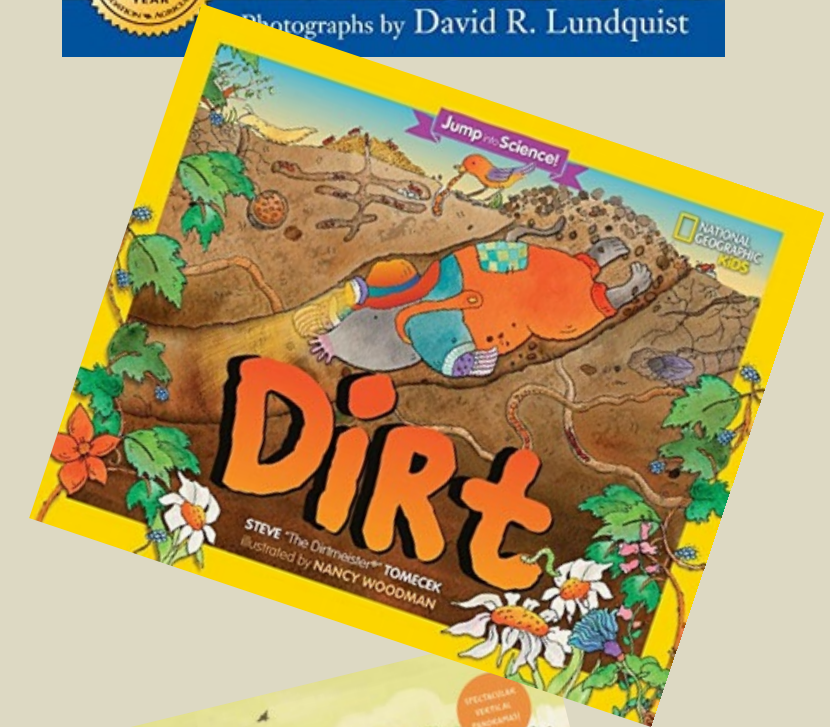
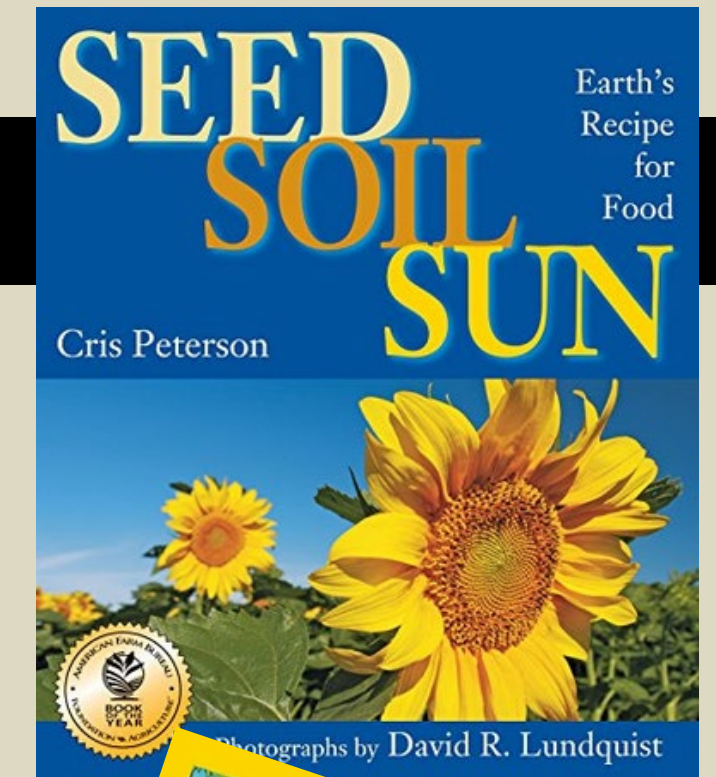




Help Your Students Bloom with Spring-Themed Lessons



Slice of Soil



Summary

www.agclassroom.org



Earth



75% Water



Inhospitable
Land



Habitable Land
(houses, roads, open areas)

