Go Big or Gourd Home

Pumpkin-Themed Literature in the Pumpkin Capital of the World

Illinois Agriculture in the Classroom℠

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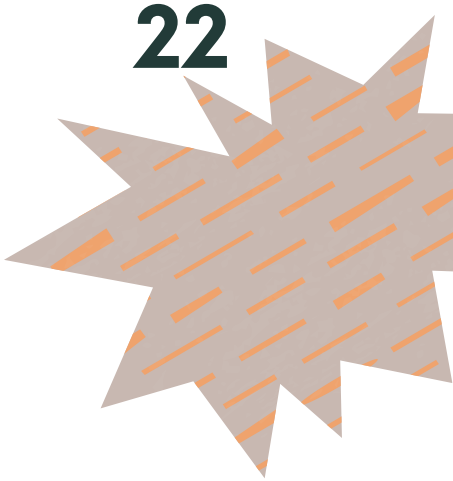
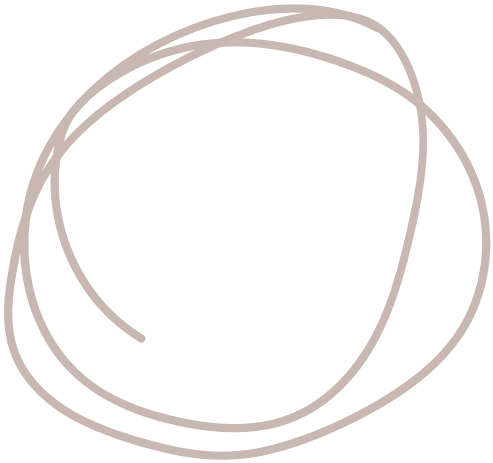




Ode to a Vegetable

Literacy

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 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.

- *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 _____.

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.

Pumpkin Poetry Analysis

Literacy

Name: _____

Directions: After reading your chosen poem 2–3 times, answer the following questions to the best of your ability.

1. Name of poem: _____
2. Who is the speaker in this poem? What kind of person are they?

3. What is the setting (time and place) of the poem?

4. In a single sentence, state the poem's theme (central idea).

5. Describe the structure of the poem. How does this relate to the content of the poem? Does the structure itself add meaning to the poem?

6. What is the tone of the poem? Provide examples to explain why you think this.

7. Notice the poem's diction (word choice). Discuss a few words which seem especially well-chosen.

Pumpkin Poetry Analysis

8. Identify different poetic devices and explain how they contribute to the poem's message.

Simile a comparison using *like* or *as*	
Metaphor a direct comparison	
Personification giving human qualities to nonhuman things	
Imagery creating pictures with words	
Alliteration repeating the same letter	

9. Why do you think the poet wrote this poem?

10. How does this poem relate to agriculture? What, if anything, does it share about growing pumpkins?

11. How does this poem relate to any of the other texts we've read in class?

12. List 2-3 questions that you would still like to be answered about this poem.

Pumpkin Catapult

STEM

Grade Level
4-6

Length of Lesson
2 class periods

(1 day of building, 1 day of testing)

Objective
By the end of this lesson, students will learn more about the design and use of simple machines.

Materials Needed
- Large popsicle sticks
- Rubber bands
- Plastic Bottle Caps
- Hot Glue
- Assorted additional building materials
- Small pumpkin-shaped candy
- Protractors
- Container or bin ("wagon" for challenge)
- Copies of student worksheet

Standards
NGSS
4-PS3; 3-5-ETS1; MS-ETS1-1; MS-PS3-2

Lesson Summary
This lesson is designed to help students learn more about simple machines and provide opportunities to design and test their own pumpkin catapult. Additionally, there is a design for a large catapult made from PVC pipe that will launch small pumpkins up to 40 feet.

Suggested Sequence of Events:
1. Set Up: Teachers may also want to build their own example to inspire students' creations.
2. Read *The Great Pumpkin Smash* by Lori Haskins Houran to capture student interest and introduce the concept of catapults.
3. Read through AITC Pumpkin Ag Mag to learn about pumpkins. Interactive online versions can be found on our website.
4. Watch a short pumpkin harvesting video to show students some of the machines used to harvest processing pumpkins in Illinois. Here is one good example: https://youtu.be/5Ac98DrsKmY
5. Complete the activity following the procedures:
    - Discuss the concept of a catapult and the simple machines used to make a catapult work.
    - Pass out the student worksheets to each student and read the "STEM Challenge" together. Explain that they will be trying to catapult a candy pumpkin into a container.
    - After passing out the necessary building materials have students brainstorm how the pieces work together and then draw a blueprint. They should do this before they start building.
    - Provide students time to build, discuss, and test their creations. *See Background Information on the Teacher Resources page.
    - Complete the STEM Challenge as a class and see whose catapult can launch the candy pumpkin into the wagon!
6. Additionally, the teacher could construct a PVC Pumpkin Catapult and have students experiment with launching small pumpkins outside.
7. Whole class discussion and reflection of activity. Pair students together and have them share their catapult designs with their partner. What variables can be changed to make the pumpkins launch farther?

