

Born, Built & Grown



*2018 Summer Ag Institute
Companion Lesson Booklet*

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Web Presence

www.agintheclassroom.org



Google Custom Search



Links

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IL Farm Life

County Support

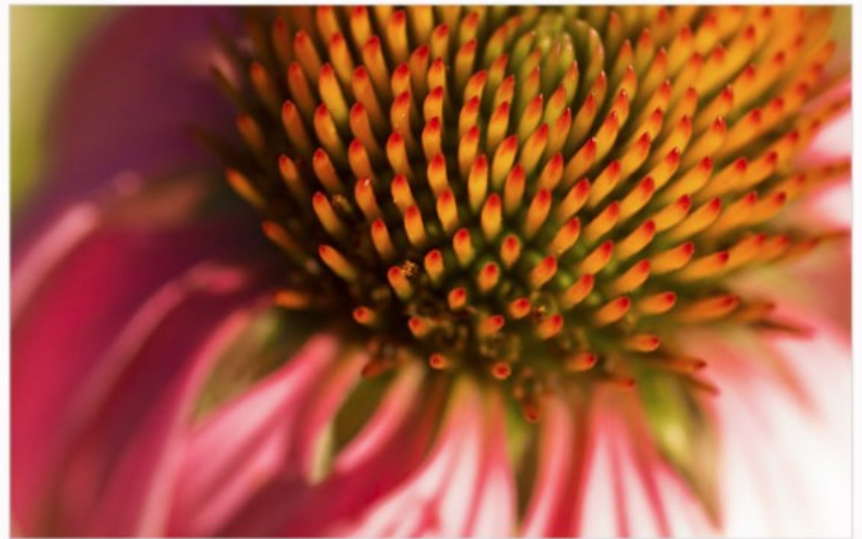
Agriculture in the Cafeteria

Environmental Stewardship

Illinois Reads

IAITC FarmWeek Weekly Article

National Milk Day



United States Department of Agriculture
Agriculture in the Classroom



facebook.com/agintheclassroom

twitter.com/ilagclass

pinterest.com/iaitc

Instagram.com/ilaitc

Website Information

Teacher Resources—In this section you will find printable lesson plans, lesson booklets, AITC materials and make-n-take activities that are ready for use in your classroom. You will also find grants and other resources available to you.

Contact Your County Agricultural Literacy Coordinator—Here you will find our County Coordinators listed in alphabetical order by county. These coordinators will help you obtain our free resources, including Ag Mags and kits, and they may even be able to set up time to come into your classroom to do activities with your students.

Teacher Workshops—Various professional development opportunities for educators are available, many of which offer PDCHs. Check here often to see when these are offered in your area.

IL Farm Life—In this section, you will find photos, website links and other resources about general Illinois agriculture.

County Support—This section is for county coordinators and staff.

Agriculture in the Cafeteria—This section highlights our interactive My Illinois Plate poster. You can meet some of the farmers who grow your food!

Environmental Stewardship—This section highlights environmental lessons, videos and other resources. Make sure to check out the section titled, *Nutrient Hero Videos and Stories*.

Illinois Reads— In this section, you will find website links, videos, lesson plans and books that highlight Illinois Reads. Illinois Reads is a yearly statewide project that promotes reading for all Illinois citizens.

IAITC FarmWeek Weekly Article— Engage in reading for informational text, current events and reacting to a non-fiction news source. Sign up to have the weekly article delivered to your email.

National Milk Day— We celebrate National Milk Day on January 11, in commemoration of the first day milk was delivered in sterilized glass bottles for the first time. In this section, you will find website links, videos and other resources about Dairy.

Social Media Buttons—Become a fan of our Facebook Page and follow us on Twitter, Pinterest and Instagram by clicking the links on our website or by searching for Illinois Agriculture in the Classroom. This is a great place to collaborate and interact with other teachers and share wonderful ideas. We also work to provide new videos, lessons, articles and websites that will help you with lessons in your classroom.

U.S. Department of Agriculture AITC—Click here to go to the National AITC website. This is a great place to go and see lessons from Ag in the Classroom programs around the country.

Links—Find links to other agricultural organizations.

Support AITC—Clicking here will take you to the IAA Foundation website. The IAA Foundation raises funds for the Illinois AITC program in order to provide educators with free or low cost information and materials.

Contact Us—Here you will find contact information for Illinois AITC. However, your first contact should always be your County Ag Literacy Coordinator, who is your link for free materials, kits and information.

About AITC—Learn about the history of both the National and Illinois Ag in the Classroom Programs.

Search—Search for lessons, activities and materials that will be useful in your classroom.

Illinois Ag In The Classroom Teacher Grants

Illinois Agriculture in the Classroom offers grants of up to \$300 to Pre-School through High School teachers across the state of Illinois to fund projects promoting agricultural literacy in the classroom.

To apply for project funding, please complete the grant application using the link found on our website, <http://www.agintheclassroom.org/TeacherResources/Grants.html>, outlining the project, goals, and desired outcomes.

- Projects may be, but are not limited to, agricultural teaching units, classroom presentations, and career fairs. *Be creative and develop an **interesting, valuable agricultural experience** for your students.*
- Projects should focus on *integrating agriculture into a variety of curriculum areas.*
- Priority for grants will be given to grants that contain materials for use over multiple school years.
- High School Ag teachers may apply with an elementary teacher if their classes or FFA Chapters are working on an agriculture literacy unit. Grants and materials must reflect an Agriculture Literacy theme or component.
- Incomplete grants, or grants that request consumables, will not be considered. ***This grant will not fund consumable items.*** Funding for field trips, landscaping, plants, incubators and one time use consumables will not be granted.

In the past, grant reviewers have looked more favorably upon grants with a direct agriculture connection. Reviewers also recommend that your grant request be used in whole for a specific project rather than linked to other potential funding.

You may contact your county Ag Literacy Coordinator for help with this application. A listing of coordinators can be found on our website, www.agintheclassroom.org.

Application deadline is **October 1, 2018**

Teachers selected for project funding will be notified via email on **November 10**.

If selected, a Funding Agreement must be completed and signed by the teacher and building principal. The deadline to complete the form is **December 11, 2018**. **Funding Agreements not completed by the 12/11/18 deadline will forfeit the grant.**

A Final Report and project evaluation is due by **May 30, 2019**.

Illinois Ag In The Classroom Special Book Grants

Illinois Agriculture in the Classroom offers special topic grants to teachers across the state of Illinois to award and ship the books listed below.

To apply for project funding, please complete the grant application using the link found on our website, <http://www.agintheclassroom.org/TeacherResources/Grants.html>.

The application should outline the project, goals and desired outcomes of incorporating the books chosen. The total book value requested cannot exceed **\$250.00**.

- Projects should focus on *integrating agriculture into a variety of curriculum areas*.
- High School Ag teachers may apply with an elementary teacher if their classes or FFA Chapters are working with a specific classroom.
- For accepted grants, books will be shipped directly to the teacher at their school.
- The teacher will complete a Final Report by **May 30, 2019**.
- You may contact your county Ag Literacy Coordinator for help with this application. A listing of coordinators can be found on our website, www.agintheclassroom.org.
 - ◆ Application deadline is **October 1, 2018**.
 - ◆ Teachers selected for a book grant will be notified via email on **November 10**.
 - ◆ If selected, a Funding Agreement must be completed and signed by the teacher and building principal. The deadline to complete the form is **December 11, 2018**. **Funding Agreements not completed by the 12/11/18 deadline will forfeit the grant and no books will be shipped.**
 - ◆ A Final Report and project evaluation is due by **May 30, 2019**.

Book Grant Categories and Titles Available

Biographies

Farmer George Plants a Nation by Peggy Thomas (Grades 4-6)
Full of Beans, Henry Ford Grows a Car by Peggy Thomas (Grades 3-7) *Available February 1st
George Washington Carver for Kids by Peggy Thomas (Grades 3-8) *Available February 1st
John Deere, That's Who! by Tracy Nelson Maurer and Tim Zeltner (Grades 2-6)
Thomas Jefferson Grows a Nation by Peggy Thomas (Grades 4-6)

Graphic Novels

George Washington Carver Ingenious Inventor by Nathan Olson (Grades 3-8)
Levi Strauss and Blue Jeans by Nathan Olson (Grades 3-8)
Louis Pasteur and Pasteurization by Jennifer Fandel (Grades 3-8)
The Great American Dust Bowl by Don Brown (Grades 4-8)

Hungry Planet

Hungry Planet: What The World Eats by Peter Menzel & Faith D'Aluisio (Grades 6-12)
What the World Eats by Peter Menzel & Faith D'Aluisio (Grades 6-12)

Soybean

Auntie Yang's Great Soybean Picnic by Ginnie Lo (Grades 3-5)
Full of Beans by Peggy Thomas (Grades 3-7) *Available February 1st
Oh Say Can You Seed? by Bonnie Worth (Grades PreK-3)

It's our 200th Birthday and we are #ILLINOISPROUD!