25% Land

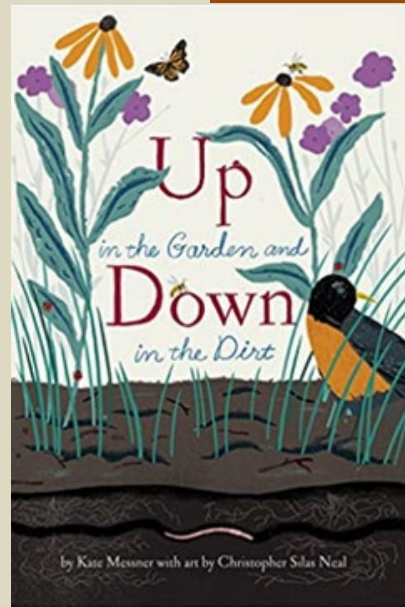
Agricultural
Land

Land used
for food crops



Livestock feed
and grazing

Soil Your Undies

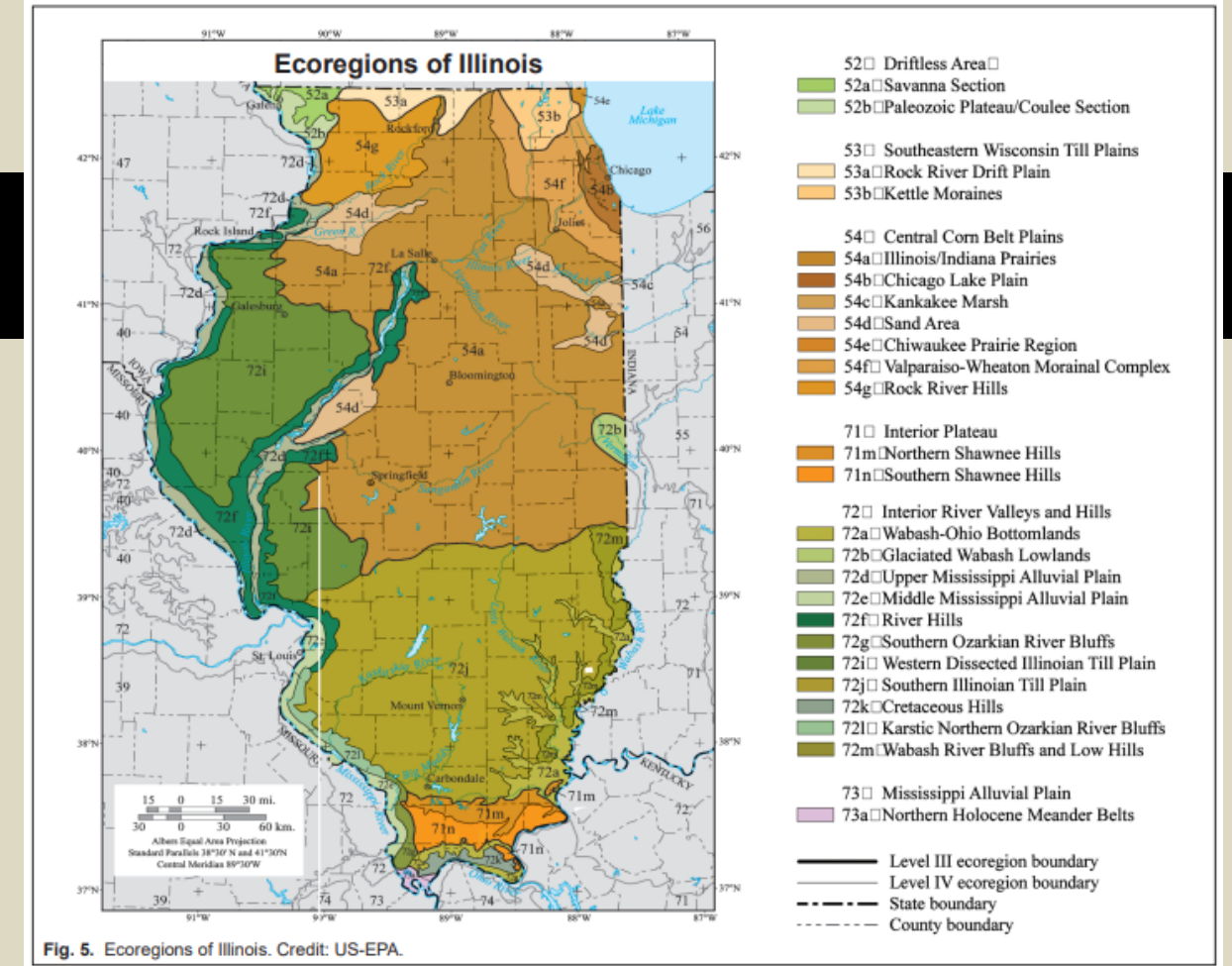


- Keep "clod" intact
- Record observations of layers of soil, critters, roots, and fungi present at different depths

- Collect soil samples
- Add a rain gauge and thermometer to location
- Take pictures of surrounding environment

Dig up
after 60
days!

How much
of your underwear
decomposed?



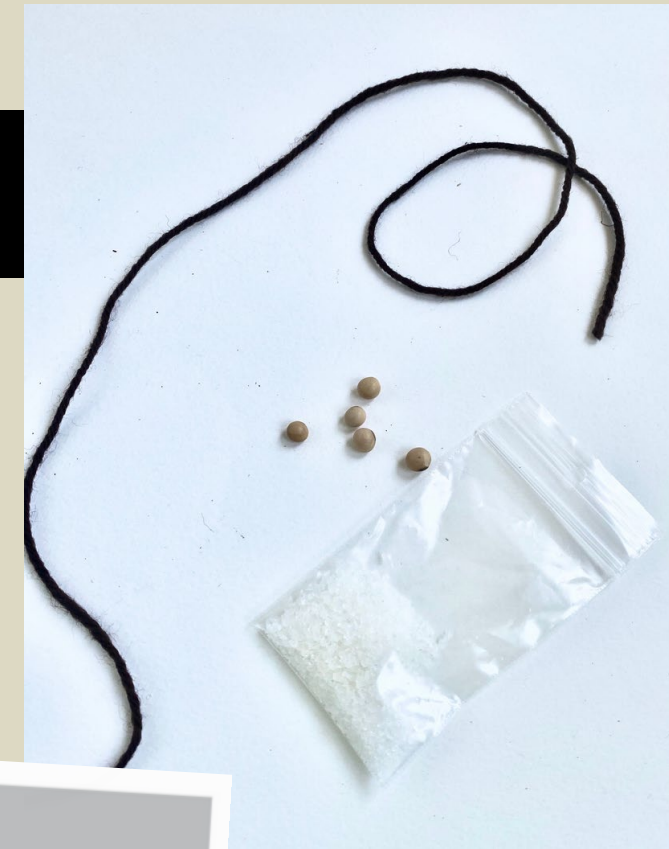
www.soils4teachers.org



Circle of Earth Bracelet



Beanie Baby



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 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

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 end the yarn in a knot.
7. Wear your beanie baby like a necktie and tuck it into your shirt (it's a little at first!).
8. Check on your beanie baby several days to observe germination and its growth!

Make a Prediction!
How long will it take for your seed to germinate?

For more great educational agriculture resources, visit: agintheclassroom.org

BEANIE BABY STUDENT WORKSHEET

Vocabulary

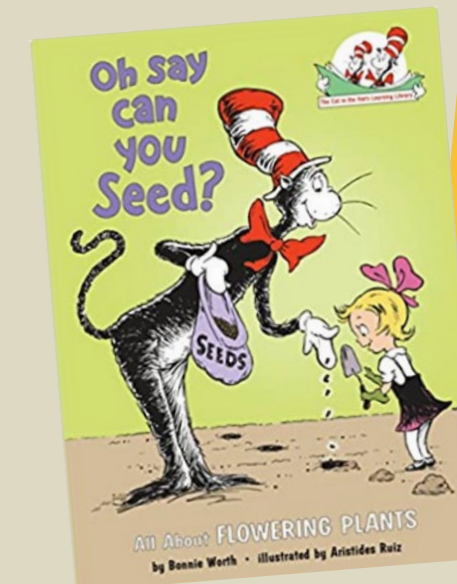
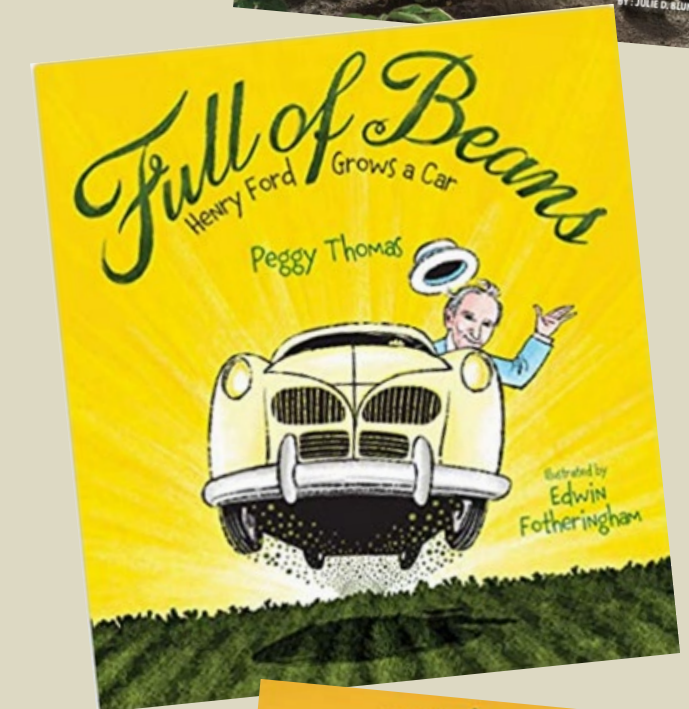
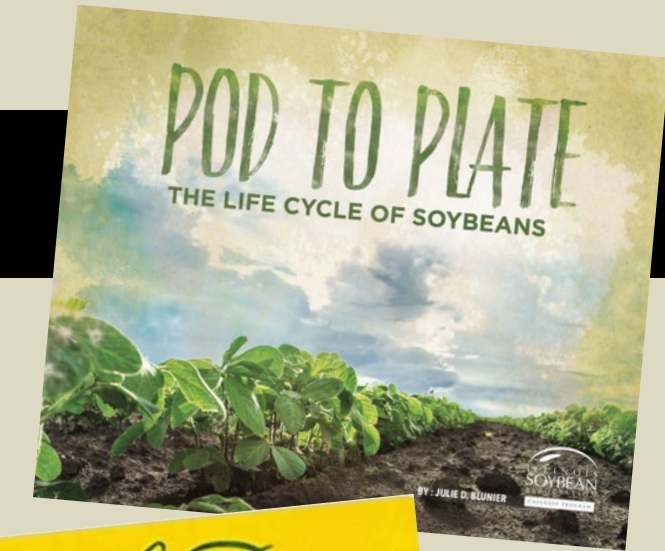
Cotyledon: a seed leaf stored in a seed which are the first leaves the plant will have.
Embryo: part of a seed that develops into a new plant, including the stem, leaves, and roots.
Germination: the phase of plant growth when the seed begins to sprout.
Hilum: the scar on a seed marking the point of attachment 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

Diagram Labels: Leaflets, Stem, Leaf, Seedpods, Seeds, Nodules, Roots.

