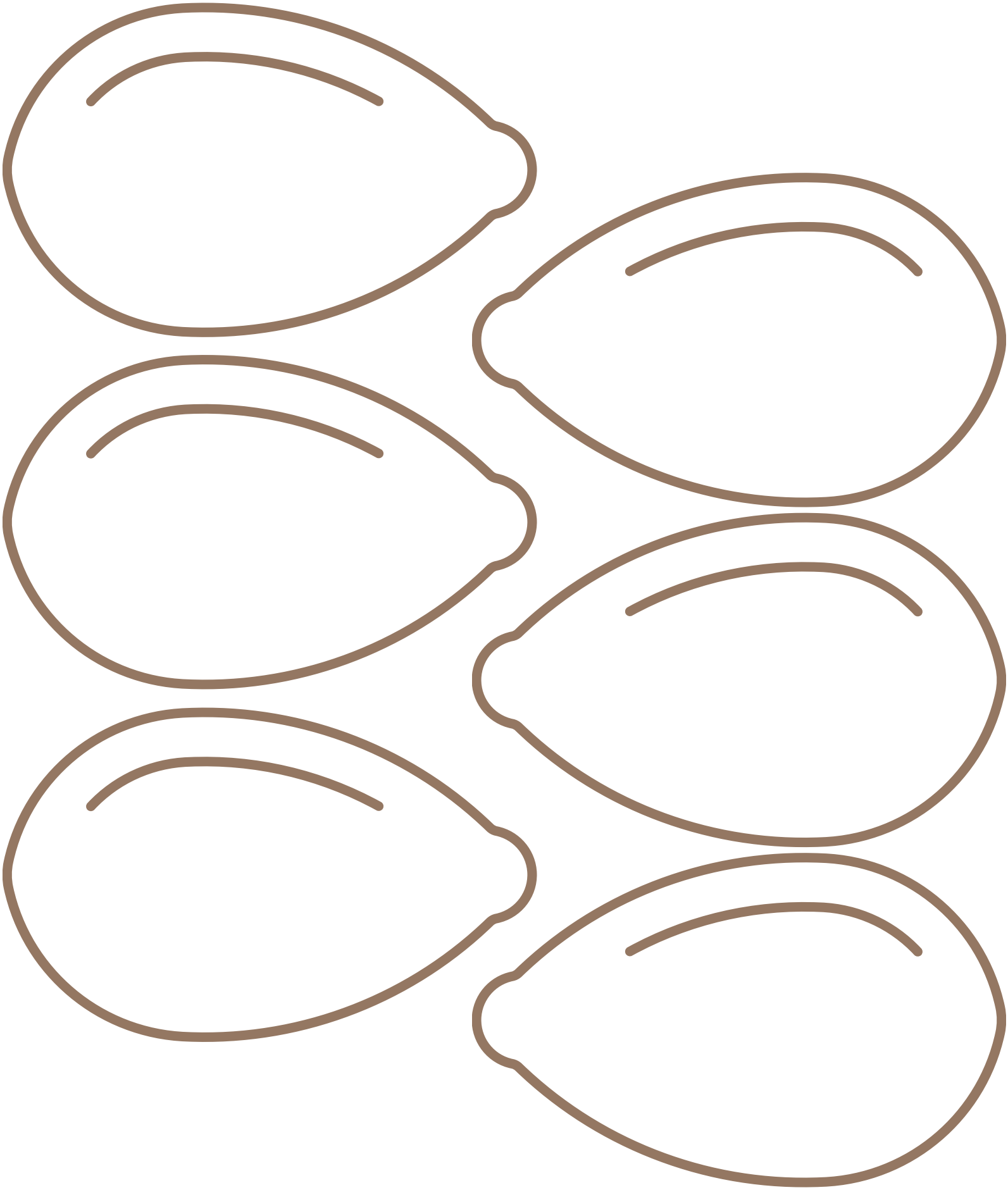
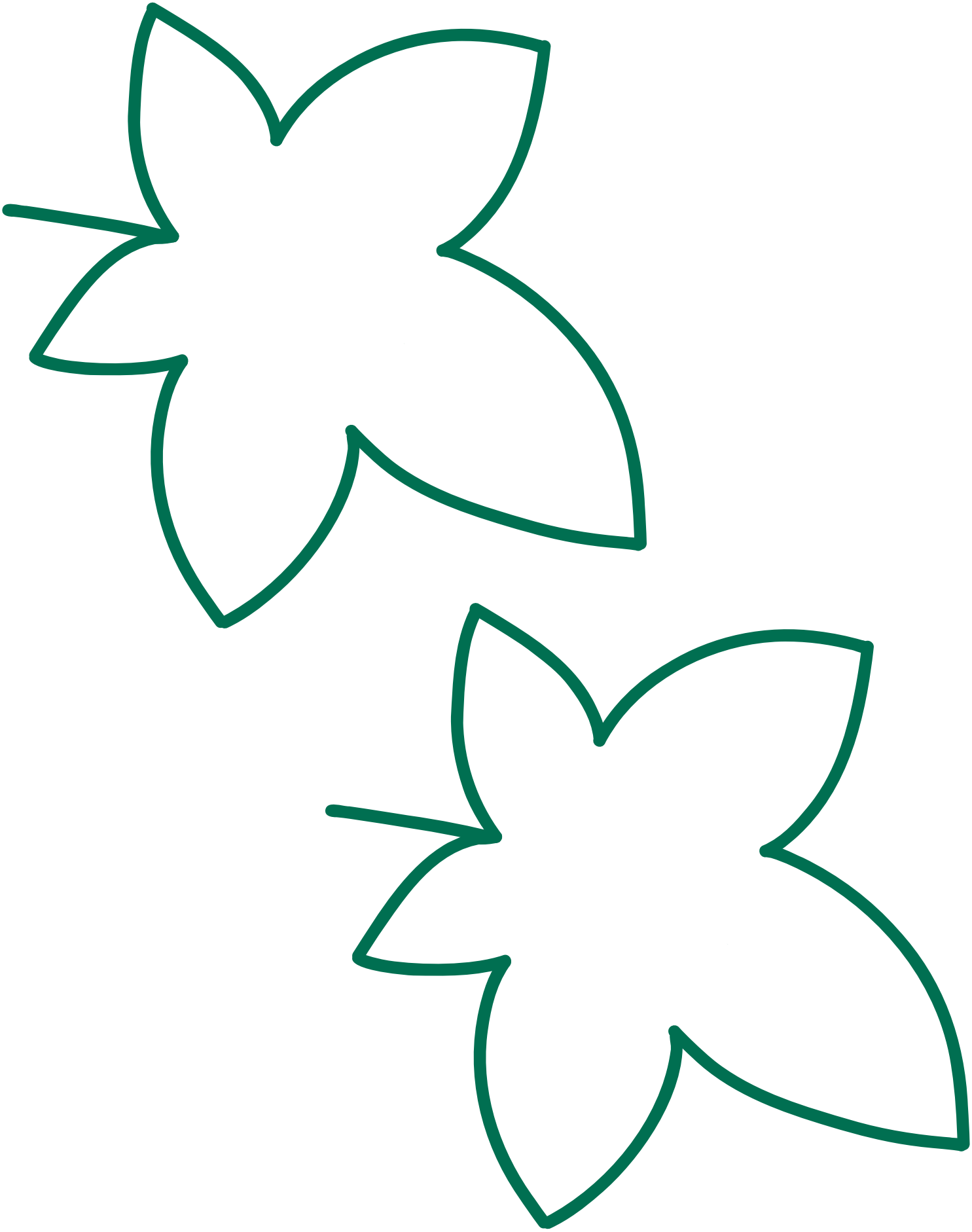
