



# Reading Colors Your World!

## Summer 2021

An iREAD summer reading companion from





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Social  
Studies



Literacy

# APPLE PIE JOURNEY

## Grade Level

3-6

## Length of Lesson

50-60 minutes

## Objective

After completing this activity, students will have a better understanding of how and where foods are grown and produced around the world.

## Materials Needed

- Copy of [How to Make an Apple Pie and See the World](#) book by Marjorie Priceman
- Copies of student worksheets
- Crayons or colored pencils
- Individual World Maps (optional)

## Standards

### 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

### ISSS

SS.G.1.2; SS.G.1.K-3; SS.G.3.3; SS.G.4.5; SS.G.1.6-8

## Lesson Summary

This lesson is designed to help students recognize and better appreciate that the ingredients from their favorite foods come from agriculture systems across the world.

## Suggested Sequence of Events:

1. Read through the [AITC Apple Ag Mag](#) to learn more about trees. Interactive online versions can be found on our website.
2. Complete the activity by following these procedures:
  - Read *How to Make an Apple Pie and See the World*.
  - Ask your students if they have ever heard about any of the countries the main character visited. Ask them if they knew that other countries have farmers who produce food just like the U.S. does.
  - Pass out the student worksheet and explain that you're going to read the story to them again, but this time they will have a reading/listening purpose.
  - Pass out individual world maps if you have them. If individual world maps are not available, pull up a world map to project so all students can see.
  - Read through the directions on the student worksheets.
  - Read the story again, this time stopping to make sure students can identify the locations of the countries visited.
  - Have students ensure they followed all the directions on the worksheet.
3. Whole class discussion and reflection of activity.



# TEACHER RESOURCES

## Extension Ideas:

- Learn about the history of apple pies. Where were they first made?
- Research what variety of apple is best for baking. Are there different varieties that are better for specific uses?
- Have students re-write the story using a different recipe like a cheeseburger or banana split.
  - Once they're done with their story, have them get with a partner and track the voyage on a world map just like in this activity.
- Choose one ingredient from the story and have your students do a little more research to create a concept map. What countries farm this commodity? What farming techniques are used? What recipes around the world use this ingredient?
- Turn this activity into a stations activity to get your students up and moving. Give each station some information about the country being visited in the story.
- Have students identify the latitude and longitude of the places the main character visited.
- Learn how to say the names of the commodities in the languages from the countries visited in the story.
- Have students do a gallery walk with these [images](#) of what kids around the world eat for lunch in a week, available at <https://time.com/what-kids-eat-around-the-world-in-one-week/>.
- Watch this school lunches around the world [video](#), available at <https://www.youtube.com/watch?v=Po0O9tRXCyA>.
- Use this [interactive map](#) from National Geographic to show students the different climate regions around the world and how those impact the food we eat. Map available at [mapmaker.nationalgeographic.org](http://mapmaker.nationalgeographic.org).
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Ag Literacy Coordinator for free classroom sets of our Ag Mags!



# APPLE PIE JOURNEY

## STUDENT WORKSHEET

**Directions: Complete the steps below using your blank world map!**

1. Turn your map so that it is facing the correct direction. Then, draw a compass on the bottom, right side of the map. Make sure to label your compass with North, South, East and West.
2. As your teacher reads the story, locate the countries the main character visits and color in the country.
3. Label the countries. Make sure to spell their names correctly!
4. Draw the path of the route our main character takes.
5. Answer the questions below:

What countries did our main character visit?

Using your compass skills, navigate us through the route the main character took in the story.

The ingredients we use to make food are products that come from original sources. Match the ingredient our main character needed with its original source.

Sugar

Eggs

Apples

Cinnamon

Salt

Butter

Flour

Wheat

Kurundu tree

Cow

Seawater

Chicken

Sugar cane

Orchard





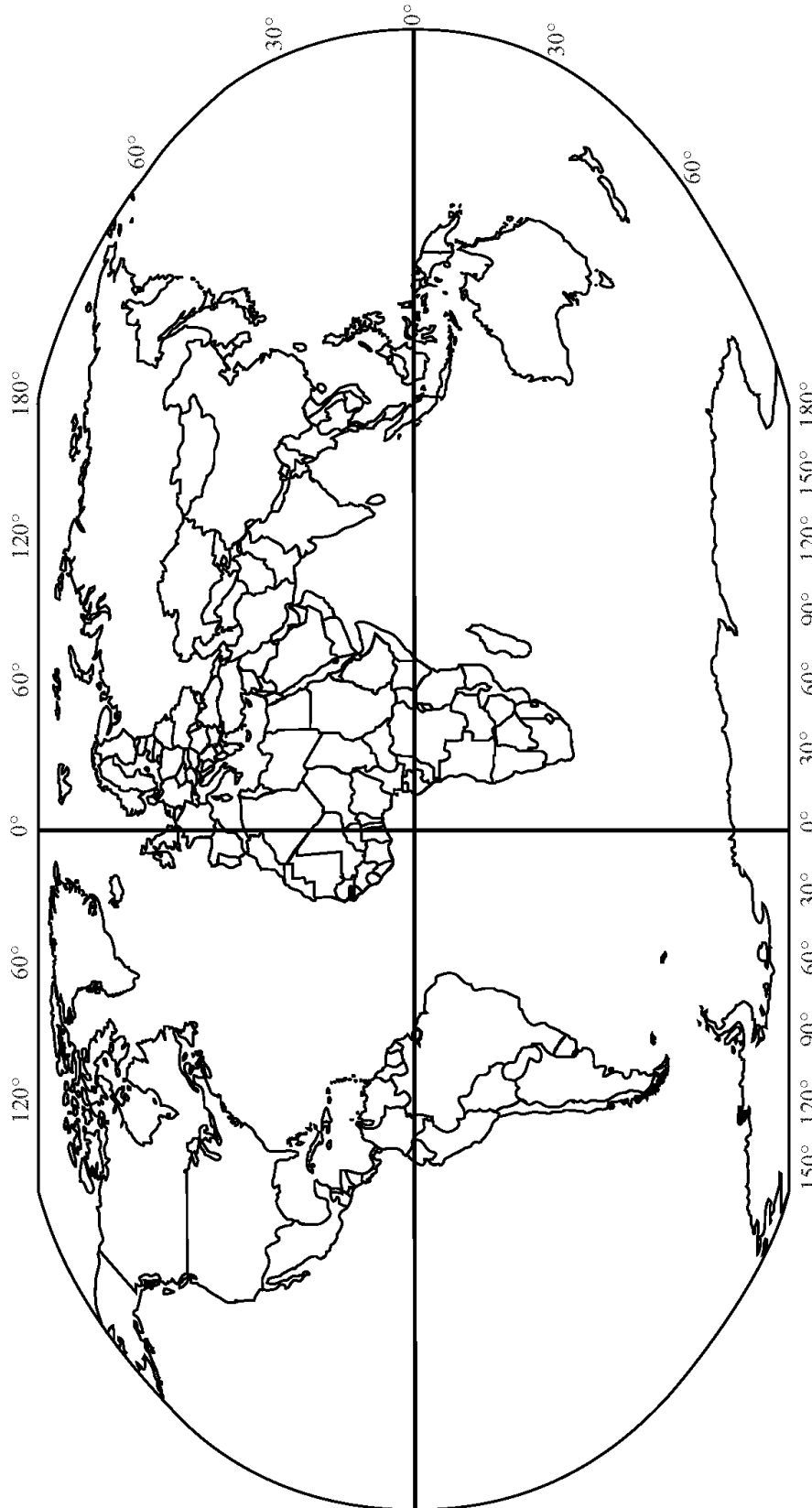
Social  
Studies



Literacy

# APPLE PIE JOURNEY

## STUDENT WORKSHEET





# 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.



# TEACHER RESOURCES

## Background Information:

- Ode poems were originally written in Ancient Greece and were meant to be performed publicly. Later, English romantic poets used this form to express emotions using rich, descriptive language. In the present day, the term “ode” is used to describe an outpouring of praise for something. Modern odes have evolved over time to reflect many different styles and forms. There are many online resources to learn more about odes and read examples.
- Chilean poet Pablo Nerudo wrote a total of 225 odes, all of them about ordinary, everyday objects. They serve as a great example for students of how we can write poems about *anything!* Some of these odes were also about food, including tomatoes, corn, and artichokes. All are available at various places online and would serve as excellent resources for this lesson.