200 years ago, on December 3, 1818, Illinois became the 21st state in the union. Now is the perfect time to pay tribute to these amazing people, places, and things that are being Born, Built & Grown in Illinois each day.

"Illinois is where the nation's greatest rivers meet. It's where the largest Native American city once thrived. Where the most trains cross and daily flights soar. Where automobiles and hard roads got a start. Where sound movies began. Where a nuclear chain reaction was first controlled. Where the first transistor gave rise to the computer age. Where the theory of superconductivity was born.

Where the biggest fair in the nation's history was held. Where the mail-order catalog and the warehouse of goods behind it got its start. Where the Blues echo and comedy is king. Where more than a quarter million men volunteered to fight to end slavery and save the Union. Where the nation's biggest plant helped make the world safe for democracy. Where the biggest restaurant company, biggest makers of mining equipment, aircraft, and tractors are based and where hundreds of start-up companies each year keep the engine humming. We are #IllinoisProud.

A statewide multimedia campaign will celebrate Illinois' influence on the world through music, sports, agriculture, literature, commerce, history, technology and innovation, transportation, and art and architecture."

Follow the link below to become a sponsor/donor, participate, shop and celebrate!

<https://illinois200.com>



A Trip Through Illinois

Grade Level: 4

Objective: This activity is designed to help students develop written and oral reports based on their research and prior knowledge of important people or places in Illinois.



Common Core: CCSS.ELA-Literacy.L.4.1; L.4.2; L.4.3; SL.4.1; SL.4.4; W.4.2; W.4.4; W.4.7; W.4.8

Social Science Standards: SS.IS.4.3-5; SS.G.2.4; SS.H.1.4; SS.H.2.4; SS.H.3.4

What You Will Need:

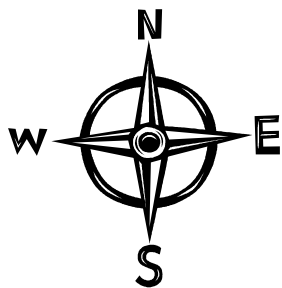
- *Born, Built & Grown* mini booklet
- *Investigate Illinois* fact sheet
- Illinois county map
- Access to Internet
- Access to a public/school library

Directions:

1. Explain that each student will have the opportunity to investigate a unique Illinois person, place or feature. Once they have researched their Illinois topic, they will write and present their reports to the class.
2. Each student will receive a “Born, Built & Grown in Illinois” booklet and have a couple days to review the topics included and give their top three choices. Alternatively, you may assign the topic to students.
3. Students will be assigned a topic, hopefully one of their top choices, and use that specific card within the booklet as a starting point to learn more about their Illinois person, place or feature. They should continue their research by finding books in the public/school library and by conducting searches online. They will each receive an Illinois county map to use during their oral presentation as a visual aide. They will need to color the county their specific person, place or feature is from.
4. Over the course of one or two class periods, students will present their oral reports and turn in their written reports.
5. While the reports are being presented, the audience will use the “Investigate Illinois Fact Sheet” to take notes during each presentation.

Lesson Extenders:

1. Investigate Illinois Matching Game: Make a set of signs, each displaying the name of one of the chosen Illinois topics. Tape one sign to the back of each of your students at random; making sure that no student receives the topic he or she researched. Tell students they must not try to see what their sign says, nor should they ask anyone to tell them.
2. Explain to the class that each student must identify the Illinois person, place, or interesting feature by circulating and asking other students only “yes” or “no” questions, e.g., “Am I a person?” or “Can you visit this place today?” They may only ask one question of each student before moving on to another classmate. Once they have identified their topic, they should return to their seat, but may continue answering questions from other students.



Investigate Illinois Fact Sheet

What was the topic of the report?

What is the most important fact about this Illinois person, place or feature?

Name two other important details you learned from this report:

1.

2.

Picky Pollinators

Grade Level: 2-4

Objective: The students will be able to describe the complementary relationships between pollinators and the plants they pollinate. They will be able to identify and illustrate how flowers have developed to encourage pollination.

Common Core: CCSS.ELA-Literacy.RI.4.5; RL.K.1-3; RL.K.7; RL.K.10; W.4.2; W.4.4; SL.4.1; SL.4.3; SL.4.4; SL.4.5



Red Trumpet Flower

Next Generation Science Standards: Heredity: Inheritance and Variation of Traits: 3-LS3; Biological Evolution: Unity and Diversity: 3-LS4; Engineering and Design: 3-5-ETS1

Social Science Standards: SS.G.2.4

What You Will Need:

- Paper & coloring utensils
- Picky Pollinator worksheet (found on the following page)
- *Pollinator and plant example photos may be helpful

Directions:

1. Explain or review how pollinators carry pollen from one flower to another of the same species. Hummingbirds, honeybees, bats, butterflies and other pollinators have adapted to make sure they have enough food, and likewise, flowers have developed adaptations to attract specific pollinators.
 - ⇒ Pictured above is an example of the red trumpet flower. It's long narrow tube shape is perfect for a hovering hummingbird. But it would not attract a honey bee. Honey bees are attracted to sweet scents (the trumpet flower is relatively scentless) and they need somewhere to land while they collect the nectar of the flower.
2. Provide every student with a worksheet on the next page and coloring utensils, then pair the students up.
3. Each student should ask his or her partner the questions on the sheet regarding their favorite color, shape, snack, etc. and record the answers.
4. Using their partner's responses, have each student design and draw a flower that would effectively attract their partner.
5. Have the students present the flowers to the class, making sure they identify which specific features would attract their partner and why?

Lesson Extender:

- After the students have designed a flower to attract a pollinator, have the partners switch papers again. Now each student must draw a pollinator with adaptations to collect the food/nectar/reward from the flower. Write a short paragraph explaining how each feature works to accomplish its goal.

Picky Pollinators

1. Ask your partner the following questions and record his or her responses in the spaces provided.

• What is your favorite color? _____

• What is your favorite shape? _____

• What smells good to you? _____

• What is your favorite food? _____

2. In the space above, design and draw a flower that is adapted to your partner's preferences. Be creative when imagining the features that would appeal to your partner. Then, below, describe these features and how they suit your partner's personal preferences.

Bag Butterflies

Grade Level: K

Objective: Students will create butterflies while investigating the life cycle of a butterfly.

Common Core: CCSS.ELA-Literacy.RL.K.9; RL.K.10; RI.K.9; RI.K.10



Next Generation Science Standards: From Molecules to Organisms: Structures and Process: K-LS1-1; Earth and Human Activity: K-ESS3-1

What You Will Need:

- Colored construction paper, confetti, cellophane, or tissue paper
- Snack size Ziploc® bags
- Pipe cleaners

Directions:

1. Start by sharing, “The Very Hungry Caterpillar” and IAITC’s Pollinator Ag Mag with your students. Discuss the lifecycle of a butterfly before making the butterflies.
2. Your butterfly will be made by filling a Ziploc® bag with colored construction paper, confetti, cellophane, or tissue paper. If you are using paper or cellophane, cut or tear it into small pieces.
3. Place the paper, cellophane, or confetti into the Ziploc® bag. Leave about an inch of the Ziploc® unfilled. The Monarch is the Illinois state butterfly. Try using black and orange in your bag to represent a Monarch.
4. Seal the Ziploc® and fold the unfilled portion of the bag to the back of your butterfly.
5. Wrap a black pipe cleaner around the middle of your Ziploc® bag and twist it at the top. Shape the pipe cleaner to make it look like antennae.

Lesson Extender:

Make your own Pasta Butterfly Lifecycle!

1. Give each student a paper plate. Direct students to make a large ‘X’ on the plate to divide it into quarters.
2. Using a marker, have them write out the names of the four stages on the paper plate. “Egg” at the top left, “Larva” at the top right, “Pupae” at the bottom right, and “Adult” at the bottom left.
3. Draw arrows clockwise from “Egg” to “Larva” and from “Larva” to “Pupae” and so forth.
4. Put a dot of glue under “Egg” and drop a pinch of couscous on it for the egg.
5. Put a dot of glue next to “Larva” and place two rotini pasta on it for the two larva.
6. Put a dot of glue next to “Pupae” and place two of the shells on it for the pupae.
7. Put a dot of glue next to “Adult Butterfly” and place the bow-tie on it for the adult butterfly.

***Try making your own EDIBLE Butterfly Lifecycle! (Similar to the Pasta Butterfly Lifecycle)**

Eggs: small marshmallows

Caterpillars: gummy worms

Chrysalises: Tootsie Rolls

Butterflies: sociable crackers (just the butterfly ones!)

Apple Chain

Grade Level: K-3

Objective: This activity is designed to help students in sequencing and building models, and to help them understand the life cycle of an apple.