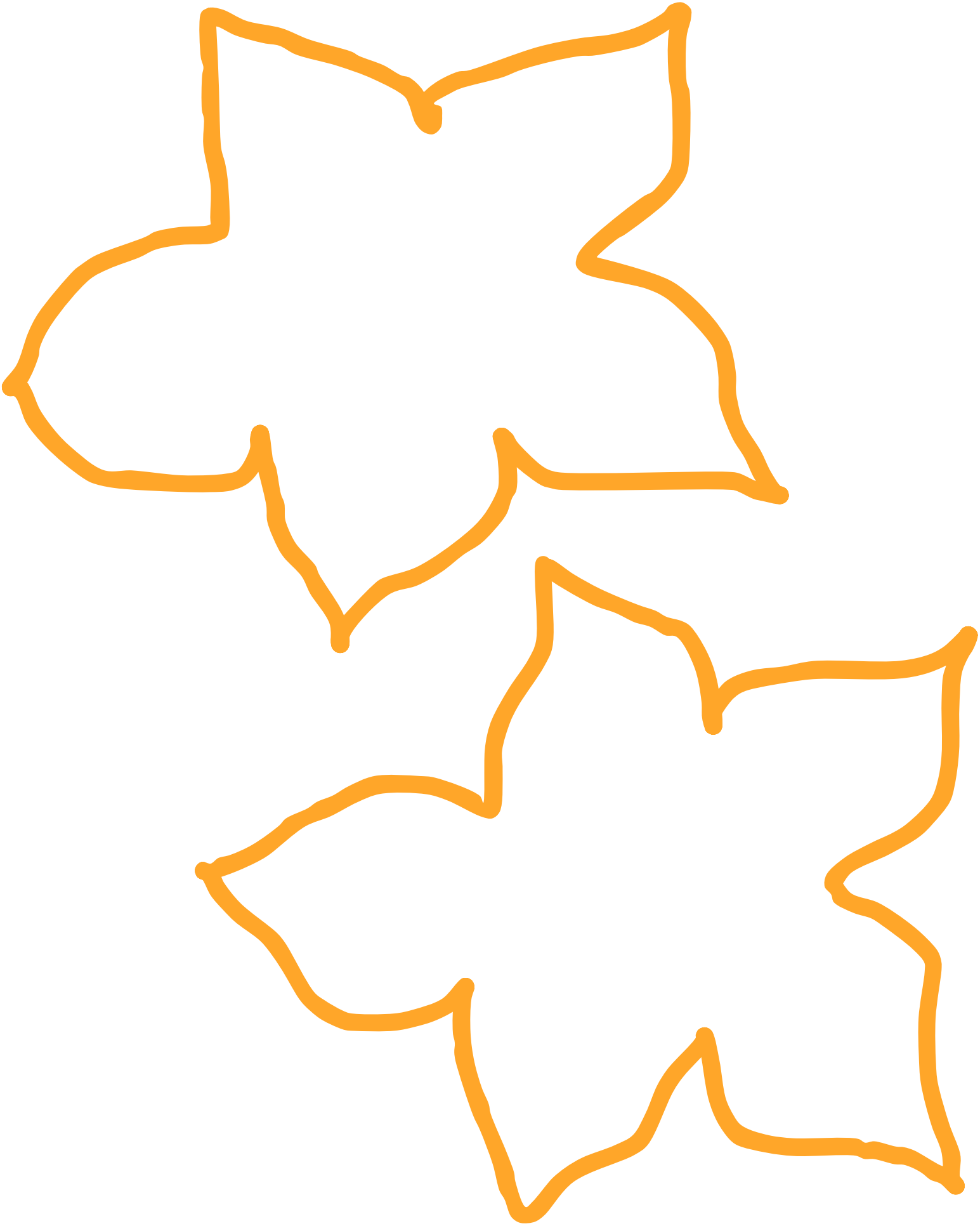