## Extension Ideas:

- Incorporate this lesson into a larger poetry unit and/or study of poetic elements.
- Have students who chose the same vegetable compare their poems.
- Have students research other poetic forms and try to re-write one of their poems using this new form.
- Have students create other poems using their choice of any of our [AITC Ag Mag](#) topics.
- Invite a specialty crop farmer who grows vegetables into your classroom to talk about pig farming.
- Create a “Poetry Garden” bulletin board in your classroom to display students’ poetry.
- Incorporate student poems into your school garden project. Poems can be laminated and attached to stakes and placed in the garden near plantings of each vegetable.
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Ag Literacy Coordinator for free classroom sets of our Ag Mags!

## If students need some inspiration, share these examples with them:

- *Acrostic Poem: the first letter of each line is arranged vertically to spell a word, usually the topic of the poem.*

### 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.

# TEACHER RESOURCES

- *Autobiographical Poem: usually written from the point of view of the author, but this version asks students to pretend they are the vegetable.*

*Structure of the poem:*

- Line 1: \_\_\_ Your name  
Line 2: \_\_, \_\_, \_\_ 3 personal characteristics or physical traits  
Line 3: Brother or sister of \_\_\_ or son/daughter of \_\_\_  
Line 4: Who loves \_\_, \_\_, and \_\_ 3 people, things, ideas  
Line 5: Who feels \_\_\_ about \_\_\_ 1 emotion about 1 thing  
Line 6: Who needs \_\_, \_\_, and \_\_ 3 things you need  
Line 7: Who gives \_\_, \_\_, and \_\_ 3 objects you share  
Line 8: Who fears \_\_, \_\_, and \_\_ 3 items  
Line 9: Who'd like to see, \_\_ 1 place, or person  
Line 10: Who dreams of \_\_ 1 item or idea  
Line 11: A plant of \_\_\_\_\_ (location, etc.)  
Line 12: Nickname, or repeat your name from Line 1

*Example:*

Green bean  
Long, skinny, very green  
Cousin of the less beloved lima bean  
Who loves warm soil, full sun, and summer rain  
Who feels hatred about caterpillars  
Who needs long sunny days, no frost, and busy pollinators  
Who gives fresh summer flavor to eaters, nitrogen to the soil, and shade to the earthworms  
Who fears pesky weeds, erratic hoes, and unexpected cold snaps  
Who'd like to see George Washington Carver  
Who dreams of symbiotic relationships with soil bacteria  
A plant of gardens around the world  
Green bean

- *Color Poem: this form is usually used to teach metaphor by using a color as the subject of the poem, but in this version students will have their vegetable serve as the subject.*

*Structure of the poem:*

\_\_\_\_\_ looks like \_\_\_\_\_.  
\_\_\_\_\_ sounds like \_\_\_\_\_.  
\_\_\_\_\_ smells like \_\_\_\_\_.  
\_\_\_\_\_ tastes like \_\_\_\_\_.  
\_\_\_\_\_ feels like \_\_\_\_\_.



# TEACHER RESOURCES

## Example:

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.

- *Concrete/Shape Poem: words are arranged on the page so that they form a shape, sometimes the subject of the poem. This can be accomplished either on the computer or handwritten on a sheet of paper, depending on the students' age and ability.*

## Example:

Corn:  
cultivated  
for centuries  
by Native Nations,  
grown around the  
world to feed all the  
people and animals of  
the Earth. Corn is also  
used in thousands of things  
from starch to sweetener to  
ethanol. There are three types  
of corn: field, sweet, and popcorn.  
Each ear of corn allows the corn to  
hear for miles and miles. No, I am  
only kidding, the ears just hold the kernels, equal  
to about 800 arranged in 16 rows. Pollinated not by  
insects, but by the wind, knocking the pollen down to land on  
the waving silks: one for every. single. kernel. Here in IL corn is a pretty  
big deal. Farmers plant about 12 million acres every year, which means they  
then harvest about one hundred and twelve billion pounds of corn from the  
fields each fall. That's a lot of corn! Knuckleheads might say that this corn is  
boring. But they're wrong! Corn fields are full of life, of technology housed  
in the seeds, in the tractors, in the combines, and in every aspect of the  
farm. Corn is a part of our lives every day, whether we realize it or not.  
What can possibly be boring about THAT? The history of our country  
is tied up in this simple grain. Corn has cultivated civilizations and  
it's a big part of ours. The world needs more poems about corn.



# A WINDY LIFT

## Grade Level

2-6

## Length of Lesson

60 minutes

## Objective

By the end of this lesson, students will have a better understanding of force, air friction, and mechanical engineering.

## Materials Needed

- Copy of [\*The Boy Who Harnessed the Wind\*](#) by William Kamkwamba and Bryan Mealer
- Scissors
- Hole Punches
- Small binder clips
- String
- Pipe cleaner-cut into thirds (3 per student)
- Pipe cleaner-cut into halves (1 per student)
- Pencils (1 per student)
- 16oz disposable cup
- 6oz disposable cup
- Crayons, colored pencils, markers
- Copies of student worksheet

## Standards

### NGSS

K-PS2-1; K-PS2-2; 3-PS2-1; 3-PS2-2; 5-PS1; MS-PS1

## Lesson Summary

This lesson is a fun, hands-on activity designed to help students understand motion and what causes objects to move. This is also a great lesson to introduce renewable energy and how farmers around the world rely on various machinery and energy sources to grow their food and raise their animals.

## Suggested Sequence of Events:

1. **Set Up:** Cut the pipe cleaners into thirds and halves so that each student has three (3) thirds and one (1) half. For younger students or to save time, hole punch the small, 6 oz disposable cup so that there are two holes on opposite sides of the cup. Finally, print enough copies of the student worksheet so that each student has one. It is better to print on cardstock, but normal printing paper will work.
2. Read through the [IAITC Renewable Energy Ag Mag](#) to learn more about renewable energies! Interactive online versions can be found on our website.
3. Complete the activity following the procedures:
  - Read *The Boy Who Harnessed the Wind* aloud to your class. You can use our suggested pre-activity questions on the teacher resources page.
  - Give each student their own windmill blade template and have them decorate it. Then have them follow the directions to cut it out.
  - Carefully push the pencil through the center hole and then bend each corner backwards onto the pencil. Don't crease the paper during this stage! It is easier to have the pencil sharpened and to put the pointed side of the pencil through the holes.
  - Carefully push the blades to the other end of pencil. The pencil will be slightly larger than the holes, so be careful not to rip the paper. You now have a pinwheel!
  - Place the 16 oz cup upside down and lay the pencil pinwheel on top. Use the three (3), 1/3 pieces of pipe cleaner and create an arch shape with them. Push each arch over the pencil to hold the pinwheel in place. Now you have a windmill!
  - Hole punch two holes in your small cup, one on either side. Slide the one (1), 1/2 piece pipe cleaner through the holes, forming a small bucket handle. Bend the sides upward to hold the handle in place.
  - Tie one end of your string around the pencil, and the other end around the bucket handle.
  - Attach the binder clip to the end of the sharpened end of the pencil to keep the string in place.
  - Now blow on the blades and lift the small cup!
4. Whole class discussion and reflection of activity.