Common Core: CCSS.ELA-Literacy.RL.4.3; W.4.2; Math.Content.4.MD.2

Next Generation Science Standards: Animals, Plants & their Environment: K-LS1-1; Weather & Climate: 3-ESS2-1; Life Cycles & Traits: 3-LS1-1; 3-LS3-1

Social Science Standards: SS.IS.1-5.K-2; SS.IS.1-6.3-5; SS.CV.1.1; SS.CV.2.2; SS.CV.1-2.3; SS.CV.4.3; SS.G.1-2.K; SS.G.1.1; SS.G.1-2.2; SS.G.2-3.3; SS.EC.1.K; SS.EC.2.1; SS.EC.1.2; SS.EC.1.3; SS.H.1.K; SS.H.2-3.1; SS.H.2.2

What You Will Need:

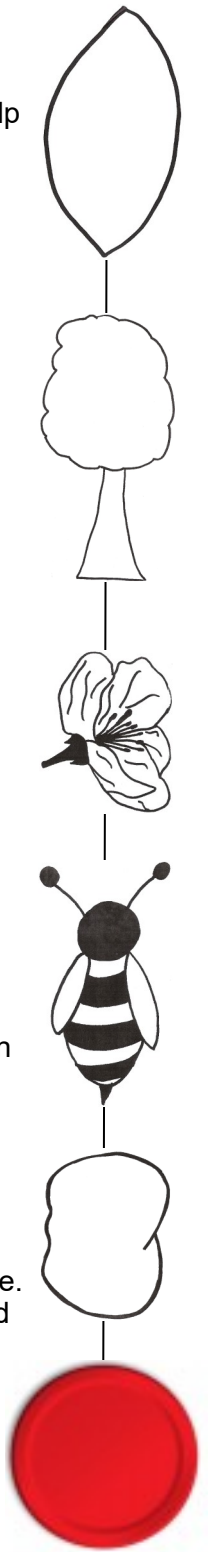
- 2 red paper plates per student
- Stapler & staples
- Yarn
- Colored construction paper
- Tape
- Hole punch
- Templates—www.agintheclassroom.org

Directions:

1. Print each template on construction paper: seed (brown), tree (green), blossom (pink), bee (yellow), little apple (green). Punch a hole on each side of the items you made with construction paper. The seed needs a hole on one side only.
2. Staple two red paper plates together around 2/3 of the edge. Leave the other 1/3 open.
3. Tape a piece of yarn to the inside of the stapled paper plates and extend the yarn out of the opening.
4. Add a stem to the red paper plates to make them look like an apple.
5. Tie the little green apple to the yarn coming out of the apple. Tie the bee to the little green apple. Tie the blossom to the bee. Tie the tree to the blossom. Tie the seed to the tree. These should all form a chain.
6. Tuck the green apple, bee, blossom, tree, and seed into the apple. Starting with the seed, slowly pull shapes out of the apple and tell the story of how apples grow.

Lesson Extenders:

- Have students research each step and write a short paragraph explaining what happens at each phase of the life cycle of an apple.
- Research how long each phase takes. Measure and adjust the string length to incorporate a scale for time.
- Read “Johnny Appleseed” and research his contribution to the history of apple orchards in the United States.
- Read “Apples to Oregon,” then research the Oregon Trail and how the movement of people and goods impacted the cultural and environmental characteristics of communities in the United States.



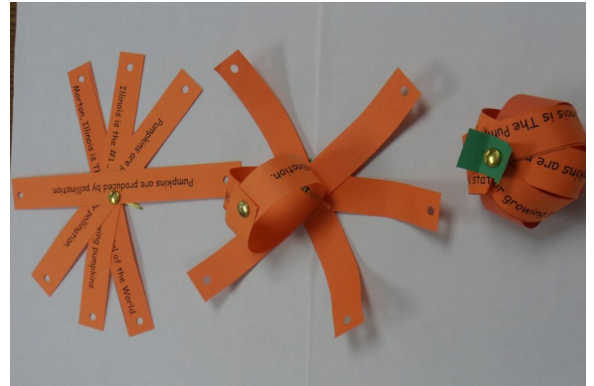
3D Pumpkin

Grade Level: 3

Objective: Upon completion of this activity, students will have a better understanding of the lifecycle of a pumpkin.

Common Core: CCSS.ELA-Literacy: RI.3.1; RI.3.9; W.3.2; W.3.7

Social Science Standards: SS.EC.1.3; SS.IS.4.3-5



What You Will Need:

- Orange construction paper
- Green construction paper
- Hole punch
- Brad fasteners
- Marker or pen
- IAITC Pumpkin Ag Mag

Directions:

1. Cut the orange paper lengthwise into 3/4 inch strips. Each student needs four strips.
2. Learn about pumpkins by exploring the IAITC Pumpkin Ag Mag individually or as a class.
3. Identify four pumpkin facts from the Ag Mag. Write one fact on each of the four strips of orange paper.
4. Cut a small square of green paper. This will be the pumpkin's vine.
5. Stack the strips of paper and hole punch both ends of the stack. Then punch a hole in the center of the strips as well as your green square.
6. Place a brad fastener through the center hole of the green square then the orange strips. Spread the fastener to keep it in place.
7. Grab a second fastener and bend each end of the paper strips down, sliding the fastener through the punched holes at both ends. When all eight ends are attached, spread the fastener inside your pumpkin.
8. Spread out the paper strips to form a spherical pumpkin!

Lesson Extender:

- On the four strips of paper, write three facts and one lie about pumpkins. After everyone has read the IAITC Pumpkin Ag Mag, see who can identify which are facts and which one is a lie.

Pumpkin Patch Pie

Grade Level: K-3

Objective: By completing this activity, students will have a better understanding of where their food comes from and good nutritional habits, as well as practice math through measuring.



Common Core: CCSS.ELA-Literacy.RI.3.1; RI.3.2; Measurement and Data.3.MD.2

Next Generation Science Standards: Structures and Properties of Matter: 2-PS1-1; 2-PS1-3

Social Science Standards: SS.G.1-2.K; SS.G.1.1; SS.G.1-3.2; SS.G.3.3; SS.G.1.4; SS.G.3.4; SS.H.1.K; SS.H.2-3.1; SS.H.2.2; SS.H.2.3; SS.H.1.4

What You Will Need:

- 1 gallon Ziploc® freezer bag
- 1 teaspoon ground cinnamon
- 1/2 teaspoon ground ginger
- 26 small cups
- 26 spoons
- 2 packages (4 serving size) instant vanilla pudding mix
- 1 can (15 ounces) solid-pack pumpkin
- 2 2/3 cups cold milk
- Scissors
- Graham cracker crumbs
- 1 can whipped topping

Directions:

1. Combine the milk and instant pudding in the Ziploc bag.
2. Remove the air from the bag and seal it.
3. Squeeze and knead with hands until blended for 1 minute.
4. Add the pumpkin, cinnamon, and ginger.
5. Remove the air and seal the bag.
6. Squeeze and knead with hands until blended for 2 minutes.
7. Place 1/2 tablespoon of graham cracker crumbs in the bottom of small cups.
8. Cut the corner of the gallon freezer bag and squeeze pie filling into cups.
9. Garnish with whipped topping.
10. Add a spoon. Serve and enjoy.
11. Discuss pumpkin production while students are eating.

Yield - 25 students and 1 teacher.

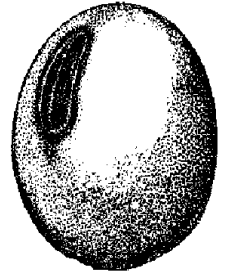
Ingredients can be divided by 4 or 5 for students to work in small groups.

Make sure to use math to get the correct batch!

Beanie Baby

Grade Level: K-6

Objective: Upon completion of this activity, students will have a better understanding of the plant germination process.



Common Core: CCSS.ELA-Literacy.RI.4.3; RI.4.4; RI.4.5; RF.4.3a; Math.Content.4.MD.A.2

Next Generation Science Standards: Structure & Properties of Matter: 5-PS1-4

Social Science Standards: SS.G.1-2.K; SS.G.1.1; SS.G.3.3; SS.G.3.4; SS.G.2-4.5; SS.G.2-4.6-8; SS.EC.1.K; SS.EC.1.3; SS.EC.2.1; SS.EC.1-2.5; SS.EC.1-3.6-8

What You Will Need:

- Jewelry size resealable bag
- Measuring spoons
- Hole punch
- Water
- Crystal Soil
- Soybeans
- Yarn

Directions:

1. Punch a hole, above the seal, in the top of your bag.
2. Place 1/4 teaspoon of Crystal Soil into the bag.
3. Add two soybeans to the bag.
4. Add one tablespoon of water.
5. Seal your bag firmly.
6. Insert the yarn to make a necklace.
7. Wear your Beanie Baby around your neck and under your shirt to keep it in a warm, dark place.
8. Check your Beanie Baby several times a day for germination and record the growth. Apply mathematics to ensure accurate measurements. This will help grow a healthy soybean.

Lesson Extenders:

- Turn this into an experiment. Change the variables (amount of light, type of soil medium, amount of water) and have students hypothesize the outcomes and keep a germination journal to record their conclusions.
- Research and have a class discussion about the uses of soybeans, where soybeans are grown and where they are exported. Discuss how soybeans are high in protein and are a global food source. Look at maps to determine why soybeans are grown in specific locations.