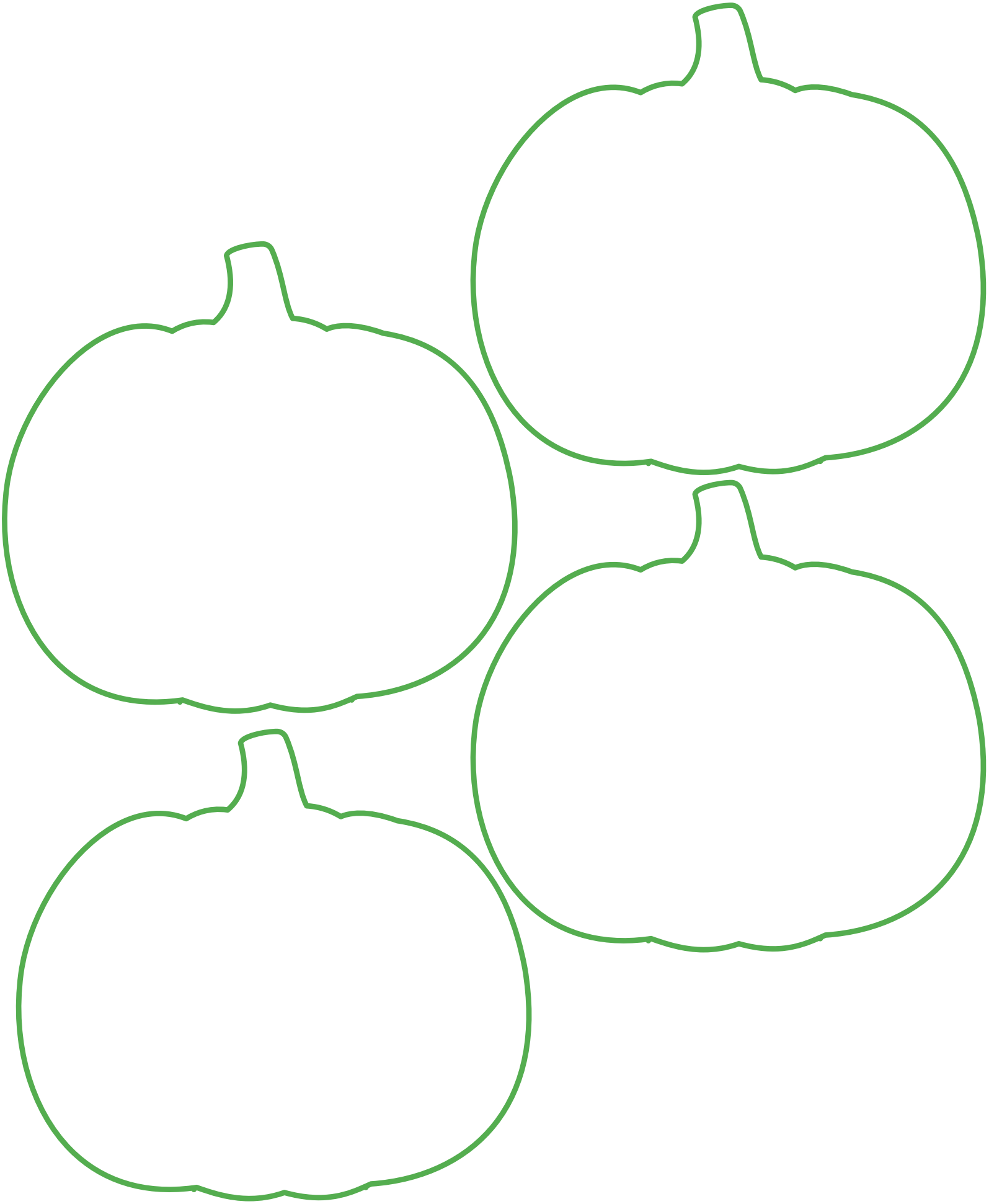
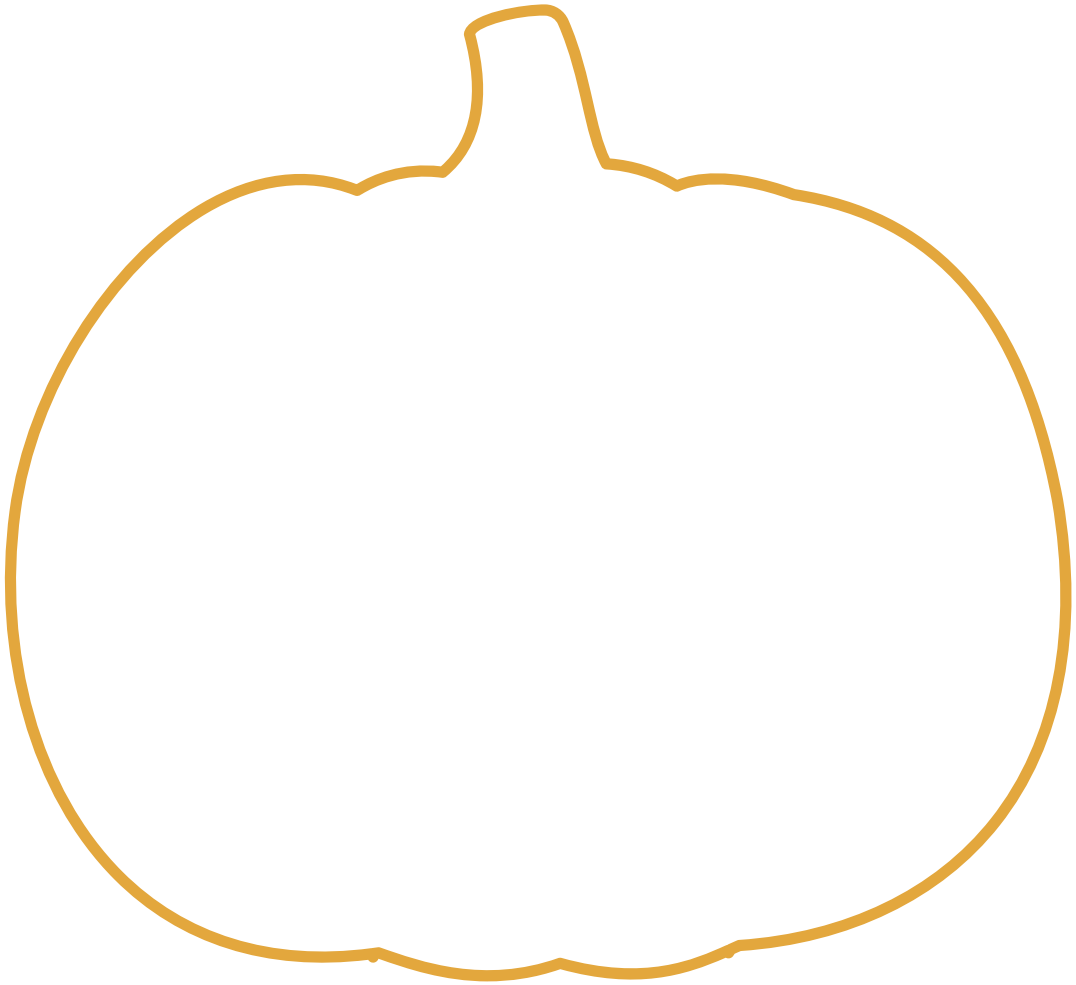