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Throw & Grow



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

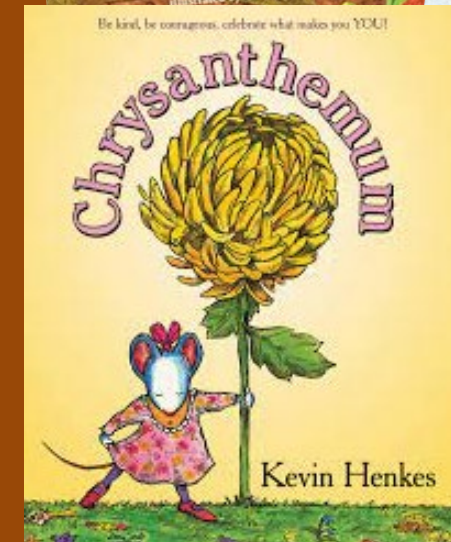
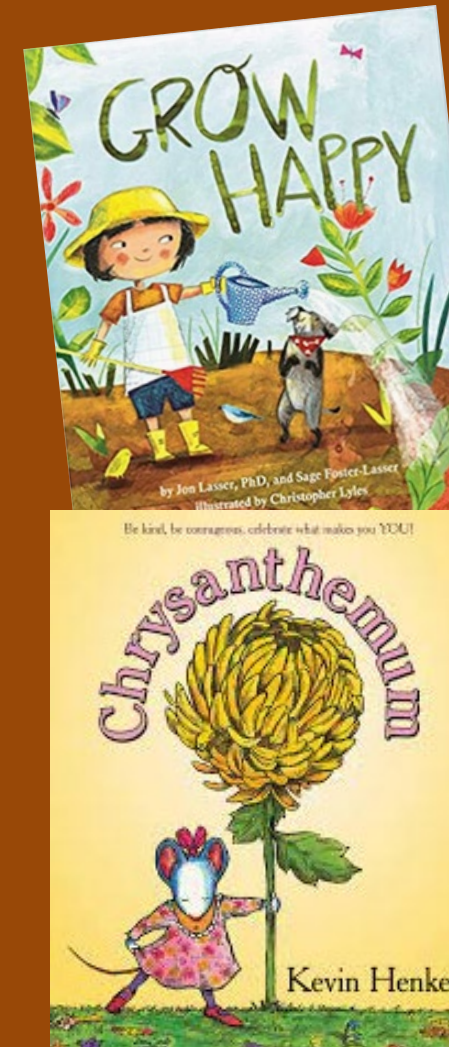
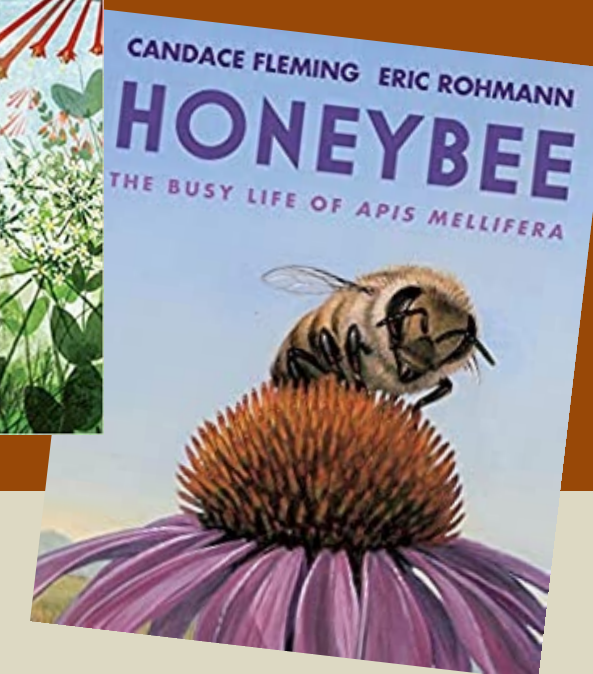
Standards
Common Core
CCSS.ELA-Literacy.RI.4.7; SL.4.1

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

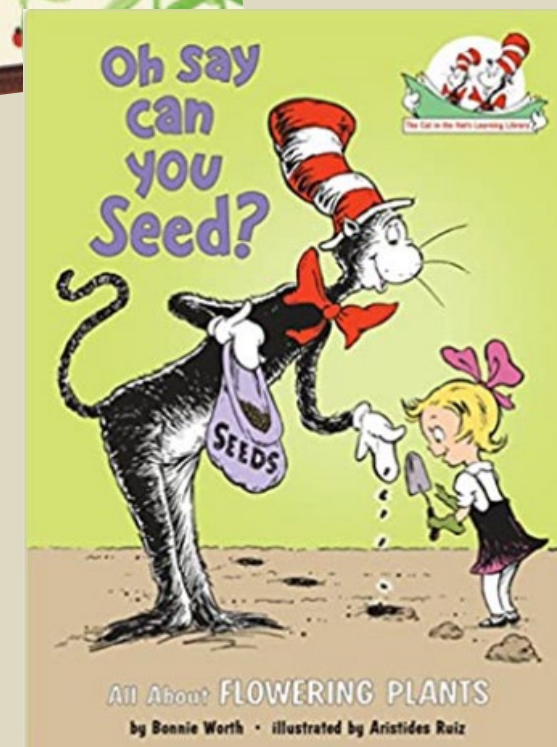
Lesson Summary
This lesson is a fun, hands-on activity designed to teach students more about the importance of pollinators. Students will also learn about seed germination and plant growth as you watch your flowers grow!


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.




The image displays three children's book covers. The top-left cover is for 'Plant the Tiny Seed' by Christie Matheson, featuring a sun, a hummingbird, and various flowers. The top-right cover is for 'The Curious Garden' by Peter Dinkley, showing a boy in a hat pushing a wheelbarrow filled with gardening tools. The bottom cover is for 'Oh Say Can You Say' by Dr. Seuss, featuring the Cat in the Hat and the title in large, stylized letters.





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.

- Cut a piece of toilet paper, or seed tape, to the proper length your teacher instructed.
- 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!



- Using your spray bottle, lightly spray water onto the seed tape to moisten it. It should not be soaking wet!
- 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.
- 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.
- 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!
- On planting day, dig a furrow in your garden space. Your furrow needs to be the same length as your seed tape!
- Place the seed tape in the furrow and cover it with soil.
- 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!



For more great educational agriculture resources, visit: agintheclassroom.org

Ode to a Vegetable

Example:

Can words capture the beauty of a carrot?

After months of growing, only just now ready to be pulled, no

Ripped, from the clutches of the warm brown earth, quickly brushed off and

Ready to snap between the molars of a hungry gardener.

Other vegetables stand no chance, when compared to the

Tremendous technicolor beauty of a fresh orange carrot,

Shaded from the sun for so long, but now ready to serve its final purpose.

Zucchini looks like a caveman's club, always ready against a foe.

Zucchini sounds like the thunderous claps of a summer rainstorm.

Zucchini smells like the final bell on the last day of school.

Zucchini tastes like the bright summer solstice sunlight.

Zucchini feels like a newborn lamb, nestled in the straw.



ODE TO A VEGETABLE

Grade Level
4-8

Length of Lesson
45-60 minutes

Objective

By the end of this lesson, students will be able to create multiple forms of poetry.