Crystal Soil/Soil Moist for Beanie Babies:

- Can purchase from gardening centers (Lowe's, Menards, etc.) or plant nurseries
- Look for "Soil Moist" or "Crystal Soil"
- Can also purchase from Flinn Scientific: <http://www.flinnsci.com/>
- Catalog #'s, FB0381 (yellow), FB0382 (blue), FB0383 (red), FB0384 (green), or FB1602 (clear)
- \$5.05 for 2.5oz



The Disappearing Packing Peanut

Grade Level: K-3

Objective: Students will learn about renewable and non-renewable resources, as well as building fine motor skills.

Common Core: CCSS.ELA-Literacy.W.3.1; W.3.7

Next Generation Science Standards: Matter and its Interactions: 2-PS1-1; 2-PS1-3; Engineering Design: K-2.ETS1-1; K-2-ETS1-2

Social Science Standards: SS.IS.4.3-5; SS.IS.7.3-5; SS.G.3.3; SS.EC.2.4



What You Will Need:

- Clear plastic cups (2 per group)
- Cornstarch packing peanuts (2-3 per group)
 - ⇒ Available at www.uline.com *Search “Cornstarch Peanuts”
- Styrofoam packing peanuts (2-3 per group)
- Water
- Lab notes (found on following pages)

Directions:

1. Provide each group of students with the materials needed. Do not inform students what each type of packing peanut is made from (i.e. styrofoam or cornstarch).
2. Students will conduct an experiment to find out which packing peanut is biodegradable. Experiment procedures are listed on the lab notes sheets provided.
3. Students will record their experiment notes on the lab notes sheets provided.

Lesson Extender:

- Use the cornstarch packing peanuts as an interest approach. Each student thinks of something different when they hear the word “agriculture.” Have your students build something related to agriculture by having them lick and stick them together. To make it more interesting, give your students some stipulations, such as:
 - ⇒ Time Limit—Give your students 10 minutes to construct their idea of agriculture.
 - ⇒ Height—You are looking for the tallest structure.
 - ⇒ Sturdiness—Structures should be free-standing. When time is up, have them let go and then measure the tallest structure that can stand on its own.

Complementary Lessons:

- Give students the title of an upcoming reading assignment or book. What does each student think of when they hear that title? What will the book be about? Have each student construct their idea.
- For young students learning numbers or the alphabet, give them a piece of paper with a number or letter on it. Have them “trace” the number or letter with corn packing peanuts by having them lick and stick them together.

The Disappearing Packing Peanut

1. Ask a question

Which of the two types of packing peanuts is biodegradable?

2. Do background research and make observations.

List the characteristic of each type of packing peanut on the sheet provided. Describe each type of peanut in detail.

Packing Peanut A	Packing Peanut B

The Disappearing Packing Peanut

3. Construct a hypothesis

4. Procedure

- Each group should receive 2 clear plastic cups and 2-3 of each type of packing peanut. Make your observations of each type of packing peanut and record your observations in the space provided.
- Next, add the same amount of water to each clear plastic cup. Place the 2 different types of packing peanuts in the cups of water, making sure to keep each type separate.
- Record the reaction of the packing peanuts to the water.

5. Experiment—observe closely and record data

Packing Peanut A	Packing Peanut B

The Disappearing Packing Peanut

6. Data analysis—organize and evaluate data

7. Conclusion

***What do you think is the main ingredient in the packing peanut that disappeared?**

Wheat Milling

Grade Level: 3-4

Objective: This lesson will introduce students to wheat as a plant and how that plant becomes food(s).



Common Core: CCSS.ELA-Literacy.RI.4.3; RI.4.4; RI.4.5; RF.4.3a; Math.6.SP

Next Generation Science Standards: Interdependent Relationships in Ecosystems: 3-LS4-3; 3-LS4-4; Structure, Function and Information Processing: 4-LS1-1

Social Science Standards:
SS.ED.3.2; SS.G.3.3; SS.H.2.3

What You Will Need:

- Wheat stalks
- Salt or pepper grinder

Directions:

1. Show students wheat stalks.
2. Go over the parts of the wheat stalk with the students 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.
3. Dissect the wheat using the following steps:
 - ⇒ Hand out stalks of wheat to the students.
 - ⇒ 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.
4. 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?
5. 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.
6. Talk about the uses of wheat flour to make pastas, breads, desserts, etc.

Lesson Extenders:

- Ask students to count how many kernels they removed from the head of their wheat plant. Record each number on the board. Have students find the mean, median, mode and range of the set of numbers.
- 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!

Garden in a Glove

Grade Level: 1-3

Objective: Students will understand seed germination by observing a variety of seeds growing and then observing after transplanting into soil.



Common Core: CCSS.ELA-Literacy.RI.2.5; RI.2.10; W.2.3

Next Generation Science Standards: Ecosystems: Interactions, Energy, and Dynamics 2-LS2-1; From Molecules to Organisms: Structures and Processes 3-LS1-1

What You Will Need:

- 5 types of seeds
- 3-4 seeds of each (examples: lettuce, carrot, cucumber, tomato, broccoli)
- Clear plastic glove
- 5 cotton balls
- Pencil
- Water
- Marker

Directions:

1. Begin by reading the IAITC Seasons Ag Mag. Specifically focus on the sections within the Ag Mag that describe the seeds the students will add to their garden. Take time to read about the other specialty crops in Illinois that are found in the Ag Mag.
2. Write your name on a clear plastic glove.
3. Wet five cotton balls and wring them out.
4. Place 3-4 seeds of the same type on each cotton ball (or dip the cotton balls in the seeds to pick them up). You may want to keep track of which seed is in which finger.
5. Put a 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.
6. Blow up the plastic glove and close it with a twist tie.
7. Tape the glove to a window, chalkboard, or wall. You may want to hang a clothesline under a chalk tray and use clothespins to hold the gloves on.
8. The seeds will germinate in 3 to 5 days. Keep a plant diary and look at the seeds under a microscope.
9. Transplant the seeds after about 1 1/2 to 2 weeks by cutting the tips of the fingers off the glove. Transplant the cotton ball and small plants into soil or sphagnum moss.
10. After growing to full size, plants can be made into a salad.

Say It With Soil

Grade Level: 3-4

Objective: Students will investigate how soil interconnects with all living things.

Common Core: CCSS.ELA-Literacy.RI.4.3; RI.4.4; RI.4.5; RF.4.3a; SL.4.1; W.4.2; W.4.6; W.4.7; W.4.8

Next Generation Science Standards: Interdependent Relationships in Ecosystems: 3-LS4-4; Life Cycles & Traits: 3-LS3-2; Earth's Systems: 5-ESS3-1

Social Science Standards: SS.IS.3.3-5; SS.CV.4.3; SS.H.2.3; SS.H.3.3; SS.H.3.4

The wealth of Illinois is in her soil and her strength lies in its intelligent development.

**Andrew Sloan Draper—
President, University of
Illinois, 1899**



What You Will Need:

- *Say It With Soil Quotes* handout found on the following pages

Directions:

1. Using the provided quotes, cut quotes into strips and distribute to students.
2. Students will read the soil quote and write a paragraph about the quote. Some/all of the following questions should be addressed:
 - ⇒ What does the quote mean to me?
 - ⇒ What did this quote mean to the author?
 - ⇒ Under what circumstances did the author write this quote?
 - ⇒ Has this quote withstood the passage of time? Why?
 - ⇒ Is this quote appropriate in today's world? Why?
3. Students can share their writing with the entire class.

Lesson Extender:

- Create a Bio Cube about one of the authors of the quotes you read. Go to http://www.readwritethink.org/files/resources/interactives/cube_creator/ and fill out your own Bio Cube. A few examples of authors to choose would be: George Washington, Franklin D. Roosevelt, Walt Whitman, etc.