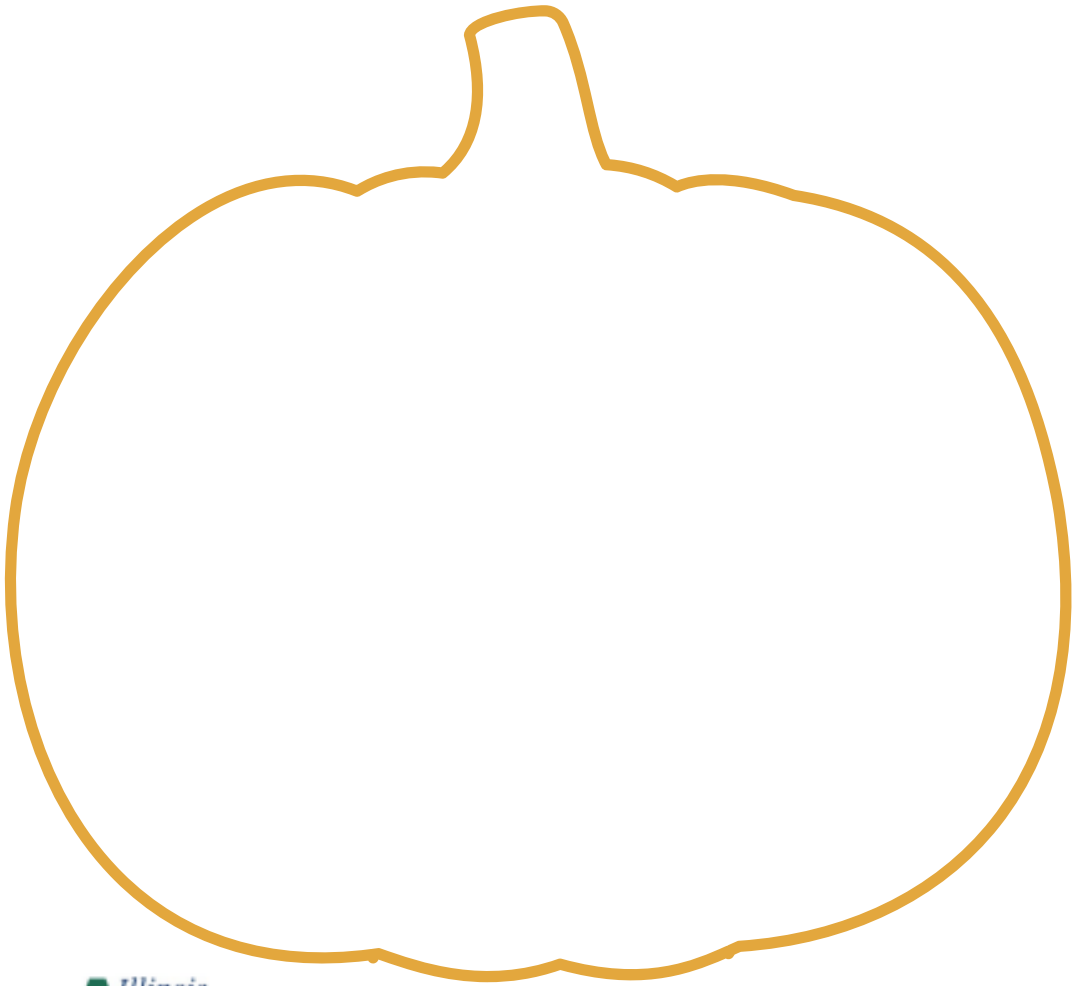