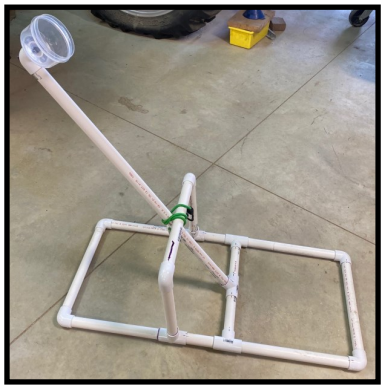
TEACHER RESOURCES

Background Information:
A part of STEM fields is the testing that takes place behind the scenes! Your students are trying to launch a candy pumpkin into a container placed at a specified distance, determined by you. Students will need to test their catapults to determine the force needed to launch the pumpkin the correct distance. Meaning, what is the best angle or how many posicle sticks need to be stacked for the correct force. They will choose two angles to test and complete three trials for each, then find the average of those trials for each angle. This will help them determine the angle they need for the challenge.

Extension Ideas:
- Have students define the bolded words on their student worksheets.
- Talk about why the pumpkin doesn't stay in the air, what happens to the pumpkin's motion when it hits the ground, and what causes the pumpkin to travel a further distance.
- Add another variable into their tests and have students use objects of different weights to compare results.
- Read "Pick a Pumpkin" by Patricia Toht. Look at the pictures and have students analyze the images.
- Have students write pumpkin facts from the AITC Pumpkin Ag Mag on their catapults.
- Have students create a comic strip including pumpkin facts.
- Watch a time lapse video of a pumpkin growing.
- Watch a video from a local farmer discussing pumpkin growth and harvest.
- Take a field trip to a pumpkin patch and pick your own pumpkins.
- Take a closer look at squash bees and other pollinators. What is pollination? Why is it important for pumpkins?
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

Catapult made with instructions

Catapult designed by a 1st grader



PVC Catapult

Pumpkin Catapult

Student Worksheet

STEM Challenge: There's been a machine breakdown! A farmer needs help getting his pumpkins into the wagon. Can you design and build a *Pumpkin Catapult* to launch those pumpkins into the wagon?

The **distance** and **speed** of the pumpkin is going to depend on the **force** of the machine. The force is determined by how far back your catapult is pulled before releasing.

How will you adjust the force of your catapult?

Look at the materials your teacher has given you for your build. Draw and **label** some possible designs (blueprints) for your catapult in the box below.

Pumpkin Catapult

Student Worksheet

Time for your **hypothesis**. This should include your ideas on the relationship between force of your catapult and the distance your pumpkin will travel.

My Hypothesis:

Just as scientists and engineers do, you are going to complete a series of tests before trying to get your pumpkin into the wagon! Fill out the information below as you complete your testing trials.

Angle: this is the number of popsicle sticks and/or the angle measured with a protractor.

Distance: this is the amount of space (in inches) measured from the base of the catapult to the spot where your pumpkin ***landed*** – this does NOT include where the pumpkin stops after rolling!

Test 1

Angle of Launch =	
Trial 1	inches
Trial 2	inches
Trial 3	inches

Test 2

Angle of Launch =	
Trial 1	inches
Trial 2	inches
Trial 3	inches

Now, calculate the average distance traveled for each angle you tested.

Pumpkin Catapult

Student Worksheet

Use the data you collected to create a visual representation of those measurements! You will need to add the information for the bar graph, and use two different colors to represent the two angle tests you completed. Make sure you label your graph!

Reflection Questions:

1. Why do scientists and engineers revise their original designs? Did you have to revise yours?

2. For this activity, what worked well and what was challenging?

3. Did your catapult work for getting the pumpkin into the wagon? Why or why not?

4. How would adding a heavier or lighter object change the angle needed for making it into the wagon?

STEM

Pumpkin Catapult

Basic Instructions

Materials:

- Seven (7) large popsicle sticks
- Four (4) rubber bands
- Plastic bottle cap
- Hot glue

Follow these steps to build a basic pumpkin catapult:

1. Stack five (5) popsicle sticks together and wrap rubber bands around each end until tight.
2. Stack the remaining two (2) popsicle sticks together and wrap a rubber band around one end until tight.
3. Spread apart the two (2) popsicle sticks on the end opposite the rubber band and insert the stack of five (5) popsicle sticks in between.
4. Push the stack of five (5) sticks down until it reaches the rubber band holding the two (2) popsicle sticks together.
5. Wrap another rubber band around the spot where the two (2) stacks of popsicle sticks meet.
6. Carefully glue a plastic bottle cap to the upper popsicle stick to create a pumpkin basket for your catapult.
7. Allow to dry, then place a candy pumpkin inside the bottle cap.
8. Use your finger to pull down the popsicle stick. Release your finger and see how far your pumpkin flies!