Complementary Activities:

- Slice of Soil—Complete this demonstration using an apple to show how little soil we have to grow food and then discuss the importance of soil conservation.
 - ⇒ Find this activity on our website under Interest Approaches: <http://www.agintheclassroom.org/TeacherResources/InterestApproaches/slice%20of%20soil.pdf>

Say It With Soil Quotes

- ⇒ Soil, like faith, is the substance of things hoped for, the evidence of things not seen. It is the starting point for all living things that inhabit the earth. -Firman E. Bear; 1986
- ⇒ I know of no pursuit in which more real and important services can be rendered to any country than by improving its agriculture. -George Washington; July 20, 1794
- ⇒ The soil is the source of life, creativity, culture and real independence. -David Ben Gurion, Hazon VeDerek; 1950s
- ⇒ There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace. -Aldo Leopold; 1949
- ⇒ A nation that destroys its soil, destroys itself. -Franklin D. Roosevelt; 1937
- ⇒ A conservationist is one who is humbly aware that with each stroke he is writing his signature on the face of the land. -Aldo Leopold; 1949
- ⇒ When tillage begins, other arts follow. The farmers therefore are the founders of human civilization. -Daniel Webster; 1840
- ⇒ If in the human economy, a squash in the field is worth more than a bushel of soil, that does not mean that food is more valuable than soil; it means simply that we do not know how to value the soil. In its complexity and its potential longevity, the soil exceeds our comprehension; we do not know how to place a just market value on it, and we will never learn how. Its value is inestimable; we must value it, beyond whatever price we put on it, by respecting it. -Wendell Berry; 1995
- ⇒ We know more about the movement of celestial bodies than about the soil underfoot. -Leonardo DaVinci; 1500s
- ⇒ Essentially, all life depends upon the soil...There can be no life without soil and no soil without life: they have evolved together. -Charles E. Kellogg; 1938
- ⇒ ...the Latin name for man, homo, derived from humus, the stuff of life in the soil. -Dr. Daniel Hillel; late 1900s
- ⇒ I saw all the people hustling early in the morning to go into the factories and the stores and the office buildings, to do their job, to get their check. But ultimately it's not office buildings or jobs that give us our checks. It's the soil. The soil is what gives us the real income that supports us all. -Ed Begley; late 1900s
- ⇒ Plowed ground smells of earthworms and empires. -Justin Isherwood; 1990

Say It With Soil Quotes

- ⇒ Soil erosion is as old as agriculture. It began when the first heavy rain struck the first furrow turned by a crude implement of tillage in the hands of prehistoric man. It has been going on ever since, wherever man's culture of the earth has bared the soil to rain and wind.
-Hugh H. Bennett and W.C. Lowdermilk; 1930s
- ⇒ We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect. -Aldo Leopold; 1949
- ⇒ I bequeath myself to the dirt, to grow from the grass I love; If you want me again, look for me under your boot soles. -Walt Whitman; 1855
- ⇒ We are part of the earth and it is part of us...What befalls the earth befalls all the sons of the earth.
-Chief Seattle; 1854
- ⇒ Each soil has had its own history. Like a river, a mountain, a forest, or any natural thing, its present condition is due to the influences of many things and events of the past. -Charles Kellogg; 1956
- ⇒ Nature has endowed the earth with glorious wonders and vast resources that man may use for his own ends. Regardless of our tastes or our way of living, there are none that present more variations to tax our imagination than the soil, and certainly none so important to our ancestors, to ourselves, and to our children. -Charles Kellogg; 1956
- ⇒ Man and man's earth are unexhausted and undiscovered. Wake and listen! Verily, the earth shall yet be a source of recovery. Remain faithful to the earth, with the power of your virtue. Let your gift-giving love and your knowledge serve the meaning of the earth.
-Friedrich Nietzsche; 1870's –1880s
- ⇒ A cloak of loose, soft material, held to the earth's hard surface by gravity, is all that lies between life and lifelessness. -Wallace H. Fuller; 1975
- ⇒ I cannot conceive of the time when knowledge of soils will be complete. Our expectation is that our successors will build on what has been done, as we are building on the work of our predecessors.
-R.S. Smith; 1928
- ⇒ Soils are developed; they are not merely an accumulation of debris resulting from decay of rock and organic materials...In other words, a soil is an entity – an object in nature which has characteristics that distinguish it from all other objects in nature. -C.E. Millar & L.M. Turk; 1943
- ⇒ We spend our lives hurrying away from the real, as though it were deadly to us. "It must be somewhere up there on the horizon," we think. And all the time it is in the soil, right beneath our feet. -William Bryant Logan; 1996
- ⇒ The wealth of Illinois is in her soil and her strength lies in its intelligent development. -Draper; 1899

A Slice of Soil

Grade Level: K-8

Objective: After completing this activity, students will have a better understanding of our natural resources and how agriculture is important to their future.



Common Core: CCSS.ELA-Literacy.RI.4.7; RF.4.4; W.4.1; W.4.9; Math.Content.4.NF.3

Next Generation Science Standards: Interdependent Relationships in Ecosystems: 3-LS4-1; 3-LS4-4; 3-LS2-1; Inheritance and Variation of Traits: Life Cycles and Traits: 3-LS3-2; Energy: 4-PS3-4; ETS1.A

Social Science Standards: SS.EC.1.K; SS.EC.2.4; SS.G.3.2; SS.G.3.5; SS.G.4.6-8

What You Will Need:

- 1 apple
- Paring knife
- Cutting board

Directions:

Soil is one of our most important natural resources on the Earth's surface. Many living things depend on it for food. People do, too. Not all soil is good enough for plants to grow. Complete this activity to learn just how little soil we have to grow food.

1. Cut an apple into four equal parts. Three parts represent the oceans of the world. The fourth part represents the land area.
2. Cut the land section in half lengthwise. Now you have two $\frac{1}{8}$ pieces. One section represents land such as deserts, swamps, Antarctic, Arctic, and mountain regions. The other $\frac{1}{8}$ section represents land where man can live and may or may not be able to grow food.
3. Slice this $\frac{1}{8}$ section crosswise into four equal parts. Three of these $\frac{1}{32}$ sections represent the areas of the world that are too rocky, too wet, too hot, or where soils are too poor to grow food. Plus, we can't grow food on some land because cities and other man-made structures are built on it.
4. Carefully peel the last $\frac{1}{32}$ section. The peel on this small piece represents the amount of soil on which we have to grow food. This amount of soil will never get any bigger.

Extended Response:

Why is soil so important? Think about its impact on agriculture and the foods you eat. Be sure to include your own experiences along with information from the Soil Ag Mag to support your answer.

Don't Use It All Up

Grade Level: 3

Objective: Students will understand how we can reduce our use of water, reuse where possible, and understand the small amount of freshwater we actually have available on Earth.

Common Core: CCSS.ELA-Literacy.SL.3.1; W.3.2; Math.Content.3.MD.B.4

Next Generation Science Standards: Engineering Design: 3-5-ETS1-2



What You Will Need:

- Clear container with 4 cups of tinted water
- Marker or masking tape
- Small pieces of sponges (one per student)
- Second container for sponges
- Ruler

Directions:

1. Measure about 4 cups of tinted water into the container. The container represents Earth and the water represents all available freshwater.
2. Students can brainstorm ways we use water (drinking, cleaning, cooking, bathing, irrigation, recreation, etc.).
3. Using a marker or masking tape, mark the water level on the outside of the container. Each student should drop a sponge into the container as they state one demand they made on water today. Leave the sponges in the container. Ask if anyone notices a change in the water level.
4. After the students have dropped all the sponges in the container, remove them without squeezing. Set the sponges in the other container. Look at the first container and note the change in the water level. Mark the new water level on the outside of the container with a marker or masking tape. Measure the difference, in inches, between the two marks on the container.
5. Help students understand the demands on natural resources of large populations and how they have more effect than the demands of a small one. Students can answer the following questions:
 - What happens to the water level as we remove all the sponges?
 - What will happen if we keep using water at this rate?
 - What can we do about this situation?
 - How can we conserve or give water back to the environment?
6. Squeeze sponges back into the original container, one at a time, while each student names a way to reduce the amount of water. Notice the slight change in water level. Watch the water level rise as more students add water to the container.
7. When everyone has put the water from their sponge back into the container, note the water level and mark it using masking tape or a marker. Measure the distance between the first mark and the last mark. It will be lower than when the lesson began. Ask:
 - Why doesn't the water level return to the mark after the sponges are squeezed?
 - What are some resources that are renewable?

Lesson Extender:

Different countries around the world have different climates and resources available to them. Write a paragraph explaining how this activity can capture different regions around the world.

Hungry Planet!

Grade Level: 4-8

Objective: After completing this activity, students will have explored, compared and contrasted the nutritional habits of families all around the country. They will also be able to investigate how weather, landscape and soil types affect agriculture all around the world.

Common Core: CCSS.ELA-Literacy.RI.2.1-4.1; RI.2-6.7; RI.4.2; RI.4.3; RI.4.6; RI.4.7; RF.4.4; W.4.3; W.4.7; SL.4.2

Next Generation Science Standards: Life Cycles & Traits: 3-LS3-2; Weather & Climate: 3-ESS2-2

Social Science Standards: SS.IS.1-7.3-5; SS.IS.1-8.6-8; SS.CV.2-3.4; SS.CV.4.5; SS.CV.1-5.6-8; SS.G.3-4.5; SS.G.1-4.6-8; SS.EC.2.4; SS.EC.1-2.5; SS.EC.1-3.6-8; SS.EC.FL.3.4; SS.EC.FL.1.6-8

What You Will Need:

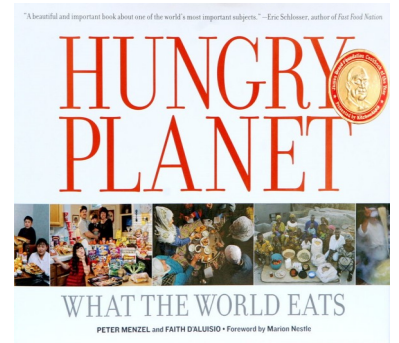
- Photocopies from pre-selected countries found in *Hungry Planet: What The World Eats*
- *The Thinking Triangle* found on following page

Directions:

1. Have students pick one of the countries in the book, [Hungry Planet: What The World Eats](#) by Peter Menzel & Faith D’Aluisio (any country but the United States). Give students a photocopy of the picture of their country from the book.
2. Students should investigate the country before writing a report.
3. Have students fill in the blanks of the thinking triangle on the following page, which will be included in their report.
4. Have students include agricultural aspects such as weather/climate, topography/landscape, soil types, etc. in their report. Each student should use these findings in their discussion of why the people of their assigned country can grow specific foods and why they can’t grow other types of food. Students should also discuss nutritional aspects. Does the food purchased fulfill all the nutritional needs of the people in that country?
5. After all students have completed their report, discuss how the United States differs from other countries. What kind of land and climate do we have? What types of food do we buy? How much money do American families spend on food?