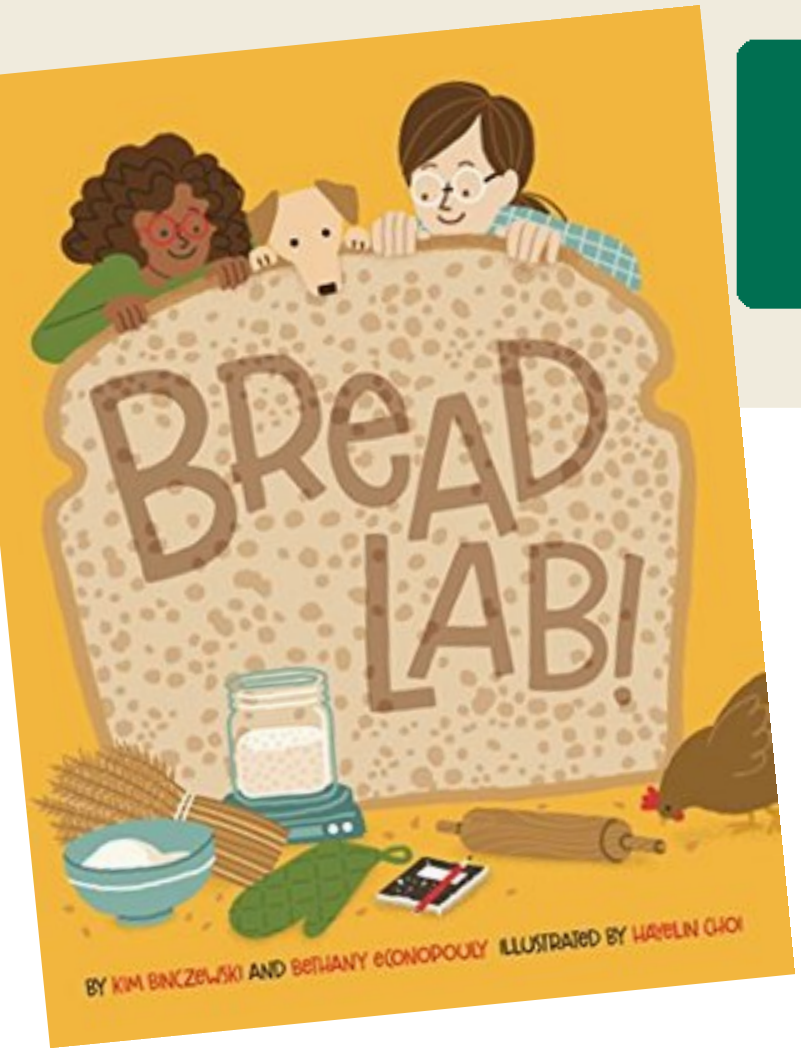












"BREAD LAB!"

Kim Binczewski, Bethany Econopouly

It's a sleepy Saturday morning for most people, but not for Iris, who has to feed her many pets before Aunt Mary arrives. Iris likes to call Aunt Mary "Plant Mary" because she is a plant scientist. Today Aunt Mary wants to experiment with making whole wheat sourdough bread from scratch! As the family kitchen transforms into a bread lab, Iris is surprised that bread needs only four ingredients—flour, water, salt and starter. She also learns about the invisible microbes that make the dough rise, and how flour comes from wheat grown by farmers. It all seems magical, but it's really science.

WHEAT MILLING

Show students how flour is made with this engaging look into wheat and milling.

See following page(s) for lesson plan!

Science Literacy

Wheat Milling

Grade Level
K-4

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will have a better understanding of wheat as a plant.

Materials Needed
- Wheat Stalks (available at agclassroomstore.com)
- Salt or Pepper Grinder