# TEACHER RESOURCES

## Pre-Activity Discussion Questions:

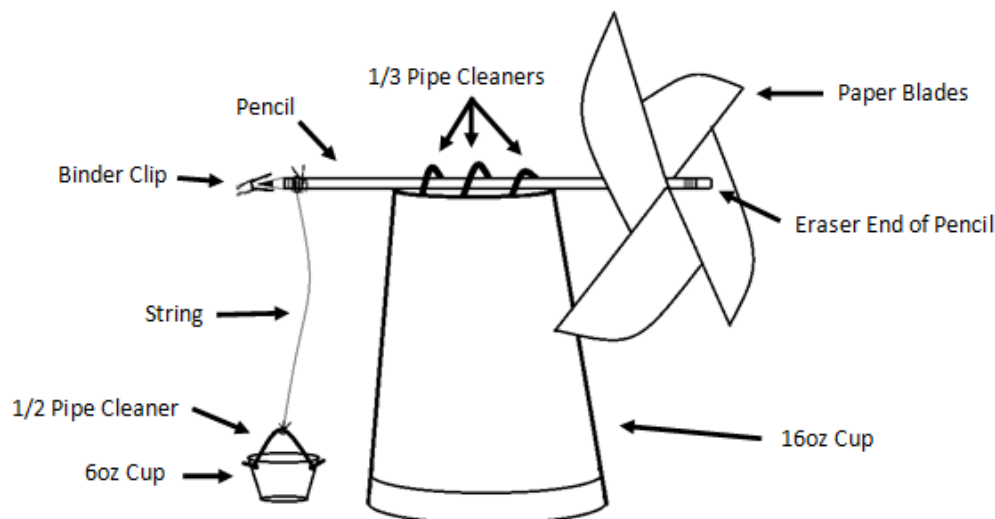
- Ask students what caused the mill to start moving?
- Why did the wind cause the blades to start moving?
- What was the purpose of building the windmill?

## Post-Activity Discussion Questions:

- What was the maximum number of pennies your windmill lifted?
- How much time did it take to lift your bucket with no pennies? What about with eight pennies? Why would there be a difference?
- What improvements could be made to help your windmill be stronger or lift the bucket faster?
- What type of motion caused the windmill to start moving? Was it balanced or unbalanced?

## Extension Ideas:

- Have students add a penny to their small cups and see if their windmill will lift it. Continue adding pennies and see whose windmill will lift the most! If you don't have pennies, use popcorn kernels, dry beans, etc.
- Use a timer to record how long it takes for the bucket to be lifted with a different amount of pennies. Does it take longer to lift no pennies, four pennies, or eight pennies?
- Use the pennies to learn about the life of Abraham Lincoln.
- Use a fan to move the blades. Does this make a difference in the amount of weight the windmill can lift? Does it make a difference on how quickly the bucket is lifted?
- For higher level students, have them work backwards and draw a blueprint of the windmill before construction.
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!



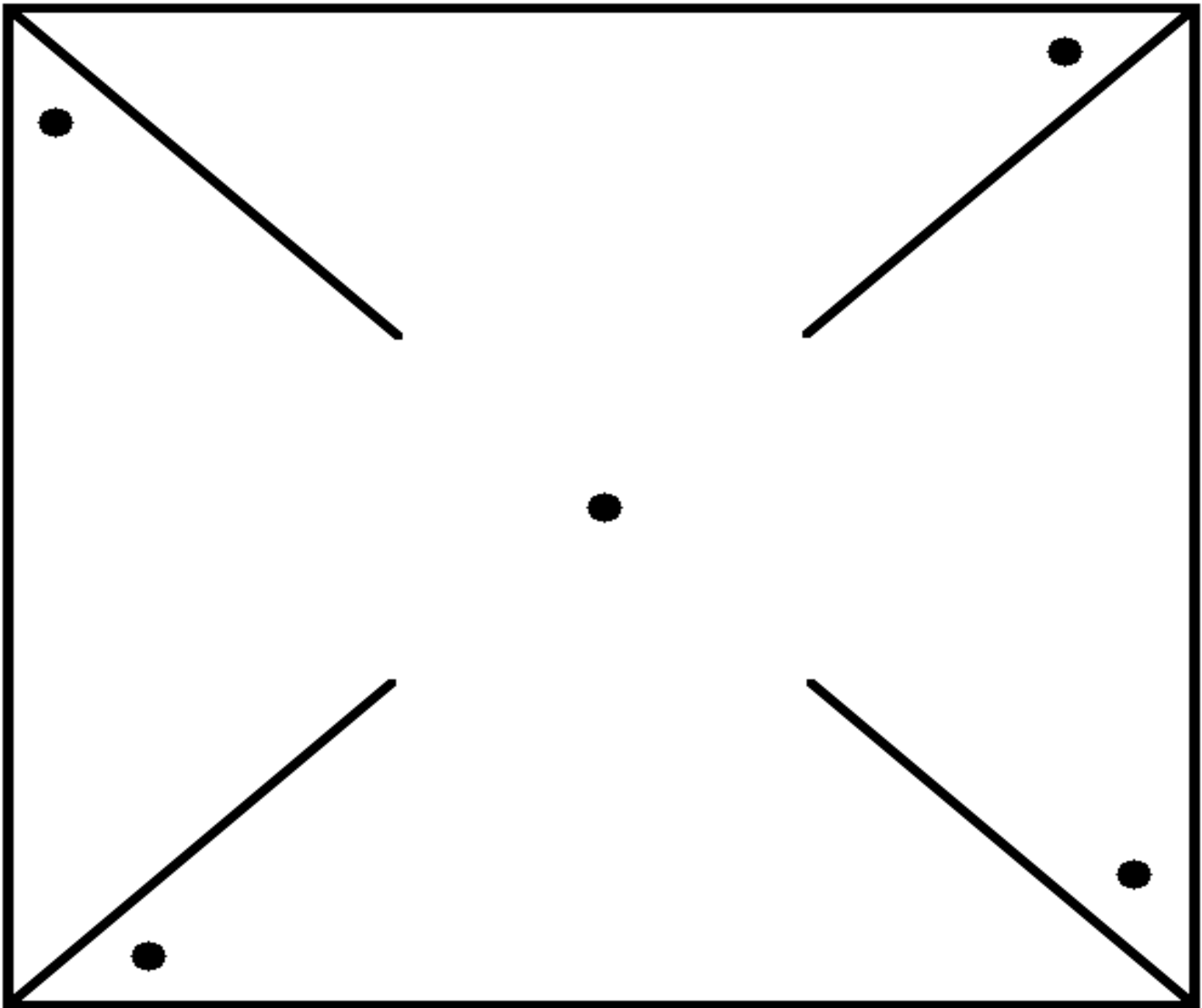


# A WINDY LIFT

## STUDENT WORKSHEET

### Directions:

1. Decorate!
2. Cut on all **solid** lines.
3. Use the hole punch to make a hole on all of the black dots.
4. Wait for your teacher for further instructions.





# LINCOLN'S PATENT

## Grade Level

4-8

## Length of Lesson

45-60 minutes

## Objective

By the end of this lesson, students will learn more about how to use primary sources to research our past.

## Materials Needed

- Internet access
- Copies of student worksheets

## Standards

IL Learning Standards  
for Social Science

SS.H.2.4-5

SS.H.3.6-8.LC

SS.H.3.6-8.MdC

## Lesson Summary

This lesson is designed to help students learn more about Lincoln and his patent for a device to lift boats higher in the water. Students will also learn about the importance of primary sources in researching our past.

## Suggested Sequence of Events:

1. Prior to the Lesson: Students should know basic facts about Abraham Lincoln's life, and they should be familiar with what a patent is prior to starting this lesson. See the Teacher Resources page in this lesson for additional ideas and resources related to this background knowledge.
2. Complete the activity following the procedures:
  - Read through the introduction on the Teacher Resources page and show the video.
  - Once students are familiar with Lincoln's patent, pass out the student worksheets to allow students to analyze the letter sent from the Patent Office to Lincoln regarding his patent.
  - Give students time to complete the analysis questions.
  - STEM Extension: If time allows, ask students to rethink Lincoln's invention using technology we have available today. How could they rethink and repurpose inventions since Lincoln's time to come up with a new and improved version of his patented invention?
    - Pass out the "Rethinking Lincoln's Patent" worksheet and ask students to draw and explain their ideas on the page.
3. Whole class discussion and reflection: Ask students to share what they learned through closely reading this primary source. How are primary sources useful to those studying our history?