Lesson Extender:

1. Have students compare and contrast different families from the book. They could compare types of food eaten, how much money was spent on food for the week, obesity rates, birth/death rates, etc. You could also have the students analyze the *Hungry Planet* photos by completing the “Thinking Triangle” on the following page.



The Thinking Triangle

Directions: Use the thinking triangle and record your thoughts about the image.

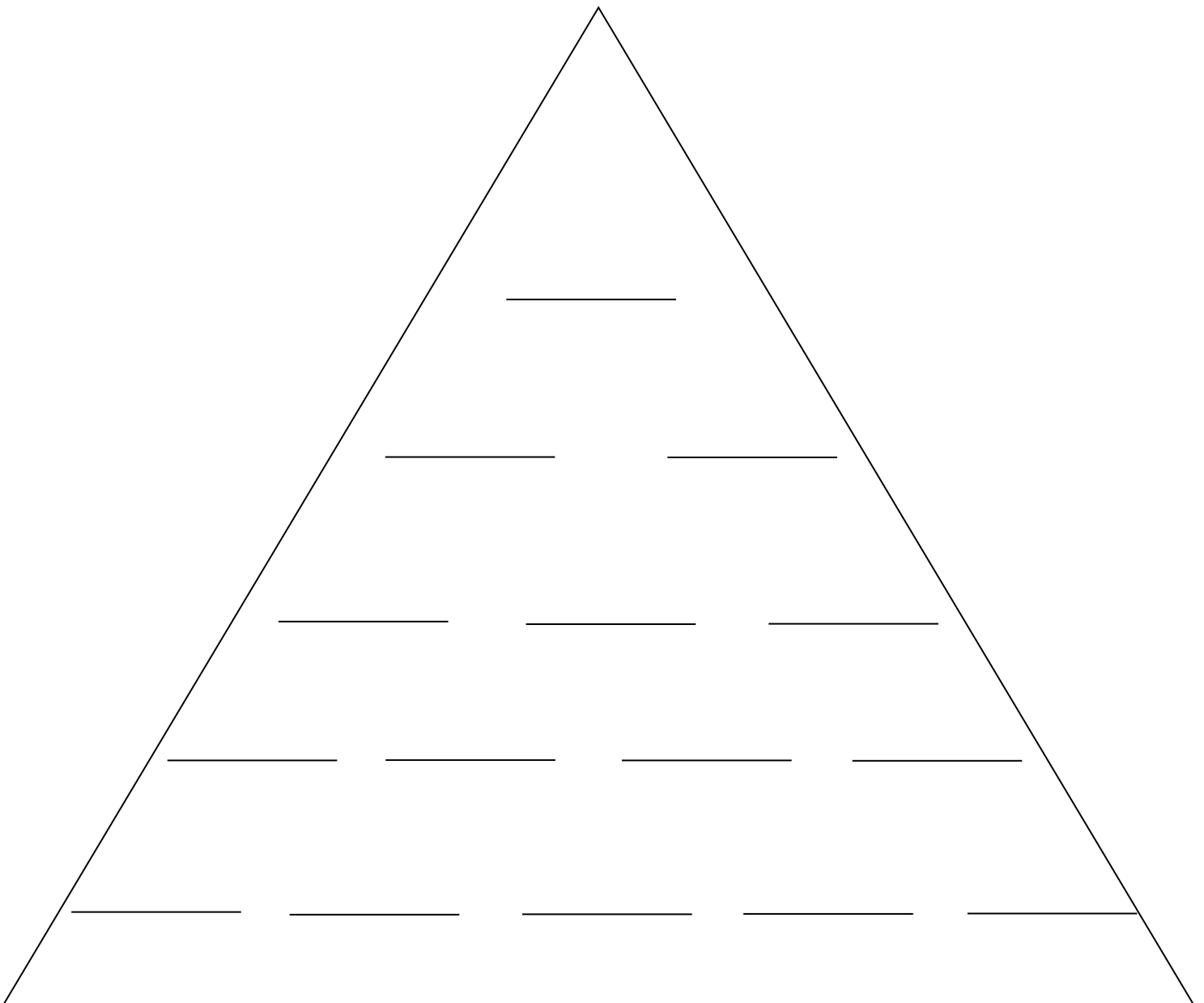
Row 1: (Who, What?) Who or what does this image represent? Describe it in one word.

Row 2: (When?) Think about the time period this image represents and describe it in two words.

Row 3: (Where?) Think about the place shown in the image and describe it in three words.

Row 4: (How?) Think of a how question that this image answers and write the answer in four words.

Row 5: (Why?) Think of a why question that this image answers and write the answer in five words.



National Milk Day!

Milk--The Original Farm To Table

Although the history is uncertain, we will celebrate National Milk Day on January 11, 2019, in commemoration of the first day milk was delivered in sterilized glass bottles for the first time.

We've come a long way from horse drawn wagons and reusable glass bottles to our paperboard ½ pint milk containers at school or even the plastic milk chugs!

Join us as we explore 'where your milk is from' and the farmers that help bring that milk from farm to table. We'll have websites and social media updates introducing you to Illinois Dairy Farmers, an inside look at milk processing and transportation, and a special look at the care farmers show to their dairy cows, especially in January in Illinois! Look for more information next school year, and even if we have a snow day, we want you to remember that the cows will be milked and there will still be fresh Illinois milk in your school cooler!



Where is My Milk From

Grade Level: 1-4

Objective: Students will understand how their milk travels from the cow to the grocery store or their school. They will also gain knowledge in navigating through the Illinois map.

Common Core: CCSS.ELA-Literacy.RI.2.1; RI.2.5; RI.3.5; RI.3.7; RI.4.7

Social Science Standards: SS.G.3.3; SS.EC.1.3; SS.G.1.4; SS.G.3.4

Every milk product contains a code on the packaging that details which dairy the product came from. Find the code (or use the sample code from the map on the next page) and enter it at www.whereismymilkfrom.com, to find out what dairy your milk came from!

Investigate the following from your code:

1. From what dairy did your milk come?
2. How many miles did your milk travel?
2. Are there other dairies closer to you than the one from which your milk came?
4. Investigate different brands of milk purchased in the same store or in the same town. What did you notice about the different brands of milk and the locations of dairies?
5. Why do you think some stores carry milk from multiple locations?
6. As you conduct your own research, notice that your milk can come from a variety of places in the state and outside the state. What parts of the state are typically represented with milk from dairies located outside the state?
7. If possible examine the code on UHT pasteurized milk. Why is it produced in other states?