Standards
Common Core
CCSS.ELA-Literacy.RI.K.10; RI.1.6

CCSS.Math.Content.K.CC.A.1

NGSS
K-LS1-1; 2-LS2-2; 3-LS1-3

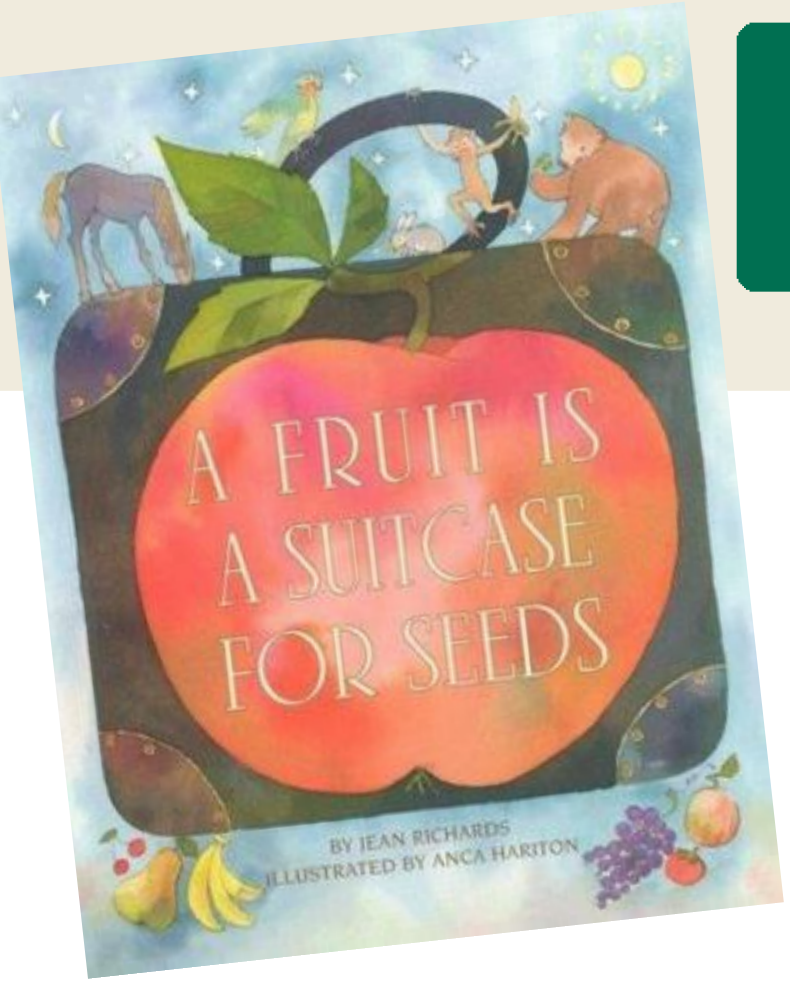
Lesson Summary
This lesson is designed to help students identify the parts of a wheat plant while learning about its uses in various food products.

Suggested Sequence of Events:
1. Set Up: Gather enough wheat stalks for each student in your class or for small groups of students. Draw or print out a diagram of a wheat stalk as a guide for you and your students.
2. Read "Farmer George Plants a Nation by Peggy Thomas to capture student interest.
3. Read through the AITC Wheat Ag Mag to learn more about wheat. Interactive online versions can be found on our website.
4. Complete the activity following the procedures:
    - Show students wheat stalks.
    - Go over the parts of the wheat stalk with the students to familiarize them with the parts so they can understand the directions for dissection.
        - Stalk—the entire plant.
        - Head—the part of the wheat plant that contains the kernels.
        - Beard—the bristle-like parts of the wheat plant that cover and protect the kernels.
        - Kernel—the seed from which the wheat plant is grown or that people harvest from the wheat plant to grind into flour.
        - Stem/Straw—the part of the wheat plant that supports the head and is known as straw after harvest.
    - Dissect the wheat using the following steps:
        - Break the head off the stem.
        - Make a straw out of the stem by breaking it to avoid the nodes.
        - Lay the wheat head flat on a hard surface and pat with your hand to shake out the kernels.
        - Have the students count their kernels.
    - Put the kernels of wheat into a salt or pepper grinder and have the students mill their wheat into flour. What simple machines are being used?
    - Talk about different ways to grind wheat. The Native Americans did it using rocks, etc. Have students design their own method of grinding wheat and then test their machines.

TEACHER RESOURCES

Extension Ideas:

- Read "Bread Comes to Life" by George Levinson. Then, have students find the gluten in wheat by chewing the kernels. Before there was chewing gum in the store, farmers made their own with grains of wheat!
- Ask the students to list some of the foods that can be made using flour. *(Bread, cake, cookies, brownies, pasta, crackers, etc.)*
- Have students listen to "The Little Red Hen" by Paul Galdone.
    - Bring in seeds, stems, flour, and bread and put them down in a random order. Have student pay attention to the steps the hen takes to plant her wheat . Have students work together to put items in the correct order.
- Have students label and color a wheat stalk.
- Discuss what wheat needs to grow (Light, water, air, and nutrients). Then, help students plant their own wheat.
    - As their wheat grows, you can continue to discuss this lesson by asking these questions:
    - How many days did it take for the wheat seeds to sprout?
    - What do the wheat plants look like?
    - What do the plants need to grow?
- Watch a video of wheat being harvested.
- Watch a video from a local farmer discussing wheat growth and harvest.
- Invite a wheat farmer into the classroom.
- Have students research each step of growing wheat and write a paragraph explaining what happens at each phase. How long does each phase take?
- Bring in different types of bread (sweet, rye, sourdough, white, etc) and have students sample each type. After sampling have students write about which kind they liked the best and why.
- Encourage students to try making their own bread at home.
- Have students do IAITC's Soil Sam lesson, using wheat seeds for the "hair."
- Go to agintheclassroom.com to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!



"A FRUIT IS A SUITCASE FOR SEEDS"

Jean Richards

Many seeds travel inside fruits. The fruit is like a suitcase for the seeds. It protects them on their trip. Readers will learn how fruits are designed to protect a plant's seeds and also to help the plant spread its seeds to new places.

MY LITTLE SEED HOUSE

Show students the basics of seed germination with this fun activity.

See following page(s) for lesson plan!

Science

My Little Seed House

Grade Level
K-4

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will have a better understanding of the process of seed germination.