# TEACHER RESOURCES

## Introduction:

Abraham Lincoln, the 16th President of the United States, is the only U.S. President with a patent. Lincoln's patent was for a flotation system used to lift longboats stuck in sandbars. There is no evidence that Lincoln's patent was ever actually used on a boat. Let's watch this short video from the National Museum of American History to learn more about Lincoln's invention and see a model that Lincoln had made to earn his patent: <https://vimeo.com/152478552> (2:22 long)

## Background Information Resources:

- According to the United States Patents and Trademark Office (USPTO), a patent is, "a property right granted by the government to an inventor for a new, useful, and nonobvious invention." The USPTO has an excellent student website with patent-related resources: <https://www.uspto.gov/kids/>
- The USPTO also has a great video about how the patent application process works, and the importance of patents to innovation in our world, which can be found here: <https://youtu.be/3T-NBDGovno>
- Smithsonian Magazine has an excellent article on Lincoln's patent that would provide additional background knowledge, available here: <https://www.smithsonianmag.com/history/abraham-lincoln-only-president-have-patent-131184751/#:~:text=Lincoln's%20patent%2C%20No.,an%20Illinois%20congressman%20in%20Washington.>

## Extension Ideas:

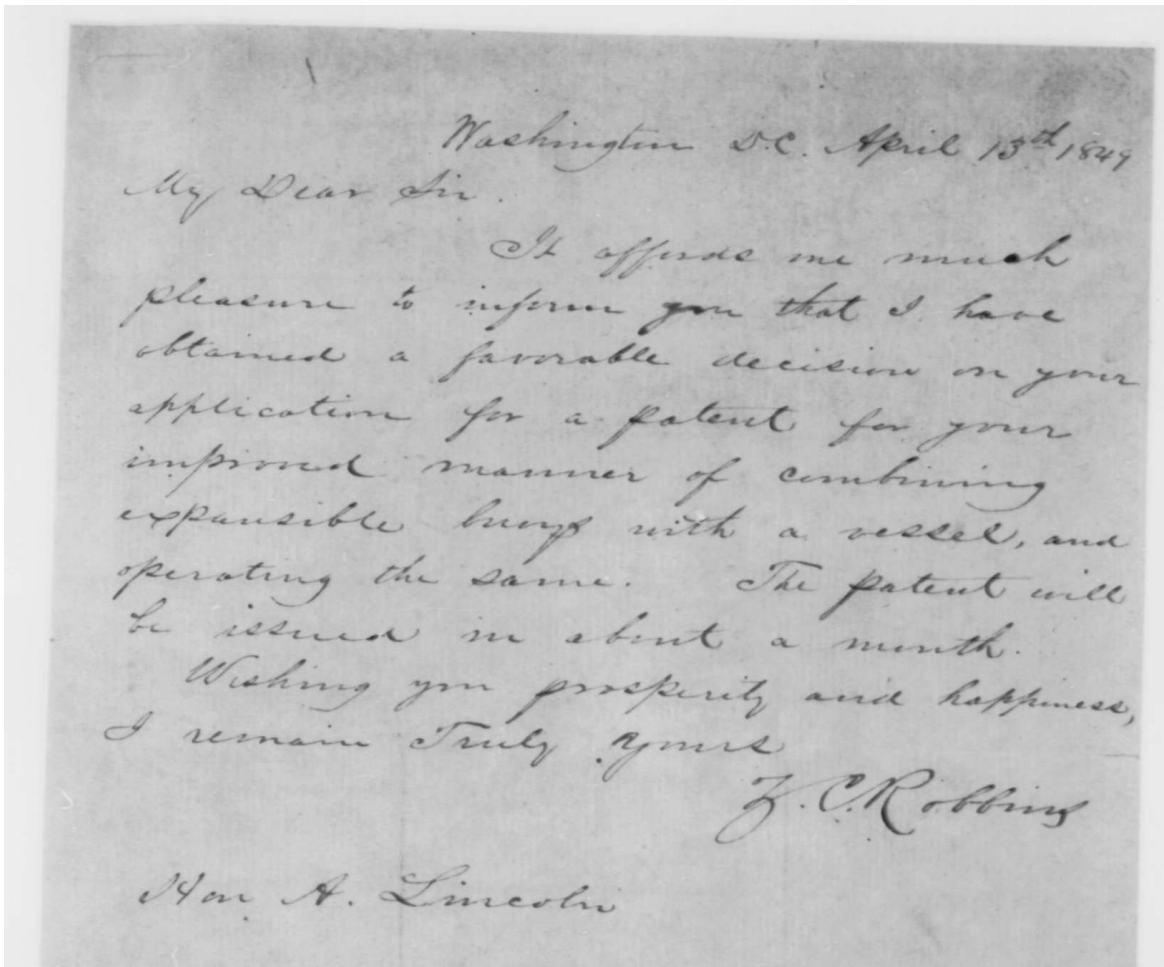
- Have students take on the perspective of Abraham Lincoln and write a return letter to Zenus Robbins. What questions or comments would Lincoln have after reading the letter?
- Have students infer the story surrounding the letter and create a non-fictional comic strip.
- Although Lincoln was never a farmer himself, he understood the importance of agriculture to our growing nation. His patent for a flotation device to assist longboats stuck on sandbars was created because of the importance of transporting agricultural goods along Illinois rivers. There are many good books about Lincoln. We especially like *The Superlative A. Lincoln*, by Eileen R. Meyer, which has a great poem about Lincoln being the "most distracted farmer." We also love *Lincoln Clears a Path: Abraham Lincoln's Agricultural Legacy*, by Peggy Thomas.
- Visit the United States Department of Agriculture (USDA) website to learn more about Abraham Lincoln's agricultural legacy. One of his most important accomplishments was forming the USDA. <https://www.nal.usda.gov/topics/lincolns-agricultural-legacy>
- River transportation is still an important issue in Illinois. Today, our rivers have locks and dams to allow large barges to transport goods up and down our rivers. Have students learn more about these vital transportation systems and how they impact our lives in unseen ways.
  - Compare Lincoln's patent to machinery and infrastructure, like locks and dams, that we use today.
  - Have students share why riverways are an important part of agriculture.
- Our [Illinois History Ag Mag](#) would pair well with this lesson. An online interactive version is available on our [website](#).
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!



# LINCOLN'S PATENT

## STUDENT WORKSHEET

Below is an image of the original letter sent from Zenas Robbins to Abraham Lincoln regarding Lincoln's patent application. The letter is a *primary source*. A primary source is an artifact of some sort that was created by a person with immediate, first-hand knowledge of a topic or event. Historians use primary sources to better understand our history through the eyes of the people who actually lived it.



Here is a transcript of the same letter:

Washington D.C. April 13th 1849

My Dear Sir.

*It affords me much pleasure to inform you that I have obtained a favorable decision on your application for a patent for your improved manner of combining expansible buoys with a vessel, and operating the same. The patent will be issued in about a month.*

*Wishing you prosperity and happiness, I remain truly yours.*

Z.C. Robbins

Hon A. Lincoln



# LINCOLN ' S PATENT

## STUDENT WORKSHEET

### Analyzing a Primary Source: Hand Written Letter

You are going to complete a close reading of Zenas Robbins' letter to Abraham Lincoln. A close reading is a careful, critical analysis of a passage or text to develop a better understanding of the meaning of the text without relying on other information.

Use the questions below to help you analyze this text. You will need to read the letter more than once to fully understand it and answer all the questions. You may use either the original letter or the typed transcript to complete these questions.

### READ THROUGH #1

The first time reading through the text is to help you become familiar with the general features and ideas.

Read the letter. As you're reading, underline any words you don't recognize.

Who wrote the letter?

Find the date the letter was written and circle it.

Does the author of the letter know Abraham Lincoln? What evidence in the letter supports your answer?



# LINCOLN 'S PATENT

## STUDENT WORKSHEET

### READ THROUGH #2

The second time reading through the text challenges you to dig deeper and focus on more specific or individual parts.