Materials Needed

- Copy of *Ode to an Onion*, by Alexandria Giardino

Standards

Common Core
CCSS.ELA-Literacy.RL.4.5;
RL.5.2; RL.5.4; RL.5.4;
RL.6.4; RL.7.4; W.4.9;
W.5.9; W.4.3; W.5.3;
W.6.3; W.7.3

Lesson Summary

This lesson is designed to introduce or strengthen students' skills of writing poetry. Students will write multiple "odes" to vegetables using simple, common poetic forms. This lesson would work well in a larger poetry unit.

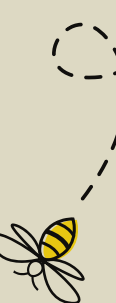
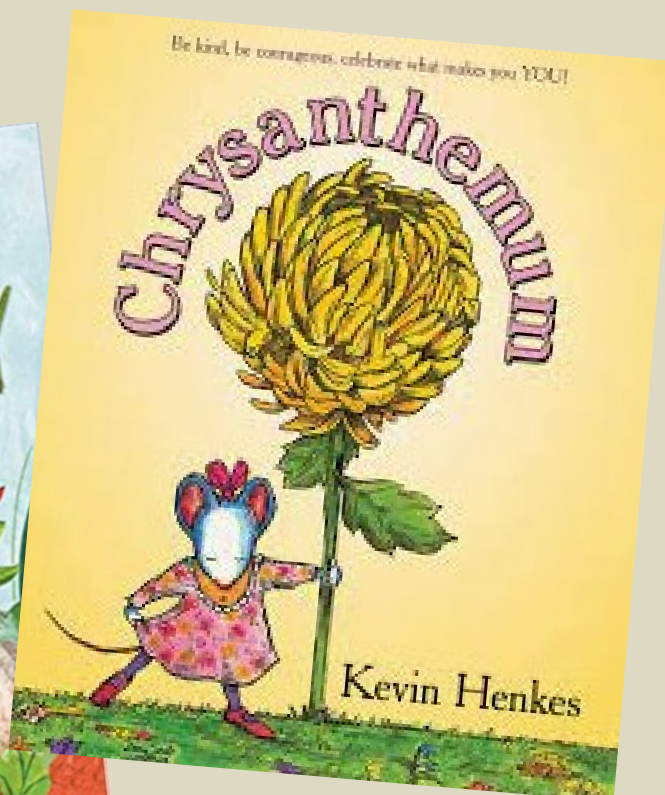
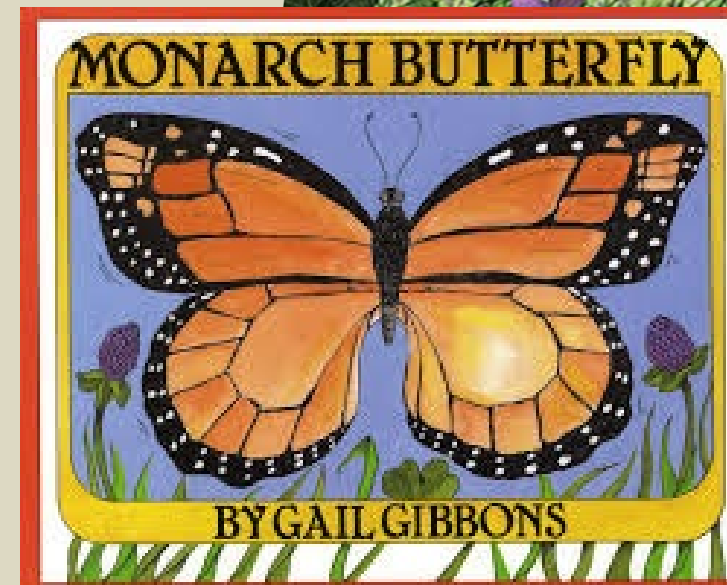
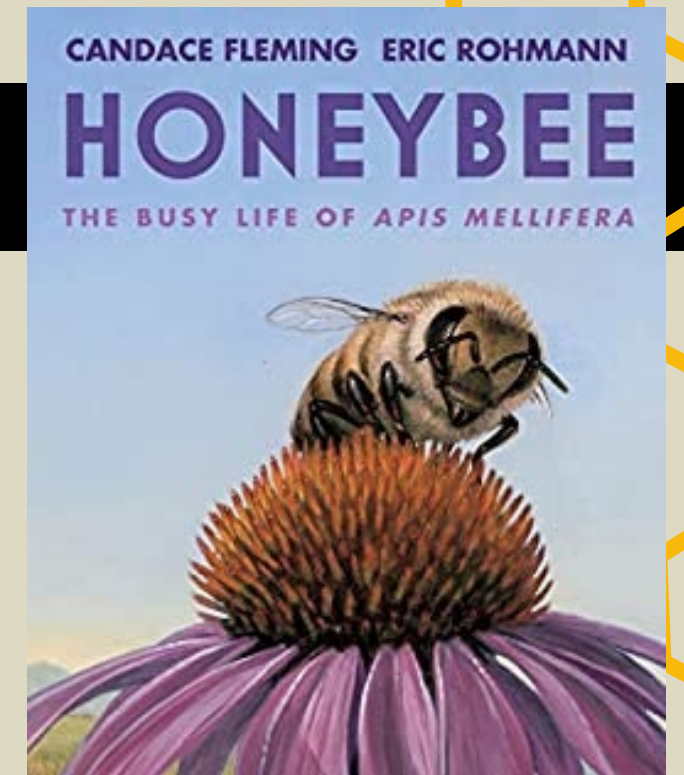
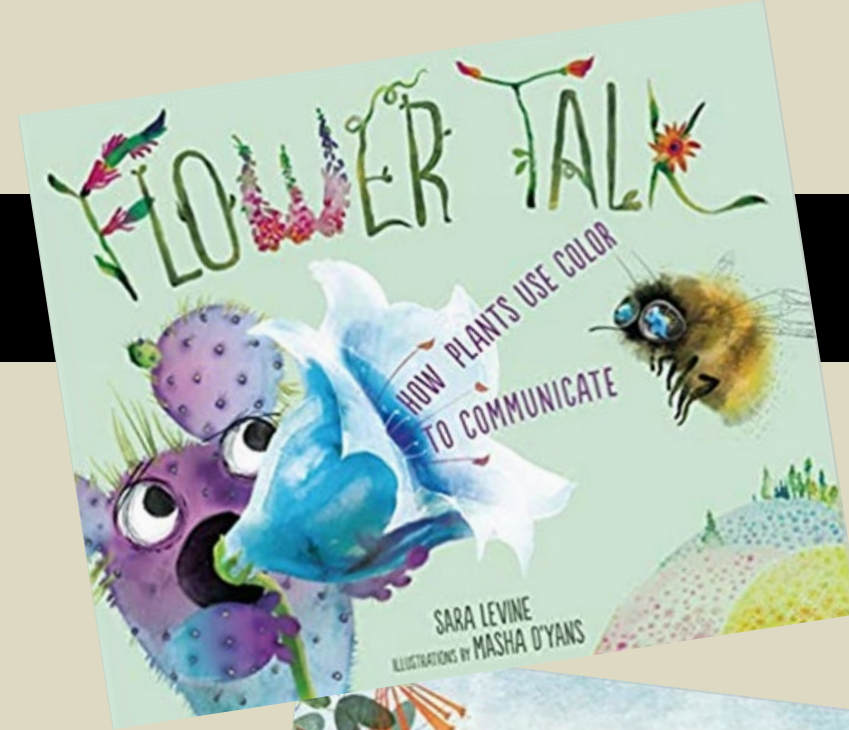
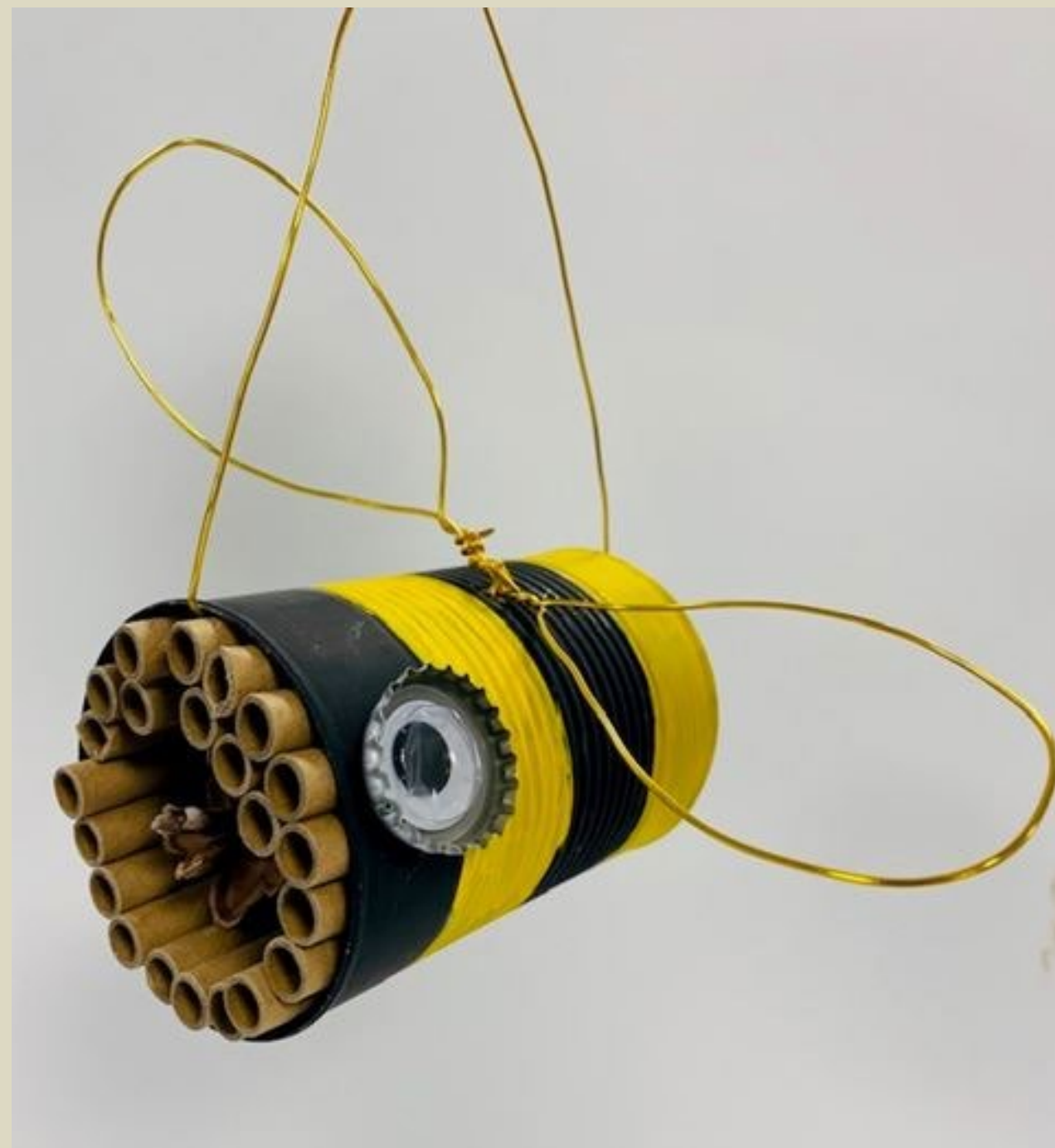
Suggested Sequence of Events:

1. Read through the [AITC Seasons Ag Mag](#) to learn more about specialty crop and vegetable production in Illinois.
2. Read *Ode to an Onion*, by Alexandria Giardino, to learn the (fictional) story behind Pablo Nerudo's poem "Ode to an Onion."
3. Depending on the age of your students, you may also choose to read some or all of Nerudo's poem, available both online and in the back of *Ode to an Onion*.
4. Complete the activity following the procedures:
 - Ask students to make a list of their favorite vegetables.
 - Next, have them choose a few of their vegetables and make a list of the qualities of each. You may also choose to have them practice using word webs or other graphic organizers utilized in your classroom.
 - Share the types and examples of different poetic forms provided (or choose your own) and ask students to choose a poetic form to use to write their "Ode to a Vegetable" poem.
 - For older students, and if time allows, you might have students write poems in more than one form.
4. Whole class discussion and reflection of activity. Ask students to share their "odes" to the small groups or the whole class. Discuss the different poetic elements and styles used by each student.

For more great educational agriculture resources, visit: agintheclassroom.org



Bee Hotel



Vermicomposting



TEACHER RESOURCES

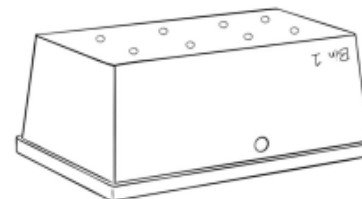
HOLES FOR VENTILATION

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



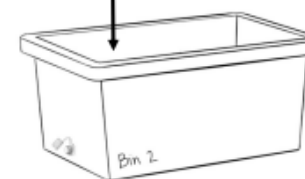
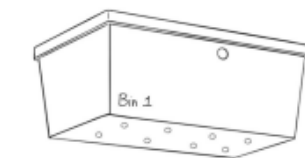
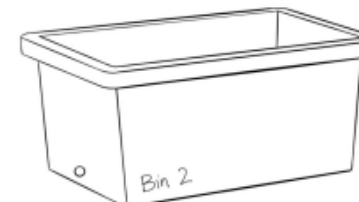
HOLES FOR DRAINAGE

1/8" drilled holes
Bottom of the first bin



HOLE FOR COOLER DRAIN

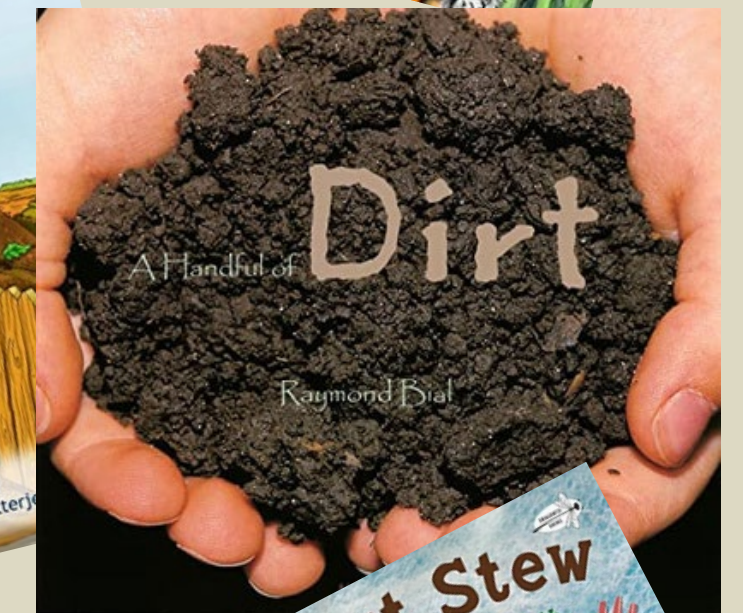
1" drilled hole
Bottom edge, 1 side of the second bin



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!



Egg-Cellent Embryology

EGG-CELLENT EMBRYOLOGY

Grade Level: 3-6

Length of Lesson: 5-10 minutes each day for 21 days

Objective: By the end of this lesson, students will have a better understanding of how chickens develop inside an egg.