Materials Needed
- *The Tiny Seed* by Eric Carle
- Soybeans or other large seeds
- Resealable baggies
- Cotton balls
- Scissors
- Staplers
- Spray bottle(s) with water
- Coloring utensils
- Copies of seed house template

Standards
Common Core
CCSS.ELA-Literacy.CCRA.R.1

NGSS
K-LS1-1; 2-LS2-1

Lesson Summary
This lesson is designed to give students a hands-on activity that shows how seeds germinate. Students will create their very own "seed house" which allows them to observe the process of seed germination!

*Activity adapted from National Ag in the Classroom

Suggested Sequence of Events:
1. Read through the IAITC Soybean Ag Mag to learn more about soybeans! Interactive online versions can be found on our website.
2. Pre-activity Engagement:
    - Ask your students if they can name any foods that come from plants and list them on the board.
    - Then ask them where those plants come from. If they start as seeds, what do those seeds need to start growing? Again, list their ideas on the board.
3. Complete the activity following the procedures:
    - Read *The Tiny Seed* by Eric Carle as a whole class to snag student interest and introduce them to seed growth. When you're done, ask your students what the tiny seed needed to grow into a giant flower! Compare what they learned from the story to their original ideas listed on the board.
    - Give each student a copy of the seed house template and have them color their house and then carefully cut out around the house and cut out the square in the middle.
    - While they are coloring and cutting, hand out the rest of the supplies. Each student should get several soybeans (or other large seeds), a resealable baggie, and 5-6 cotton balls.
    - Use the spray bottle to moisten their cotton balls.
    - Have them place the cotton balls in the baggie and then the seeds on top of the cotton balls.
    - Close the baggie and staple it to the back of the seed house.
4. Whole class discussion and reflection of activity.
    - Talk about the connection between planting seeds and growing food.

TEACHER RESOURCES

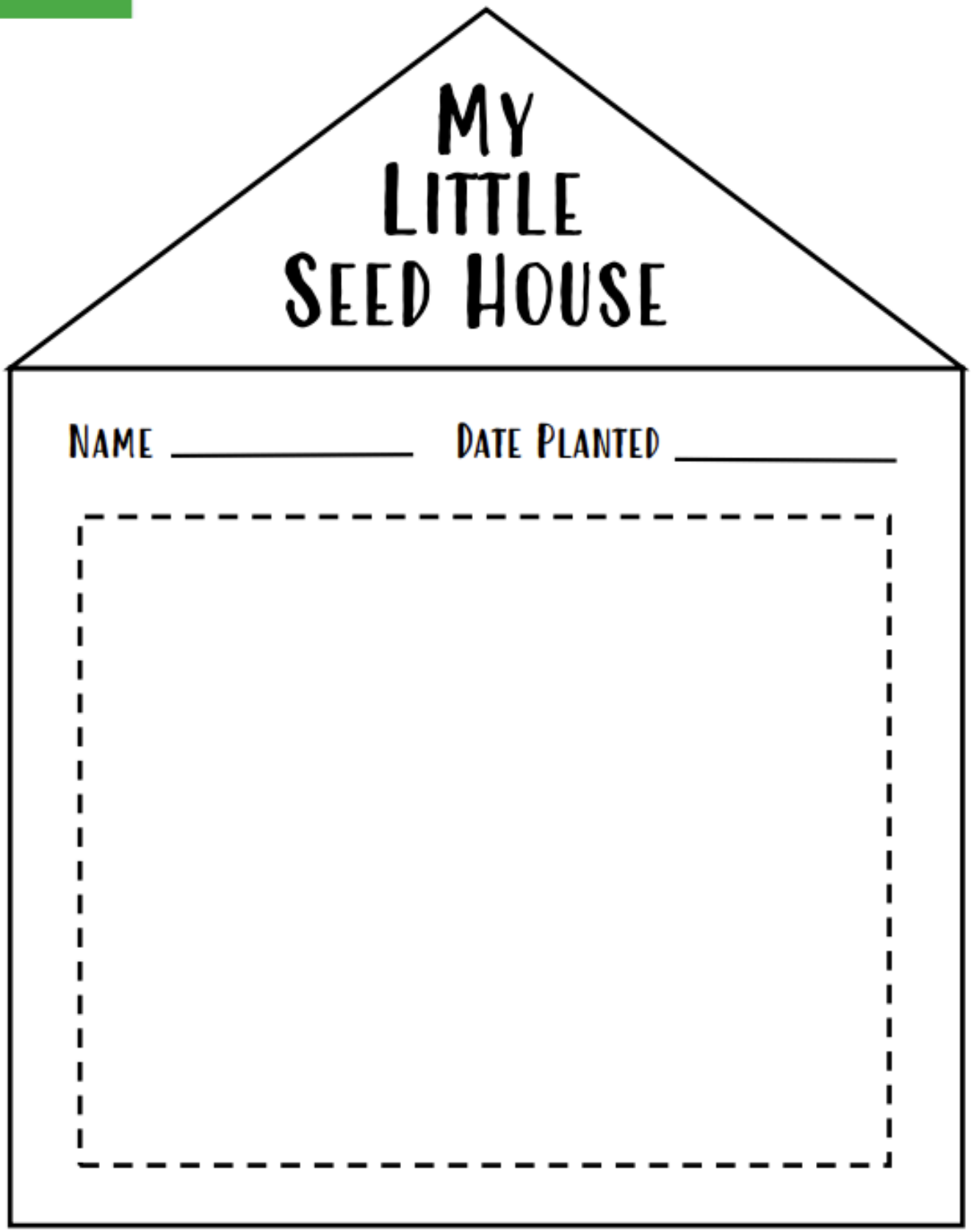
Extension Ideas:

- Have students recall from Eric Carle's *The Tiny Seed* book what helped the seed grow and what hurt the seed. Can they think of anything else that could be helpful or harmful? Why is this an important thing for farmers to know?
- Have students record their observations every few days, either through pictures or measuring growth with a ruler.
- Cover a seed house with black paper and once other roots start sprouting, check if the seeds under the black paper also started sprouting. Do seeds need sun to germinate? (Compare to how the sun is out in the winter but we can't grow plants because it's too cold.)
- Once the seeds start germinating, remove the seeds from the seed house and plant them either in little pots with soil or outside in a designated area.
- Read *Seed, Soil, Sun: Earth's Recipe for Food* by Cris Peterson to dig deeper into plant life cycle, growth, and harvest. Look at the pictures and have students analyze the images.
- Introduce the process of photosynthesis and how plants get their food!
- Watch a time lapse video of seeds growing.
- Talk about all the types of plants that grow from seeds. What do we use those plants for?
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

Picture from NAITC original lesson.

Science

Seed House Template



PLANT A SEED, READ At Your Library

Summer 2026

An iREAD Summer Reading Companion from Illinois AGRICULTURE in the Classroom℠

"THE SOIL IN JACKIE'S GARDEN"

Peggy Thomas

Join Jackie and her garden friends in this charming picture book as they discover the wonders of gardening, soil secrets, and the magic of composting.

SOIL SAM

Teach students about seed germination and the difference between monocots and dicots with this fun and silly extended activity.

See following page(s) for lesson plan!

Science Math

Soil Sam

Grade Level
K-5

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will have a better understanding of the growth and development of a seed.

Materials Needed
- Potting soil
- Untreated grass seed
- Small jars*
- Knee-high or footie stockings
- Water
- Jiggle eyes
- Fabric
- Optional: Copies of sports jerseys

*The opening of the jars should be small enough for the 'head' not to fall in.

Standards
Common Core
CCSS.Math.Content.3.MD.A.2; 3.MD.B.3

NGSS
3-LS1-1; 4-LS1-1.A

Lesson Summary
This lesson is designed to help students deepen their understanding of seed growth by creating a fun character named Soil Sam. Take it a step further and test variables that might affect seed growth!

Sports tees inspired by lesson from Lee County Ag in the Classroom.

Suggested Sequence of Events:
1. Read through IAITC Soil Ag Mag to learn about soil and its properties. Interactive online versions can be found on our website.
2. Complete the activity following the procedures:
   - Using a knee-high or footie stocking, place some grass seeds in the toe where you want the grass to grow. The toe of the stocking is the top of the head for Soil Sam. The grass will look like hair when it grows.
   - Pack a handful of soil in the end of the stocking on top of the grass seeds. Make sure the ball of soil is slightly larger than the small jar.
   - Tie a knot in the stocking under the ball of soil.
   - Completely wet the head of Soil Sam. Place the opened end of the stocking (the bottom of Soil Sam) in the jar filled with water, making sure the head is above the mouth of the jar. The end of the stocking will absorb the water to feed the grass seeds, which will germinate through the stockings. You may have to poke a few small holes in the top of Soil Sam to help the grass get through.
   - Now decorate! Use the sports jerseys included or your own materials to give your Soil Sam a personality.
   - Water as needed and be sure to cut the grass (hair) and style as desired. Will the grass grow better or faster with different variables like soil, light, water, fertilizer, etc.? Turn this into an experiment and test these variables to see what might affect the growth of the grass.
4. Reflection of activity. Compare with a classmate at the end of the experiment. Make sure you compare with someone that has used a liquid other than water, or someone who placed their Soil Sam in a different location. Discuss the differences observed.

TEACHER RESOURCES

Extension Ideas:

- Read "Diary of a Worm" by Doreen Cronin
- Read "A Handful of Dirt" by Raymond Bial
- Have students create a comic strip showing the process of germination.
- Have students write a story from Soil Sam's perspective.
- Show a labeled diagram of a grass plant.
- Scientific Inquiry: Have students think more deeply about plant growth and create their own question, hypothesis, and experiment to test! Will Soil Sam's 'hair' grow faster in Mountain Dew, coffee, or water? Does the amount of light affect the growth of the 'hair'? Do different fertilizers, potting soils, temperature, etc. affect plant growth differently?
  - Have students use the "Scientific Inquiry" worksheet to test their variables.
  - Ideas of substances to add to the water: store-bought liquid fertilizer, soda, apple juice, liquid dish soap (do the scents affect it too?), coffee, lemon juice.
  - Ideas of substances to add to the soil: store-bought fertilizer stick, coffee grounds, baking soda, Epsom salts, or try different types of soils.
- Measure Soil Sam's 'hair' each day. Make a bar graph to represent the data collected. Have students compare their data with other classmates who used a different variable.
- Create a large chart or graph that shows all students' data and hang it at the front of the classroom to compare and contrast how the variables affect plant growth.
- Watch a time lapse video of a grass growing.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

*Farmers have to be careful to not add too much fertilizer to their crop. They go to special classes and use mathematical problems to figure out the right amount for their specific plants and size of field. You shouldn't use too much fertilizer either, but you can experiment with different amounts! What would happen if you did use too much, or too little?