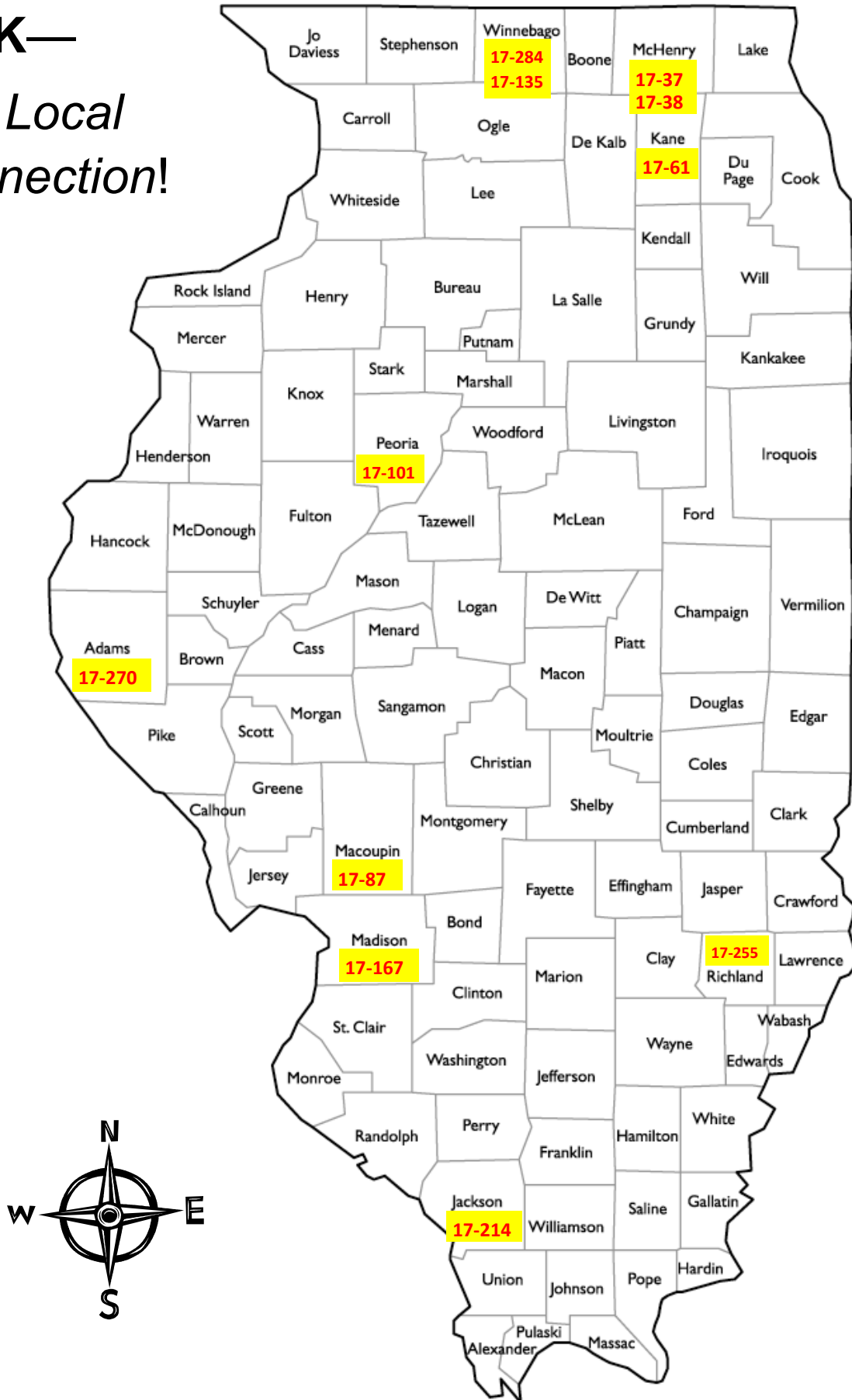
www.whereismymilkfrom.com

The screenshot shows the homepage of the website www.whereismymilkfrom.com. The browser's address bar shows the URL. The page has a blue header with the site logo and navigation links: "How it works", "Finding my code", "Local dairies", "Blog", and "Store". Below the header is a large, colorful illustration of a farm scene with a barn, a windmill, and a white milk truck on a dirt road. A search bar is prominently displayed in the center, with a "START" button and a "find it" button. A blue arrow points to the search bar. At the bottom of the page, there is a section titled "How it works" with the text "From the cow to your mouth. In five easy steps." and an advertisement for "sobastream" soda maker.

Where is My Milk From

MILK—

The Local Connection!



Livestock Timeline

Grade Level: 3-5

Objective: Students will understand the relationship between a series of historical events by investigating various types of livestock.



Common Core: CCSS.ELA-Literacy.RI.3.3; RI.3.5; RI.3.7; RI.3.10

Social Science Standards: SS.G.2.4; SS.H.1.4

What You Will Need:

- Beef, Pork, Poultry and Sheep “Cuts of Meat” posters
- Colored paper (white, pink, yellow, black)
- Rope
- Clothespins

Directions:

1. Using the Beef, Pork, Poultry and Sheep “Cuts of Meat” posters, your students will choose one historical fact that stands out to them.
2. Have students write the date and fact they chose on the colored paper provided.
3. Give each student a clothespin. Direct students to attach their written fact to the clothespin.
4. The entire class will work together to put their facts in chronological order. Direct students to clip their clothespin to the rope in order by date, based on the dates they chose from the timelines.
5. As a class, discuss the relationship between the historical events. Compare a few of the historical dates to what farming looks like today with beef, pork, poultry and sheep.

Lesson Extenders:

1. Have students determine the range of time between the various events. For example, have students determine how much time elapsed between the first event and last event represented on their timeline.
2. Have students complete more in depth research on the fact they selected.

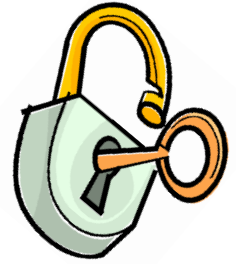
Career Escape

How Escape Boxes Work:

If you enjoy problem solving, collaboration and working under pressure, then our escape games will be your new favorite activity!

How exactly do escape games work? You and your group are given a mission and a set of clues to solve a series of puzzles. You may find a container that needs a code to open, or a lock that needs a key. If you search hard enough, you can figure out codes, find hidden items, and ultimately complete your mission!

Each game has a different agriculture theme that comes with a back story. We think you'll find that all our games are a blast!



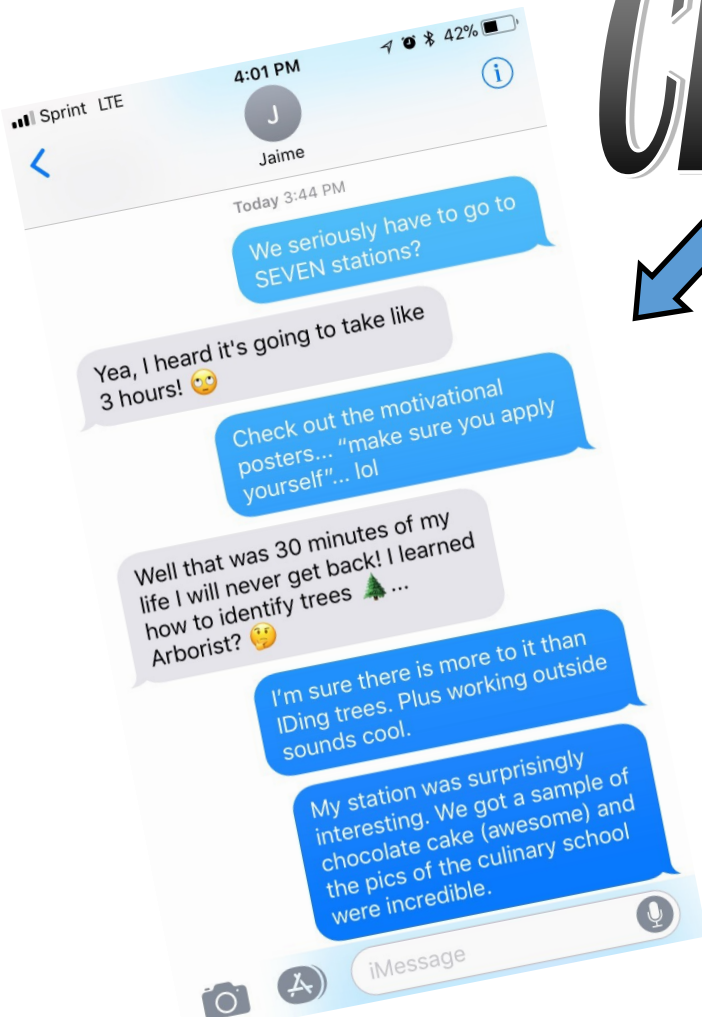
Tips!

Communicate, Check **EVERYTHING**, Listen, Think Creatively and most importantly HAVE FUN!

To see IATIC's Career Escape Box, follow the link below:

http://www.agintheclassroom.org/CountySupport/EscapeBoxResources/Careers_FULL%20LESSON.PDF

CLUES



Career Assessment
Holland's Interest Assessment

1. Do you enjoy working outdoors?
 Yes
 No
2. Do you prefer to work with:
 Things
 Alone
 Ideas
 People
 People and Ideas
3. Do you like to work with tools and machines?
 Yes
 No
4. Do you enjoy investigating what makes things the way they are?
 Yes
 No
5. Mark which of the following skills apply to you: (mark all that apply)
 Athletic ability
 Mathematical and scientific
 Artistic skills
 Leadership and speaking
 Numerical
 Social skills
6. Do you like to solve problems?
 Yes
 No
7. Do you have a good imagination?
 Yes
 No
8. Are you interested in human relationships?
 Yes
 No
9. Do you like to help others with problems?
 Yes
 No
10. Are you interested in economics and politics?
 Yes
 No
11. Do you like to try to convince people?
 Yes
 No
12. Do you enjoy working with words and numbers?
 Yes
 No
13. Do you carry out tasks in detail?
 Yes
 No
14. Do you follow through on others' instructions?
 Yes
 No
15. Do you enjoy creating original work?
 Yes
 No
16. Mark which of the following best describe you: (circle all that apply)
a) I like to do what people expect of me. I am truthful and practical. I like to save my money. I don't like to brag about myself.
b) I like to question and find out about things. I like to work by myself and do a good job, but I don't brag about how good I am doing.
c) I like to work by myself and come up with new ideas. I sometimes do things differently than others would. I am creative.
d) I like to help others. I am friendly, patient and understanding. People can trust me.
e) I am outgoing and popular. I think that everything will turn out for the best. I like to explore and I have lots of energy.
f) I like to do what people expect of me. I like to save my money. If something doesn't work the first time, I will try again until it does work.