Materials Needed:

- Copies of chicken development pictures
- White plastic eggs
- Egg cartons

Standards:

NGSS

3-LS1-1, 3-LS4-4, 4-LS1-1, MS-LS1-1, MS-LS4-3

Lesson Summary: This lesson is a fun activity that allows students to see how the chick is developing inside of the egg, whether you are incubating eggs in your classroom or not! Students should have a basic understanding of the life cycle of a chicken (Egg—Embryo—Hatching—Chick—Chicken).

Suggested Sequence of Events:

- Set Up:** Print the embryo development pictures on printer paper or cardstock, cut them all out, and then laminate for multiple use! Then number the plastic eggs 1-21 and place the embryo development picture into its matching numbered egg. Lastly, place the eggs in the egg cartons. Make enough sets for students to work in small groups of two or more.
- Read through the [JLTC Poultry Ag Mag](https://www.aginthe classroom.org) to learn more about chickens and other poultry facts! Interactive online versions can be found on our website.
- Complete the activity following the procedures:
 - Define this is an important part of all plant and animal life cycles!
 - Ask your students if they know how the embryo develops in its egg. Have your students transform and share.
 - Read the background information on the Teacher Resources page to your class and then have students write a few questions they hope to have answered about chick development.
 - Talk about what chicken eggs require for a healthy chick to grow (temperature, rotation, tools used to help, etc.) Each day, have students open the egg with the correct chick about what the embryo looks like. Then, have them flip over the laminated egg and read about what is developing on that day.
 - Whole class discussion and reflection of activity. Have students read the questions they wrote before beginning the activity and answer them either by writing complete sentences and/or sharing with the class. Here are some other discussion starters: How could you tell the differences between the stages? What happens to the yolk, vitelline membrane, and the albumen?

sets of our Ag Mags!

Two illustrations surround the albumen that are protective barriers against bacteria.

Air Cell: Pocket of air formed at the large end of the egg that increases in size with age. This is caused by the contraction of the vitelline membrane as the egg vents after laying.

Thick & Thin Albumen:

Egg Shell: Outer covering of egg, composed of layers of calcium carbonate. Provides protection to the rest of the egg.

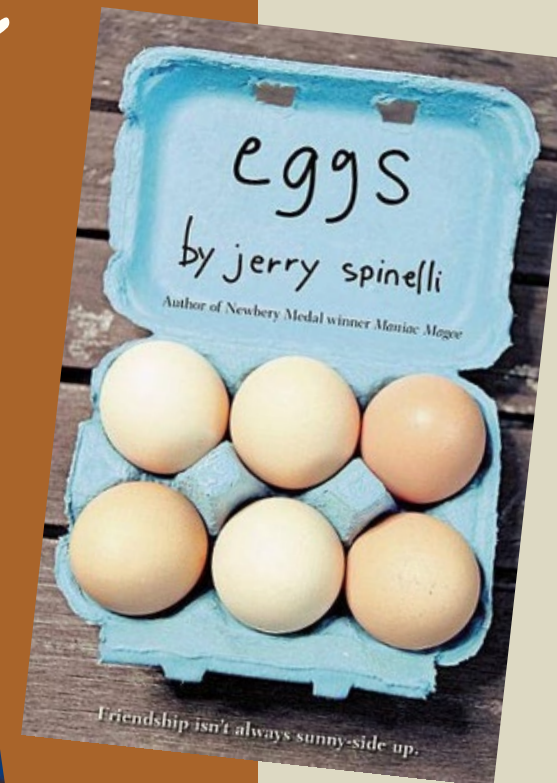
Yolk: Yellow portion of the egg. The yolk is the major source of vitamins, minerals, and fat and about half of the protein.

Chorus: Faint, cord-like strands of egg white that anchors the yolk in the center of the egg.

American Egg Board

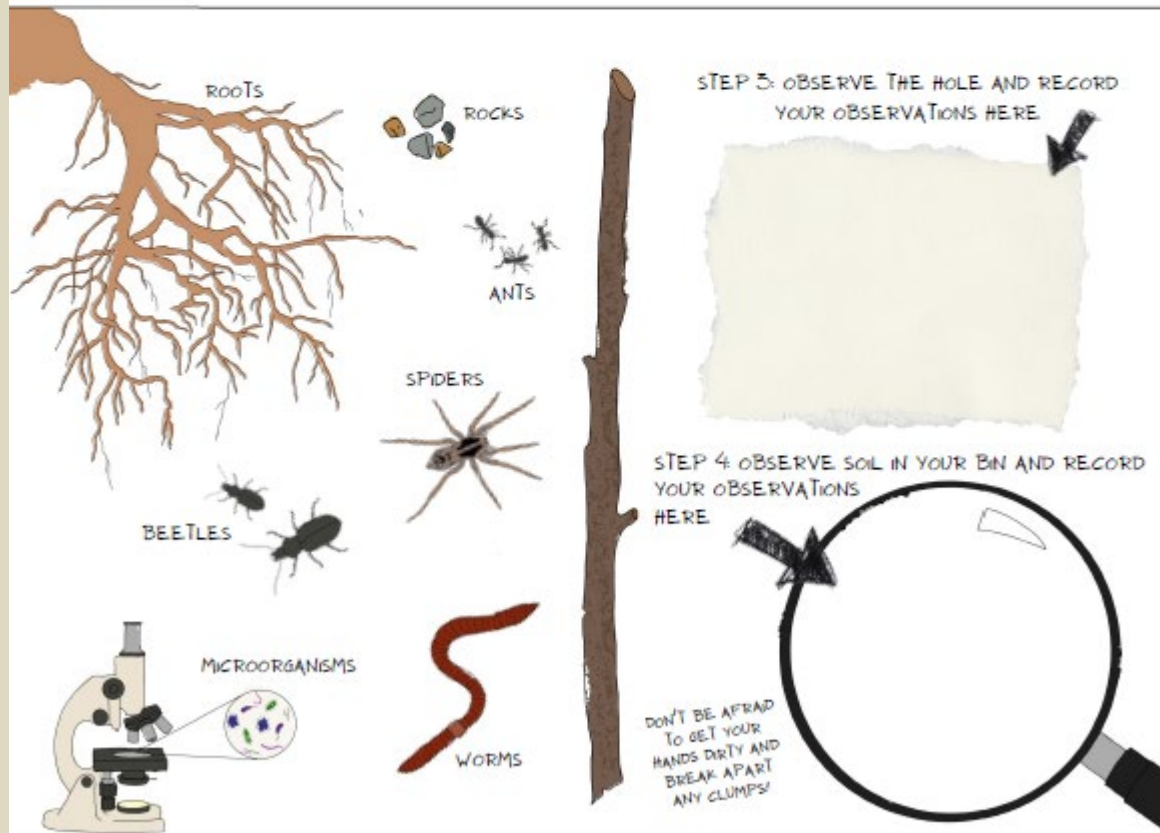
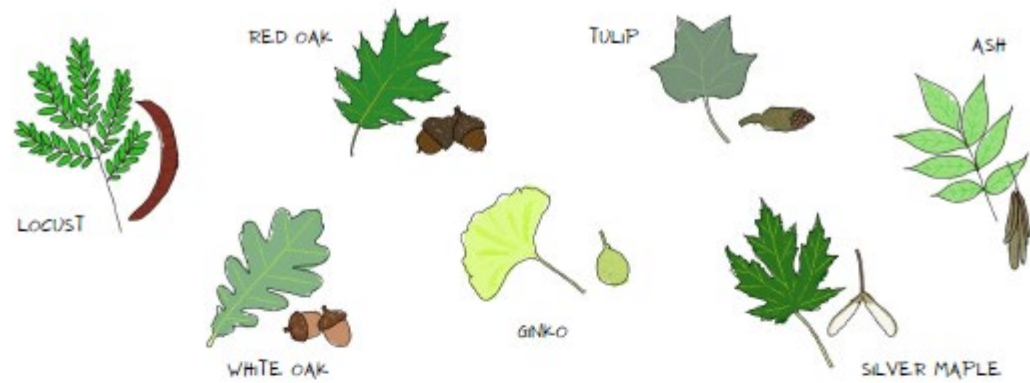
For more great educational agriculture resources, visit: [aginthe classroom.org](https://www.aginthe classroom.org)