Read the letter again. Choose one sentence or phrase that you find interesting or important and write those words in this box.

Why did this sentence/phrase attract your attention?

How does this sentence/phrase help you understand what this letter is about?

### FINAL ANALYSIS

1. Write one question you still have about the letter.
2. How could you find the answer to this question?
3. What was the purpose of this letter?
4. Why might this letter be considered an important historical document?





# RETHINKING LINCOLN ' S PATENT

## STUDENT WORKSHEET

Lincoln used his personal experiences, along with the knowledge and technology available during his time to come up with the idea for his longboat flotation device. Progress in every part of our lives is due to hard-working and hard-thinking people who invent, create, and build new products and ideas.

Though Lincoln's patent was likely never actually used on a boat, it is possible that his ideas had an influence on someone else who was trying to solve a similar problem. We never know how our ideas will be used by others to make the world a better place!

**Instructions:** Your challenge today is to rethink Lincoln's patent using the knowledge and technology available today in our society. Lincoln's goal was to create a flotation device that would allow a longboat stuck on a sandbar in the river to lift itself out of the water enough to continue to float down the river. How can you improve on Lincoln's patent? Draw and label your design on the images of a longboat on the following page.

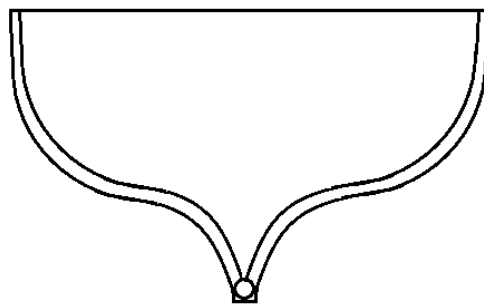
**Written Reflection:** When you have finished your design, write a descriptive paragraph that explains your invention, how it works, and why it is an improvement over Lincoln's design.



# RETHINKING LINCOLN'S PATENT

## STUDENT WORKSHEET

**Instructions:** Draw and label your new and improved longboat flotation device below for both the side view (top picture) and the front view (bottom view).





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](https://www.ilfb.org/resources/ifb-in-action/illinois-monarch-project-provides-resources/). Available at <https://www.ilfb.org/resources/ifb-in-action/illinois-monarch-project-provides-resources/>
  - Watch this [video](https://www.youtube.com/watch?v=_QYvaiozsFc) from the Illinois Farm Bureau all about pollinator habitats. Available at [https://www.youtube.com/watch?v=\\_QYvaiozsFc](https://www.youtube.com/watch?v=_QYvaiozsFc)
- Have students write a paragraph about the importance of pollinators.
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!





Literacy



Art

# PIG PLACEMAT

## Grade Level

3-6

## Length of Lesson

15-45 minutes

## Objective

By the end of this lesson, students will be able to demonstrate their knowledge of pigs.

## Materials Needed

- 8.5" x 11" paper or larger
- Scratch paper
- Markers or crayons
- Scissors
- Glue or tape
- Paper scraps, various colors (optional)

## Standards

### Common Core

CCSS.ELA-Literacy:  
RI.K.4; RI.1.5; RI.2.5;  
RI.3.5; W.4.3; SL.K.1a;  
SL.K.2; SK.K.6;

### Illinois Visual Arts

VA:Cr1.2.K-6;  
Cr2.2.PK; Cr2.3.PK;  
Cr2.1.1; Re7.2.1

## Lesson Summary

This lesson is designed to challenge students to take their knowledge of pigs — life, health, and uses — and creatively display that understanding on a kid's placemat!

## Suggested Sequence of Events:

1. Read "[Awesome Agriculture: Pigs & Pork in the Story of Agriculture](#)" by Susan Anderson & JoAnne Bugey to snag student interest.
2. Read through the [AITC Pork Ag Mag](#) to learn about pigs and pork. Interactive online versions can be found on our website.
3. Complete the activity following the procedures:
  - Take some time to discuss what placemats are used for. How do they look in restaurants? Brainstorm some creative ideas for designing a kid's placemat — crosswords, word searches, matching, true or false, pictures/diagrams, fonts, etc.
  - Give your students requirements for what needs to be included. Make it fun by including interactive information like games!
  - Give each student a blank piece of scratch paper and have them create a rough draft or write down the facts they want to share and how they want to share them.
  - Once students are finished with their rough drafts, give them the paper you are using for final drafts.
  - Have fun and be creative!
5. Whole class discussion and reflection of activity. Have students share one to two facts they added to their placemats!

# TEACHER RESOURCES

## Extension Ideas:

- Have students include the different cuts of meat a pig provides.
- Make copies of their placemats and have them switch with the person next to them to read the information and complete the games on each others' placemats!
- Laminate their final drafts so they can take them home and use them when they eat.
- Read "[Awesome Agriculture: Pigs an A-to-Z Book](#)" by Susan Anderson & JoAnne Buggie. Look at the pictures and have students analyze the images.
- Introduce the word 'livestock' to your students and talk about why farmers raise animals. What do we use pigs for?
- Learn about all the products we get from pigs. Why are pigs so important for us?
- Find various recipes that use pork products. Dig deeper and compare pork dishes from around the world.
- Watch a video that talks about what pigs eat and where they live. What do pigs need to be healthy?
- Learn about different pig species around the world.
- Invite a pig farmer into your classroom to talk about pig farming.
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Ag Literacy Coordinator for free classroom sets of our Ag Mags!



# MILK EMULSION

**Grade Level**

4-6

**Length of Lesson**

30 minutes

**Objective**

By the end of this lesson, students will have a better understanding of how sensitive the fats and proteins of milk are to new substances.

**Materials Needed**

- Milk (whole or 2%)
- Small bowls
- Cotton swabs
- Food coloring (4 colors)
- Dish-washing soap

**Standards**Common Core

CCSS.ELA-Literacy.RI.4.3;  
RI.5.3

NGSS

5-PS1; MS-PS1

**Lesson Summary**

This lesson is a fun, hands-on activity designed to help students understand how fats and proteins are sensitive to the changes in the surrounding solution (the milk).

**Suggested Sequence of Events:**

1. Read through the [IAITC Dairy Ag Mag](#) to learn more about milk and other dairy products! Interactive online versions can be found on our website.
2. Complete the activity following the procedures:
  - Pour enough milk in the bowl to completely cover the bottom. Allow the milk to settle. There should be no ripples in the milk before starting this activity.
  - Add one drop of each of the four colors of food coloring - red, yellow, blue, and green - to the milk. Keep the drops close together in the center of the plate of milk.
  - Find a clean cotton swab for the next part of the experiment. Predict what will happen when you touch the tip of the cotton swab to the center of the milk. It's important not to stir the mix. Just touch it with the tip of the cotton swab.
  - Now place a drop of liquid dish soap on the other end of the cotton swab. Place the soapy end of the cotton swab back in the middle of the milk and hold it there for 10 to 15 seconds.
  - Add another drop of soap to the tip of the cotton swab and try it again. Experiment with placing the cotton swab at different places in the milk.
4. Whole class discussion and reflection of activity. Here are some prompting questions:
  - Describe how the milk reacted when you first added the food coloring drops (step number 2).
  - Explain what happened when the soapy cotton swab was held on the surface of the milk.
  - What happened when you placed the soapy cotton swab in different locations of the plate? Would this work with the plain cotton swab, why or why not?
  - Read the background information on the teacher resources page.
    - What makes the food coloring in the milk move?
    - Explain why this activity would or would not work with regular tap water.

# TEACHER RESOURCES

## Background Information:

When you add soap to milk, the weak chemical bonds that hold the proteins in the solution are altered. It becomes a free-for-all! The molecules of protein and fat bend, roll, twist and contort in all directions. The food coloring molecules are bumped and shoved everywhere, providing an easy way to observe all the invisible activity.

At the same time, soap molecules combine to form a *micelle*, or cluster of soap molecules. These micelles distribute the fat in the milk. This rapidly mixing fat and soap causes swirling and churning where a micelle meets a fat droplet.