Recommended Reading

Animals

- Amazing Grazing by Cris Peterson (ISBN-10: 1-56397-942-X)
...And Now Miguel by Joseph Krumboltz (ISBN-13: 978-0064401432)
Flip The Bird by Kym Brunner (ISBN: 13-9780544800854)
Gracias The Thanksgiving Turkey by Joy Cowley (ISBN-13: 978-0439769877)
Hatching Chicks in Room 6 by Caroline Arnold (ISBN-13: 9781580897358)
Heart of a Shepherd by Roseanne Parry (ISBN-13: 978-0375848032)
Little Joe by Sandra Neil Wallace (ISBN-13: 978-0375860973)
Pig 05049 by Christien Meindertsma (ISBN-13: 978-90-812413-1-1)
The Beef Princess of Practical County by Michelle Houts (ISBN-13: 978-0440422709)
War Horse by Michael Morpurgo (ISBN-13: 978-0439796644)

Apples

- Apples by Gail Gibbons (ISBN-10: 0-8234-1669-0)
Apples to Oregon by Deborah Hopkinson (ISBN-10: 0689847696)
Applesauce Day by Lisa Amstutz (ISBN-13: 9780807503928)
The Apple Orchard Riddle by Margaret McNamara and G. Brian Karas (ISBN-13: 978-0375847448)
The Fruits We Eat by Gail Gibbons (ISBN-13: 978082343204251795)

Biotechnology

- Enjoy Your Cells by Fran Balkwill (ISBN-13: 978-0879695842)
Gregor Mendel: The Friar Who Grew Peas by Cheryl Bardoe (ISBN-13: 978-0-8109-5475-5)

Corn

- Anna's Corn by Barbra Santucci (ISBN-13: 978-0802851192)
Corn by Gail Gibbons (ISBN-13: 978-0823422456)
Corn Belt Harvest by Raymond Bial (ISBN-10: 0-395-56234-1)

Dairy

- Clarabelle: Making Milk and So Much More by Cris Peterson (ISBN-10: 1-59078-310-7)
Click, Clack, Moo by Doreen Cronin & Betsy Lewin (ISBN-13: 978-1442433700)
Extra Cheese, Please! by Cris Peterson (ISBN-13: 978-1590782460)
The Cow in Patrick O'Shanahan's Kitchen by Diana Prichard & Heather Knopf (ISBN-13: 9781939775016)
From Milk to Cheese (Who Made My Lunch?) by Bridget Heos (ISBN-13: 9781681521442)

Earth Day/Energy

- Ethanol and Other New Fuels by Tea Benduhn (ISBN-13: 978-0836893595)
Generating Wind Power by Niki Walker (ISBN-10: 0836893646)
Michael Recycle by Ellie Bethel (ISBN-13: 978-1600102240)
Water: Sources, Use, Conservation by Nancy Carlson (ISBN: 9781926781105)

Recommended Reading

Nutrition

Hungry Planet: What The World Eats by Peter Menzel & Faith D'Aluisio (ISBN-13: 978-0984074426)
The Last Great Adventure of the PB&J Society by Janet Sumner Johnson (ISBN-13: 9781623706364)
Pizza for the Queen by Nancy F. Castaldo (ISBN-13: 978-0823418657)
What I Eat: Around the World in 80 Diets by Peter Menzel & Faith D'Aluisio (ISBN 978-0-9840744-0-2)
What the World Eats by Peter Menzel & Faith D'Aluisio (ISBN-13: 978-1582462462)

Pollinators

Beekeepers by Linda Oatman High (ISBN-13: 978-1563974861)
Explore Honey Bees! by Cindy Bloaum (ISBN-13: 978-1619302860)
Flight of the Honey Bee by Raymond Huber (ISBN-13: 978-0763667603)
How Bees Make Honey by Louise Spilsbury (ISBN-13: 978-1429655361)
The Beeman by Laurie Krebs (ISBN-13: 978-1846862601)
The Bee Tree by Patricia Polacco (ISBN-13: 978-0698116962)
The Honey Makers by Gail Gibbons (ISBN-13: 978-0688175313)
The Honeybee Man by Lela Nargi and Kyrsten Brooker (ISBN-13: 978-0375849800)
The Secret Life of Bees by Sue Monk Kidd (ISBN-13: 978-0142001745)
The Very Hungry Caterpillar by Eric Carle (ISBN-13: 978-0399226908)

Pumpkins

Giant Pumpkin Suite by Melanie Heuiser Hill (ISBN-13: 9780763691554)
How Many Seeds in a Pumpkin? by Margaret McNamara (ISBN13: 9780375940149)
Pumpkins by Gail Gibbons (ISBN-10: 0-8234-1636-4)
Too Many Pumpkins by Linda White (ISBN-10: 0-8234-1320-9)

Scientific Method

11 Experiments that Failed by Jenny Offill & Nancy Carpenter (ISBN-13: 978-0375847622)
Ellie, Engineer by Jackson Pearce (ISBN-13: 9781681195193)
George Washington Carver Ingenious Inventor by Nathan Olson (ISBN-13: 978-0736868846)
John Deere, That's Who! by Tracy Nelson Maurer and Tim Zeltner (ISBN-13: 9781627791298)
The Girl Who Thought in Pictures by Julia Finley Mosca (ISBN-13: 9781943147304)
The Inventors Secret by Suzanne Slade (ISBN-13: 9781580896672)

Seasons

An Apple Tree Through the Year by Claudia Schnieper (ISBN 13: 9780876144831)
Hey, Hey, Hay! by Christy Mihaly **Available August 2018*
Maple Syrup from the Sugarhouse by Laurie Lazzaro Knowlton (ISBN-13: 9780807579435)
National Geographic Readers: Seed to Plant by Kristin Baird Rattini (ISBN-13: 978-1426314704)
On the Same Day in March by Marilyn Singer (ISBN-13: 978-0064435284)
Pick a Pine Tree by Patricia Toht (ISBN-13: 9780763695712)
The Popcorn Astronauts by Deborah Ruddell (ISBN-13: 9781442465558)

Recommended Reading

Soil

- A Handful of Dirt by Raymond Bial (ISBN-13: 978-0802786982)
Diary of a Worm by Doreen Cronin (ISBN-13: 978-0060001506)
Investigate Rocks and Soil by Charlotte Guillain (ISBN-13: 978-1-4329-1411-0)
Seed Soil Sun by Cris Peterson (ISBN-13: 978-1-59078-713-7)
The Great American Dust Bowl by Don Brown (ISBN-13: 9781328740878)
Winnie Finn, Worm Farmer by Carol Brendler (ISBN-13: 9780374384401)

Soybean

- A Seed is the Start by Melissa Stewart (ISBN-13: 978-1426329777)
Auntie Yang's Great Soybean Picnic by Ginnie Lo (ISBN: 1600604420)
Full of Beans, Henry Ford Grows a Car by Peggy Thomas **Available February 2019*
Oh Say Can You Seed? by Bonnie Worth (ISBN-13: 9780375810954)
One Bean by Anne Rockwell (ISBN-13: 978-0802775726)
Pod to Plate by Julie Blunier (ISBN-13: 9780692769454)
The Super Soybean by Raymond Bial (ISBN-13: 978-0-8075-7549-9)

Specialty Crop

- Harvest Year by Cris Peterson (ISBN-10: 1-56397-571-8)
Popcorn Country by Cris Peterson **Coming in 2019*
Roll of Thunder, Hear My Cry by Mildred D. Taylor (ISBN-13: 978-0140384512)
The Scrambled States of America by Laurie Keller (ISBN-13: 978-0805068313)
The Vegetables We Eat by Gail Gibbons (ISBN-13: 9780823421534)
Tops & Bottoms by Janet Stevens (ISBN-13: 978-0152928513)
Who Grew My Soup? by Tom Darbyshire (ISBN-13: 978-1412745444)

Urban

- Anywhere Farm by Phyllis Root (ISBN-13: 9780763674991)
Country Kid, City Kid by Julie Cummins (ISBN-13: 978-0805064674)
The City Kid & The Suburb Kid by Deb Pilutti (ISBN-13: 978-1402740022)

Water

- Cloudette by Tom Lichtenheld (ISBN-13: 978-0375847448)
Did a Dinosaur Drink this Water? by Robert E. Wells (ISBN-13: 978-0807588406)
Water is Water by Miranda Paul (ISBN-13: 978-1596439849)
Water, Sources Use Conservation by Nancy Carlson (ISBN-13: 9781926781105)

Wheat

- Bread, Bread, Bread by Ann Morris (ISBN-13: 978-0-688-12275-1)
Bread Comes to Life by George Levenson (ISBN: 1-58246-114-7)
Farmer George Plants a Nation by Peggy Thomas (ISBN-13: 978-1590784600)
From Wheat to Pasta by Robert Egan (ISBN: 0-516-26069-3)
The Hungry Farmer by Michelle Wagner Nechaev (ISBN: 157471340X)
The Little Red Hen and the Ear of Wheat by Mary Finch (ISBN: 1902283341)
The Thing About Luck by Cynthia Kadohata (ISBN-13: 9781416918820)

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