Illinois AGRICULTURE in the Classroom



Outdoor Adventure Flip Book

HERE ARE SOME COMMON, NATIVE ILLINOIS TREE LEAVES AND SEEDS:

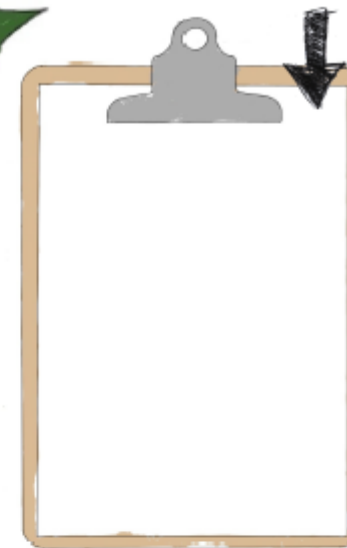


SOIL

SOIL IS MADE UP OF ORGANIC MATTER (ONCE LIVING PLANT AND ANIMAL MATTER), MINERAL PARTICLES (SAND, SILT, AND CLAY), AND PORE SPACES (OPEN AREAS POTENTIALLY FILLED WITH AIR, WATER, AND LIVING ORGANISMS).

THE SOIL BENEATH OUR FEET IS AS IMPORTANT AS THE AIR WE BREATHE AND THE WATER WE DRINK! THIS IS BECAUSE IT IS THE PRIMARY SOURCE OF FOOD, FEED, FUEL, FORAGE, AND FIBER.

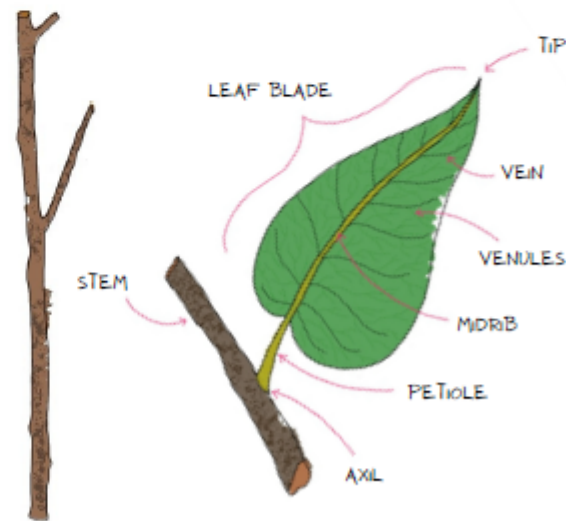
STEP 1: CHOOSE YOUR DIGGING SPOT AND DESCRIBE SURROUNDINGS HERE



STEP 2: CAREFULLY DIG YOUR HOLE AND PUT THE LOOSE SOIL INTO A BIN

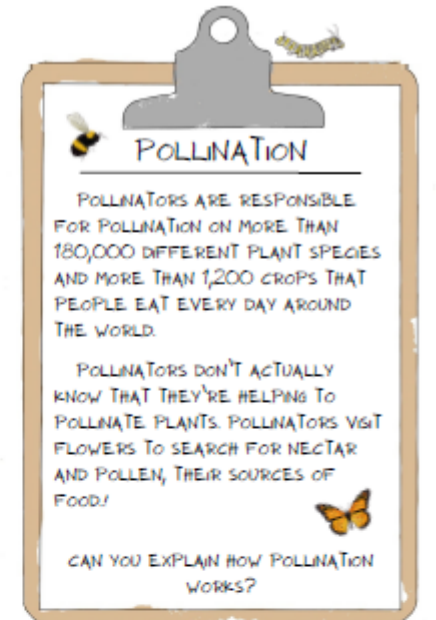
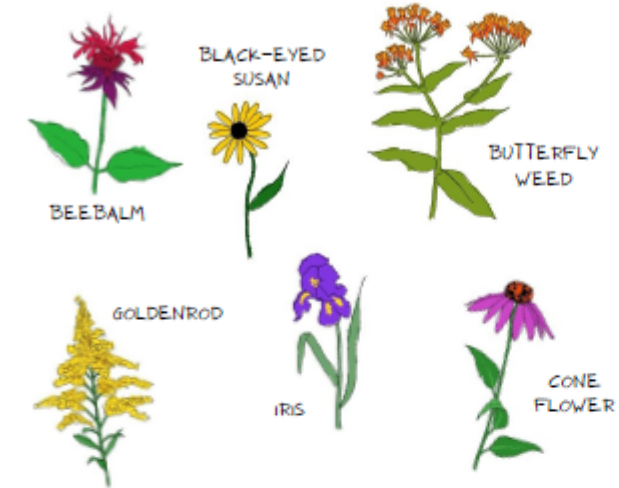


FIND A LEAF AND DRAW IT HERE!

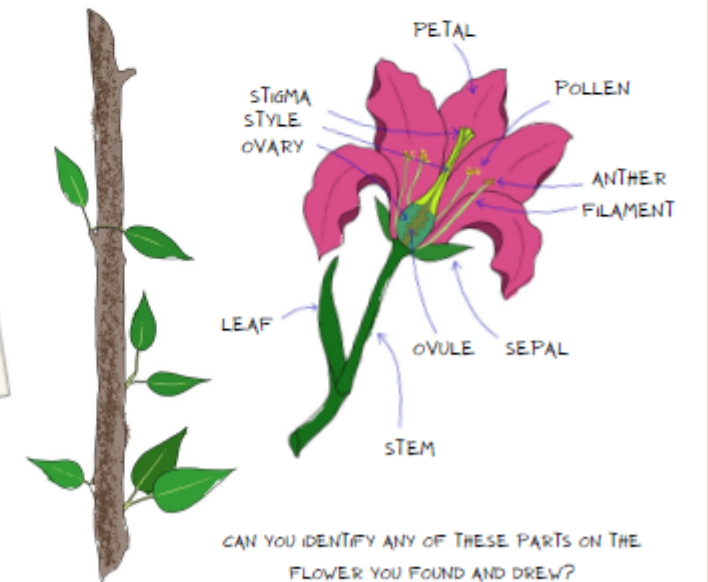


TREES

HERE ARE SOME COMMON NATIVE ILLINOIS FLOWERS:



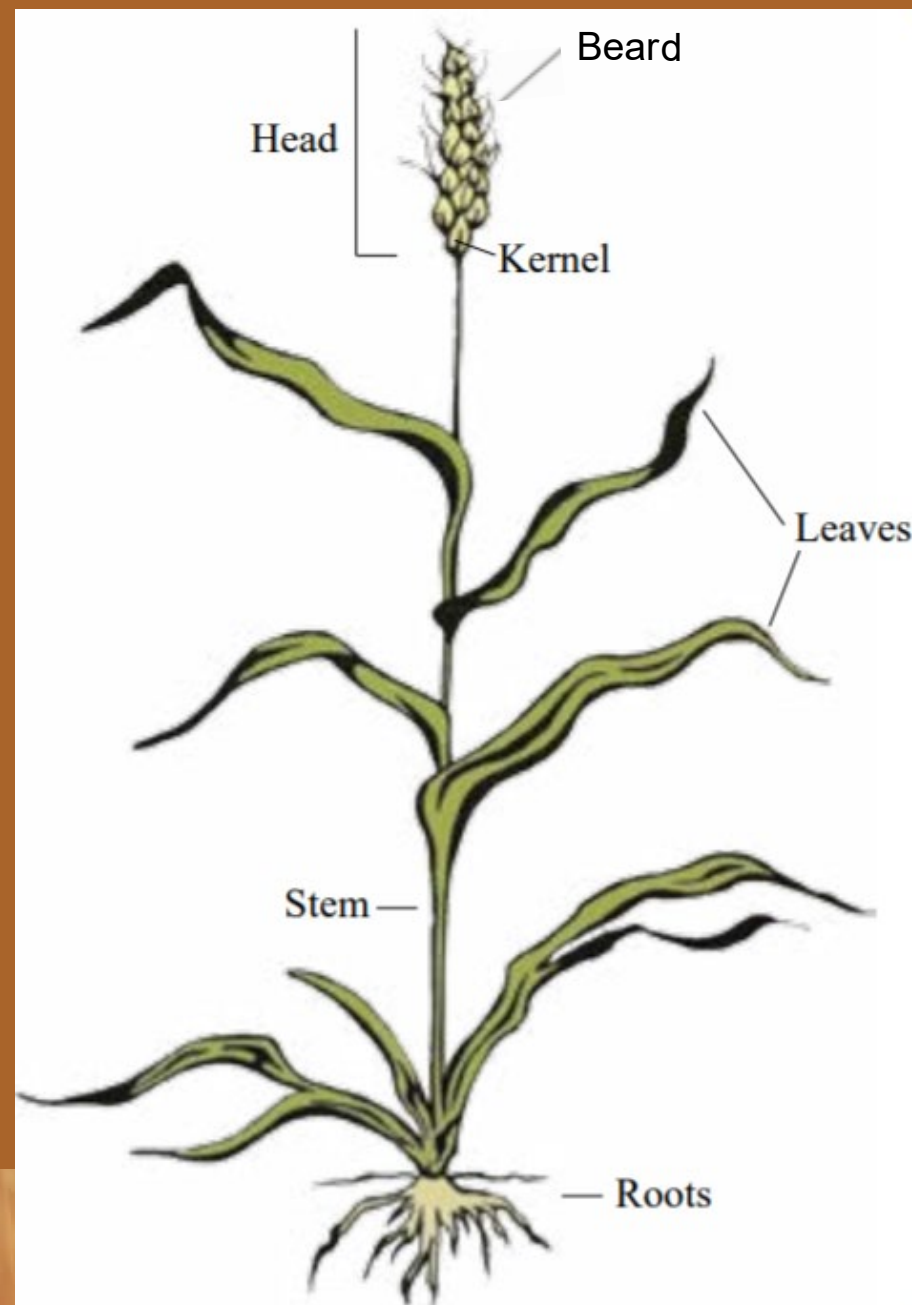
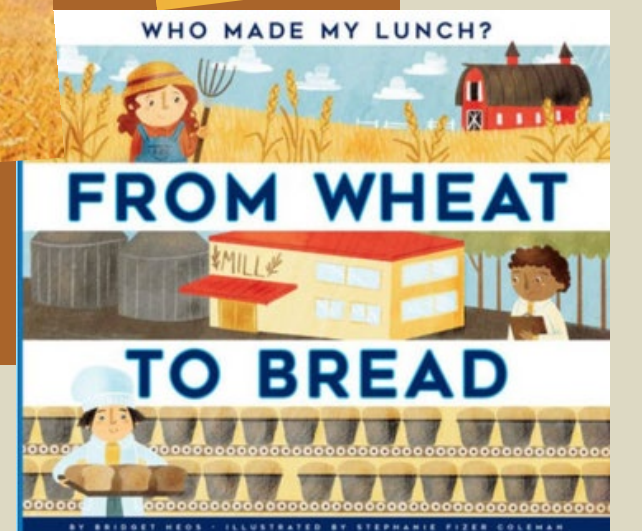
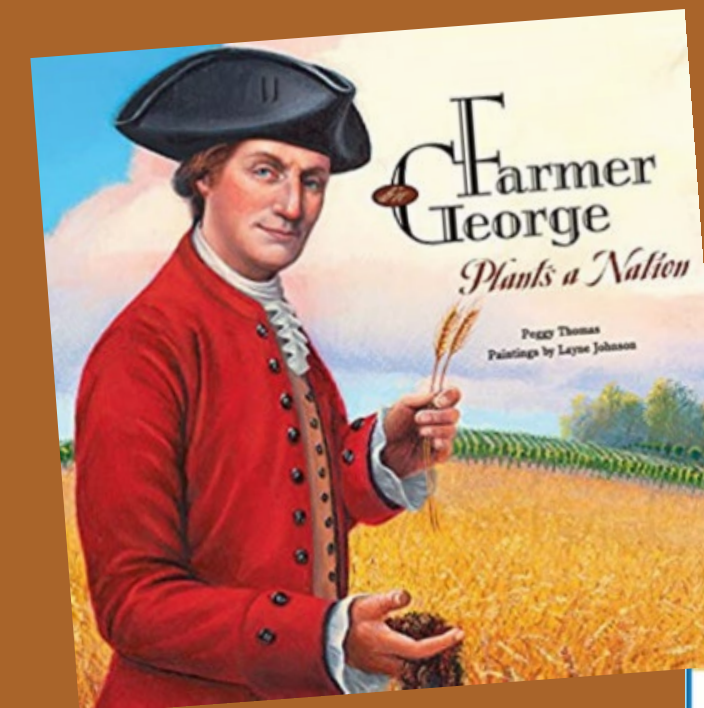
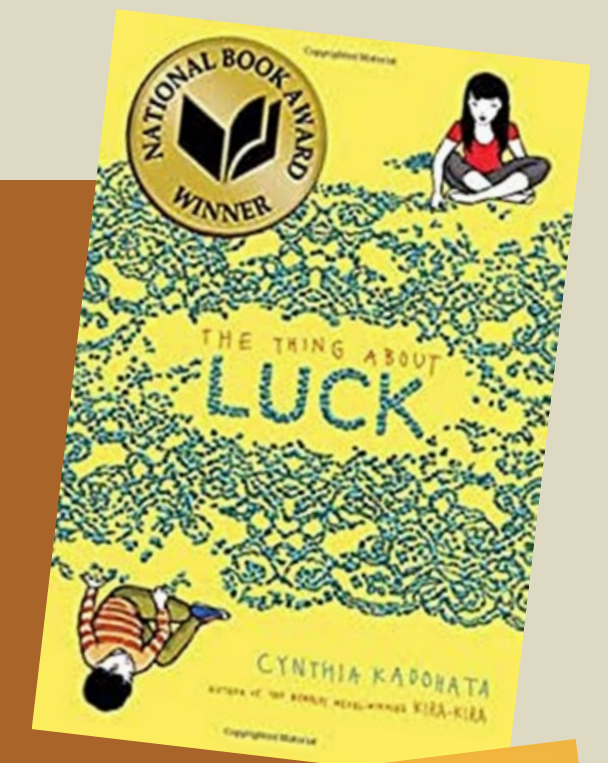
FIND A FLOWER AND DRAW IT HERE!



CAN YOU IDENTIFY ANY OF THESE PARTS ON THE FLOWER YOU FOUND AND DREW?

FLOWERS

Wheat Milling



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.C
C.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.

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Thank you!