Milk is mostly water and has surface tension like water. The drops of food coloring floating on the surface tend to stay put. Liquid soap wrecks the surface tension by breaking the cohesive bonds between water molecules and allowing the colors to zing throughout the milk. What a party!

## Extension Ideas:

- Read "[Clarabelle: Making Milk and So Much More](#)" by Cris Peterson. Look at the pictures and have students analyze the images.
  - Have students write a short story or create a comic strip from Clarabelle's perspective.
- Take a closer look at emulsion. What are other types of emulsions?
  - Try out IAITC "The Chemistry of Butter" activity and make your own butter while deepening their understanding of emulsion.
- Take the experiment to the next level and have students test different types of milk-different fat contents and even different brands!
- Take a field trip to a dairy farm and learn about dairy farming.
- Invite a dairy farmer into the classroom.
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

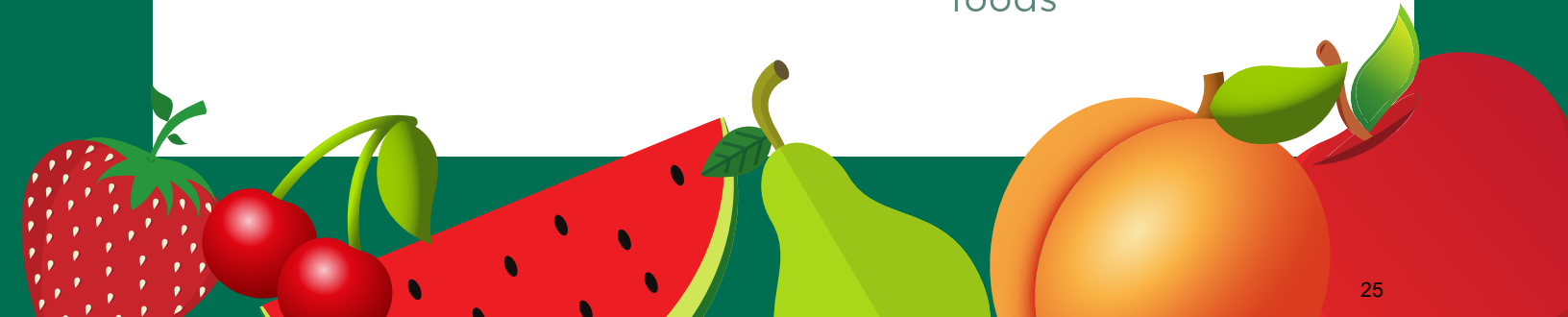




# FARMERS MARKET SCAVENGER HUNT

CHECK OFF ALL THE ITEMS YOU  
CAN FIND AT TODAY'S MARKET!

- vegetable you've never tried
- something red
- dessert ingredient
- eggs in a carton
- say hello to a farmer
- bouquet of flowers
- something yellow
- dairy product
- something that grows on a vine
- person who sells meat
- salad greens
- something sweet
- loaf of bread
- jelly in a jar
- honey
- one of your favorite foods





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](http://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.

# 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](http://agintheclassroom.com) to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!





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 [agintheclassroom.org](http://agintheclassroom.org) to contact your County Ag Literacy Coordinator for free classroom sets of our Ag Mags!







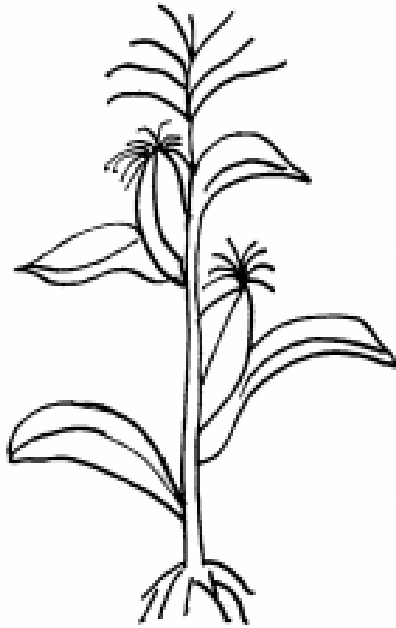
Science



Literacy

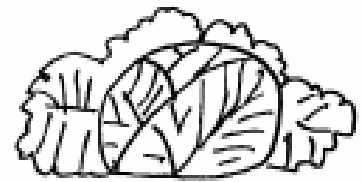
# TOPS AND BOTTOMS: TEMPLATE

## Tops and Bottoms

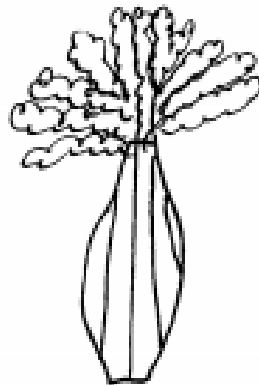


Corn

Beet

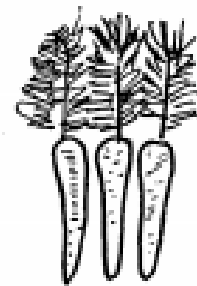


Lettuce

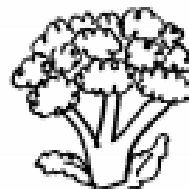


Celery

Carrot



Radish



Broccoli



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**Step 1**



**Step 2**



**Step 3**



Science



Literacy

# PACKING PEANUTS

## Grade Level

3-6

## Length of Lesson

45 minutes

## Objective

By the end of this lesson, students will have a better understanding of renewable, non-renewable, and biodegradable resources.

## Materials Needed

- [Cornstarch packing peanuts](#) (available from [uline.com](#))
- Styrofoam packing peanuts
- Clear 8-12 oz. cups (2 per group)
- Water (2 cups per group)
- Copies of student worksheet
- Copies of QR codes sheet (optional)

## Standards

### Common Core

CCSS.ELA-Literacy.W.3.1;  
W.3.7

### NGSS

K-2.ETS1-1; K-2-ETS1-2;  
2-PS1-1; 2-PS1-3

## Lesson Summary

This lesson is a hands-on activity that challenges students to strengthen inquiry skills as they use the scientific method to explore materials we use for every day objects. This also helps students critically think about renewable vs. non-renewable resources.

\*\*For younger grades, students will need to have already learned concepts such as hypothesis (and/or the scientific method), biodegradable, renewable, and non-renewable resources.

## Suggested Sequence of Events:

1. Set Up: Each group will need two clear cups, one half-way filled with corn packing peanuts, and the other half-way filled with Styrofoam packing peanuts. Have students label their cups "Packing Peanut A" and "Packing Peanut B." Each group will also need at least two cups with equal amounts of water in them.
2. Read through the [IAITC Corn Ag Mag](#) to learn about corn. Interactive online versions can be found on our website.
3. Read "[Corn](#)" by Gail Gibbons to snag student interest.
4. Complete the activity following the procedures:
  - Pass out the student worksheets and talk about the words "renewable" and "non-renewable." Have them brainstorm and list what resources are renewable/non-renewable. As they are working, pass out their lab materials.
  - As a class, have students share their lists and create one definition of each term to write on the board.
  - Have students work in small groups of two to three and follow the directions on their student sheets that will walk them through their scientific inquiry activity.
  - Once they are finished with their activity and have completed their worksheet, have students clean up their materials.
3. Whole class discussion and reflection of activity. Here are some discussion prompt ideas:
  - Did your understanding of renewable and non-renewable resources change or deepen after completing this activity? If so, how?
  - What do you think about using corn based products for something like packing peanuts? Is this better for the environment?

# TEACHER RESOURCES

## Additional Resources:

To help guide students through the experiment, we have added additional secondary sources that will help deepen and develop their understanding of the term “biodegradable,” facts about corn, and what makes Styrofoam. The articles from the websites can be printed, used as links in Google Classroom (for example) for students to use, or to be used as QR codes if your technology allows.

Observation: [Biodegradable](https://wiki.kidzsearch.com/wiki/Biodegradation) available at <https://wiki.kidzsearch.com/wiki/Biodegradation>.

Hypothesis: [Corn growth](https://youtu.be/iFCdAgeMGOA) available at <https://youtu.be/iFCdAgeMGOA>.

Experiment: [Corn based products](https://youtu.be/5J_ZD_vTRhU) available at [https://youtu.be/5J\\_ZD\\_vTRhU](https://youtu.be/5J_ZD_vTRhU).

Conclusion: [Styrofoam](https://easyscienceforkids.com/styrofoam-polymers/) available at <https://easyscienceforkids.com/styrofoam-polymers/>.

## Background Information:

Unlike Styrofoam packing peanuts, cornstarch packing peanuts are biodegradable and decompose in water, leaving no toxic waste. Corn, being a plant, is a renewable resource that we could use to reduce the amount of non-renewable and non-biodegradable products!

## Extension Ideas:

- Define and discuss the words “biodegradable,” “decompose,” and “toxic waste.” Dig deeper and look at the by-products and wastes from making various materials.
- Brainstorm as a class and make a T-Chart on the board and list renewable and non-renewable resources.
- For older students, have them research what products can be made renewable, but are still primarily made with non-renewable resources. (Ethanol, corn packing peanuts, plastics, etc.)
- Because the peanuts begin to break down in water, the peanuts can be used to construct sculptures and art. Simply “lick and stick.” Have student build structures out of the corn packing peanuts. A little spit goes a long way!
  - Have students think of the word “agriculture.” What is the first thing that comes to mind? Have them build that with their packing peanuts.
  - 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 using the peanuts.
  - For younger students learning the alphabet or numbers, give them a piece of paper with a number or letter on it. Have them “trace” the number or letter with the corn packing peanuts by having them lick and stick them together.
- Learn more about other common corn-based products.
- Invite a corn farmer into the classroom to talk about types of corn, their uses, and what it takes to be a corn farmer.
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!



# PACKING PEANUTS

## STUDENT WORKSHEET

Take a few minutes to think about resources that we use daily. Which of those are renewable? Which are non-renewable? Make your list of each type in the boxes below!

Renewable	Non-renewable

Now that you've shared your ideas as a class, write what it means for a resource to be renewable and non-renewable.

### OBSERVATION

Before any scientist begins the experimentation stage of their inquiry, they must make observations of the objects they are using in their experiment! This way, they can use that data to help determine how to complete their experiment and what materials to use. Observe your two types of packing peanuts and record your observations in the table below!

Sound

Color

shape

Texture

Smell

Softness

Packing Peanut A	Packing Peanut B





# PACKING PEANUTS

## STUDENT WORKSHEET

### HYPOTHESIS

We want to figure out which one of these packing peanuts is made from biodegradable materials. Based on your observations and your understanding of the term 'biodegradable,' write your hypothesis in the space below.

---

### EXPERIMENT

You should have two cups of water, with the same amount of water in each cup. Slowly pour one cup of water into the "Packing Peanuts A" cup and the other cup of water into the "Packing Peanuts B" cup. Record your observations in the table below.

Packing Peanut A	Packing Peanut B

### CONCLUSION

Now that you've finished your experiment, can you accept or reject your hypothesis? (Circle one)

Accept      Reject

What materials are the packing peanuts made from?

Packing Peanut A:

Packing Peanut B:

Which of these materials is renewable? Explain.



Science



Literacy

# PACKING PEANUTS

## STUDENT WORKSHEET

### OBSERVATION



### HYPOTHESIS



### EXPERIMENT



### CONCLUSION





# SOYBEAN PLASTIC

## Grade Level

3-7

## Length of Lesson

50 minutes

## Objective

By the end of this lesson, students will have a better understanding of how plastic can be made from renewable resources.

## Materials Needed

- Cornstarch
- Soybean oil
- Food coloring
- Water
- Resealable sandwich-sized bags
- Microwave
- Pipette or eye dropper
- Tablespoon measuring spoons
- 1/8 teaspoon measuring spoon

## Standards

### Common Core

CCSS.ELA-

Literacy.RI.4.3; RI.5.3

### NGSS

5-PS1; MS-PS1

## Lesson Summary

This lesson is a fun, hands-on activity designed to help students understand how agriculture and the biological materials produced on farms can be used for more than just food. This lesson is also perfect for introducing renewable and non-renewable resources!

Lesson adapted from [National Ag in the Classroom](#).

## Suggested Sequence of Events:

1. Set Up: Complete this as a demonstration, group activity, or individual activity depending on time and materials.
2. Read through the [AITC Soybean Ag Mag](#) to learn more about soybeans! Interactive online versions can be found on our website.
3. Complete the activity following the procedures:
  - Read *Full of Beans: Henry Ford Grows a Car* by Pegge Thomas aloud. Suggested pre-activity questions can be found on the teacher resources page.
  - Introduce the term “bioplastic” by breaking the word into two parts; “bio” and “plastic.”
  - Put students into groups of three to four and give each group a set of materials.
  - Place one (1) tablespoon of cornstarch, 1/8 teaspoon of soybean oil, and one (1) tablespoon of water into the baggie.
  - Close the baggie and knead the materials together.
  - Open the baggie and add two drops of food coloring. Then close the baggie and mix again.
  - Open the baggie a little to create a vent and then heat it in the microwave for 20-25 seconds.
  - Remove the baggie and let it cool. Be careful, the baggie and contents will be hot!
  - Once it’s cooled, take it out of the baggie and you now have soybean plastic!
4. Whole class discussion and reflection of activity. Ask how plastic and bioplastic affect the environment. How does bioplastic affect farmers? What objects could be made using bioplastics? Would Henry Ford’s soybean plastic car work in today’s world?

# TEACHER RESOURCES

## Pre-Activity Questions:

What is plastic made from? (Many plastics are petroleum-based.)

How did the Great Depression affect Henry Ford and soybeans?

How did WWII affect the soybean plastic car?

What other events had an impact on Henry Ford's life and/or career?

How could soybean plastic be used today?

Why is soybean plastic considered biodegradable?

## Extension Ideas:

- Show students a diagram of a soybean plant.
- Complete our “Beanie Baby” activity to learn about germination and watch soybeans grow.
- Watch [Farm to Car](#) and the TEDx Talk [Sitting On Soybeans](#) to learn about how the Ford Motor Company uses bio-based products to create materials for cars. What are bio-based materials? Talk about the benefits of using bio-based materials.
- Take the experiment to the next level and have students test different amounts of the ingredients to see if that changes the product. Use our scientific inquiry worksheet to guide students.
- For higher grade levels, have students weigh the materials on a scale before and after microwaving.
- Take a field trip to a soybean farm and learn about soybean farming.
- Invite a soybean farmer into the classroom.
- Complete our “Corn Plastic” activity and compare the two types of plastics.
- Compare and contrast renewable and non-renewable resources.
- Go to [agintheclassroom.org](http://agintheclassroom.org) to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!



# COLORS ON YOUR PLATE

## Grade Level

3-5

## Length of Lesson

One to two class  
periods

## Objective

By completing this activity, students will have a better understanding of nutrition and what food groups should fill up their plates.

## Materials

- Copy of [Auntie Yang's Great Soybean Picnic](#) by Ginnie Lo
- Paper plates
- Markers, crayons, colored pencils
- Access to the internet (optional)

## Standards

### Common Core

CCSS.ELA-Literacy:  
RI.K.4; RI.1.5; RI.2.5;  
RI.3.5; W.4.3; SL.K.1a;  
SL.K.2; SK.K.6;

### ISSS

SS.G.2.2-3; SS.G.2.5;  
SS.G.3.3

## Lesson Summary

This lesson uses paper plates to create a fun way for students to strengthen their understanding of nutrition. This lesson is great to also teach about soybean varieties and introduce cultural nutrition.

## Suggested Sequence of Events:

1. Read through the AITC [Soybean](#) and [Nutrition](#) Ag Mags to learn more about soybeans and nutrition. Interactive versions can be found on our website.
2. Complete the activity following the procedures:
  - Read *Auntie Yang's Great Soybean Picnic* out loud to the class.
  - Ask students to observe the pictures and the details of the illustrations. After you're done reading, ask if they noticed anything different about these illustrations from other books. (The illustrations are all on plates!)
  - Go to [www.myplate.gov/life-stages/kids](http://www.myplate.gov/life-stages/kids) and talk about what types of foods should fill up students' plates.
  - Have students think of the types of foods that would fit into each section on their plates. Make a list on the board or have them individually brainstorm and share.
  - Give each student a paper plate.
  - Have students pick their favorite foods that would fit into each category. Once they have decided, have them draw and color those foods on their paper plates.
3. Whole class discussion and reflection of activity. Pair students together and have them share what is on their plates!



# TEACHER RESOURCES

## Extension Ideas:

- Read [\*Pod to Plate: The Life Cycle of Soybeans\*](#) by Julie D. Blunier.
- Have students create a comic strip or flip book showing the life cycle of a soybean.
- Show a labeled diagram of a soybean plant.
- Watch a YouTube video showing a soybean farm!
- Invite a soybean farmer into your classroom to talk about soybean farming.
- Learn about the different varieties of soybeans.
- Look up recipes that use varieties of soybeans and look into the history of that recipe. What part of the world inspired these recipes?
- Learn about different species of pollinators that are important for soybean growth.
- Go to [www.agintheclassroom.org](http://www.agintheclassroom.org) to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

# Agriculturally Accurate Books

## About/From BIPOC Communities and Other Underrepresented Populations

### **Black/African American**

- A Pocketful of Goobers*  
by Barbara Mitchell
- A Weed is a Flower*  
by Alik
- By Any Means Necessary*  
by Candace Montgomery
- Decoding Genes with  
MaxAxiom*  
by Amber J Keyser, PhD
- Farmer Will Allen and the  
Growing Table*  
by Jacqueline Briggs
- Freedom on the Menu*  
by Carol Weatherford
- George Crum and the  
Saratoga Chip*  
by Gaylia Taylor
- George Washington Carver  
Agriculture Pioneer*  
by Stephanie Macceca
- George Washington Carver  
for Kids*  
by Peggy Thomas
- George Washington Carver  
Ingenious Inventor*  
by Nathan Olson
- Harlem Grown*  
by Tony Hillery
- In the Garden with Dr. Carver*  
by Susan Grigsby
- No Small Potatoes: Junius  
Grove and his  
Potato Kingdom*  
by Tonya Bolden
- One Plastic Bag*  
by Miranda Paul
- Right this Very Minute*  
by Lisl Detlefsen
- Roll of Thunder, Hear My Cry*  
by Mildred D. Taylor
- Seedfolks*  
by Paul Flieshman
- Seeds of Change*  
by Jen Johnson
- Sorry for Your Loss*  
by Jessie Ann Taylor
- The Boy Who  
Harnessed the Wind*  
by William Kamkwamba and  
Bryan Mealer
- The Extraordinary Gardener*  
by Sam Boughton
- The Giant Pumpkin Suite*  
by Melanie Heuiser Hill
- The Mangrove Tree*  
by Susan Roth
- The Old Truck*  
by Jerome Pumphrey
- The Patchwork Quilt*  
by Valerie Flournoy
- The Spider Weaver*  
by Margaret Musgrove
- The Things about Bees*  
by Shabazz Larkin
- The Vanderbeekers and the  
Hidden Garden*  
by Karina Yan Glaser
- This is the Rope: A Story  
from the Great Migration*  
by Jacqueline Woodson
- Two Old Potatoes and Me*  
by John Coy
- Understanding  
Photosynthesis  
with MaxAxiom*  
by Liam O'Donnell
- Working Cotton*  
by Sherley Anne Williams

## **Latinx**

*A Handful of Stars* by Cynthia Lord  
*Amelia's Road* by Lina Jacobs Altman  
*...and now, Miguel* by Joseph Krumgold  
*Carlos and the Cornfields* by Jan Romero Stevens  
*Esperanza Rising* by Pam Munoz Ryan  
*Harvesting Friends* by Kathleen Contreras  
*Return to Sender* by Julia Alvarez  
*The Circuit* by Francisco Jimenez  
*The Legend of the Poinsettia* by Tomie DePaola  
*The Good Garden* by Katie Smith Milway  
*Under the Mesquite* by Guadalupe Garcia McCall

## **Eastern European**

*A Song for Lena* by Hilary Horder Hippely  
*My Grandfather's Coat* by Jim Alyesworth

## **LGBTQ**

*By Any Means Necessary* by Candace Montgomery  
*Pumpkinheads* by Rainbow Rowell

## **Mobility Challenged**

*Right this Very Minute* by Lisl Detlefsen

## **Developmental Differences**

*My Louisiana Sky* by Kimberly Willis Holt  
*The Things About Luck* by Cynthia Kadohata

## **Indigenous/Native American**

*Apple in the Middle* by Dawn Quigly  
*Arrow to the Sun* by Gerald McDermott  
*At the Mountain's Base* by Traci Sorell  
*Brother Eagle, Sister Skye* by Susan Jeffers  
*Corn* by Gail Gibbons  
*Corn is Maize* by Aliki  
*Encounter* by Brittany Luby  
*Fry Bread* by Kevin Maillard  
*Four Seasons of Corn: A Winnebago Tradition*  
by Sally Hunter  
*Sacagawega* by Veda Boyd Jones  
*Step into the Inca World* by Phillip Steele  
*Thirteen Moons on a Turtle's Back* by Joseph Bruchac

## **Asian/Eastern Asian American**

*Aani and the Tree Huggers* by Jeannine Atkins  
*A Place No Sunflowers Grew* by Amy Lee-Tai  
*Auntie Yang's Great Soybean Picnic* by Ginnie Lo  
*Danbi Leads the School Parade* by Anna Kim  
*Flowers from Mariko* by Rick Noguchi  
*Raymond's Perfect Present* by Therese On Louie  
*Seeds for Change* by Marly Cornell  
*The Empty Pot* by Demi  
*The Thing About Luck* by Cynthia Kadohata

## **Women in Science**

*Women in Science: 50 Fearless Pioneers Who  
Changed the World* by Rachel Ignotofsky

# Agriculturally Accurate Books

## On Social Emotional Learning

### Empathy

*Goldfish and Chrysanthemums* by Andrea Chang

*Grow Happy* by Jon Lasser

*Grow Kind* by Jon Lasser

*Under the Mesquite* by Guadalupe Garcia McCall

### Positive Relationships

*Because Amelia Smiled* by David Ezra Stein

*Chrysanthemum* by Kevin Henkes

*Enemy Pi* by Derek Munson

*Last Stop on Market Street* by Matt de la Pena

*Stick and Stone* by Beth Ferry

*Those Shoes* by Maribeth Boelts

### Recognizing and Managing Emotions

*Interrupting Chicken* by David Ezra Stein

*Juna's Jar* by Jane Bahk

*The Dot* by Peter H. Reynolds

*The Happiest Tree* by Uma Krishnaswami

*There Might be Lobsters* by Carolyn Crimi

### Problem Solving

*After the Fall* by Don Santat

*A Quiet Place* by Douglas Wood

*Seeds of Change* by Jen Cullerton

*The Mangrove Tree* by Susan L. Roth

### Perspective

*Anna's Corn* by Barbay Santucci

*Big Tree is Sick* by Nathalie Slosse

*Lemonade War* by Jacqueline Davies

*The Bad Seed* by Jory John

*The Cool Bean* by Jory John

*The Good Egg* by Jory John

### Grit and Perseverance

*Calling the Water Drum* by Latisha Redding

*Fish in a Tree* by Lynda Mullaly

*George Crum and the Saratoga Chip* by Gaylia Taylor

*Hazelnut Days* by Emmanuel Bourdier

*Life* by Cynthia Rylant

*One of the Murphys* by Mullaly Hunt

*Out of My Mind* by Sharon M. Draper

*Step to the Plate* by Maria Singh