Now that you have built a basic catapult, how can you improve the design? Can you make a more powerful catapult with a new design?

Pumpkin Catapult

PVC Catapult Instructions

Materials:

- Fourteen (14) feet of 1" diameter PVC pipe
- Five (5) 1" diameter PVC "T" connectors
- Seven (7) 1" diameter PVC 90 degree connectors
- PVC primer and glue (often sold together)
- One (1) bungee cord
- One (1) 3" bolt and nut
- Small plastic container

Tools: Hacksaw or power saw, tape measure, drill and drill bit, permanent marker

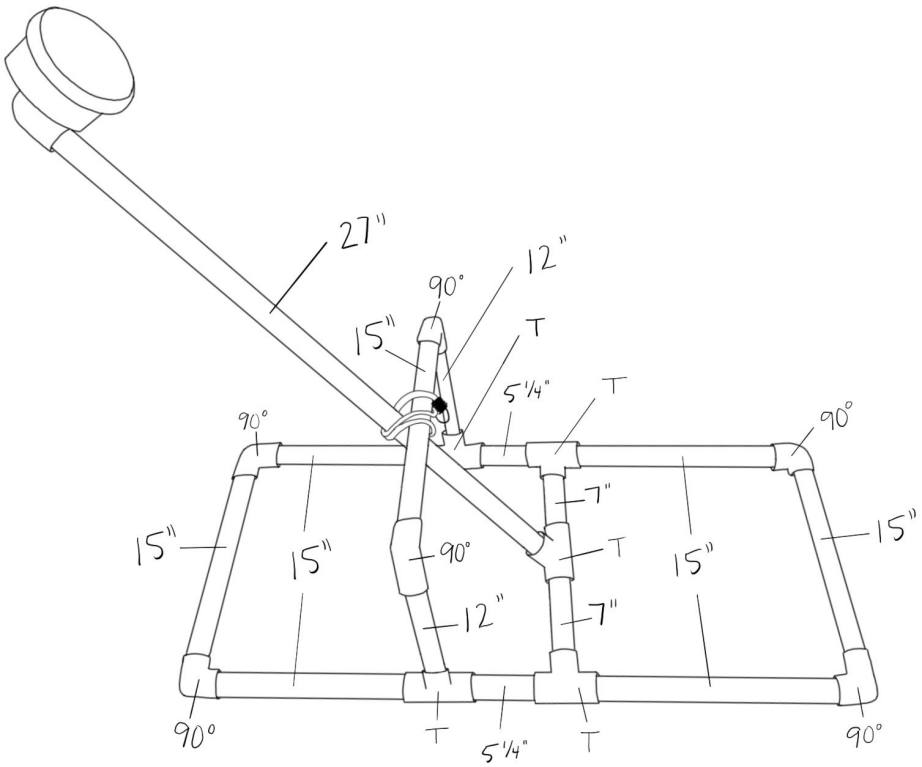
Follow these steps to build a PVC pumpkin catapult:

1. Begin by cutting your PVC pipes into the following lengths:
    - Seven (7) 15" long pieces
    - Two (2) 7" long pieces
    - Two (2) 5 1/4" long pieces
    - Two (2) 12" long pieces
    - One (1) 27" long piece (this can be shortened or lengthened to change the catapult's launching ability)
2. Follow the diagram on the following page to attach the pieces of your catapult. **Do NOT use the PVC glue at this time!**
3. Drill a hole through the 90 degree connector on the catapult's throwing arm large enough for your bolt to fit through.
4. Drill a hole through the bottom of your plastic container and then attach using the bolt and nut.
5. Before gluing, you may want to test out your catapult to see if you want a longer or shorter throwing arm. To test, wrap the bungee cord around the throwing arm and attach to the horizontal upright. The more you wrap it, the further your catapult should launch.
6. If you are happy with your throwing arm's ability, it's time to get ready to glue. Before disassembling your catapult, use a permanent marker to mark each pipe and connector union. Draw a straight line across each union. When you glue your pieces together, you will need to make sure you match these lines up again. This is a very important step, as you only get one chance to glue!

Pumpkin Catapult

PVC Catapult Instructions

7. Lay down cardboard to protect your surface from the PVC glue. It is recommended to do the gluing in a well-ventilated area. You should also wear rubber gloves to protect your skin.
8. Unscrew the bottles of PVC primer and glue. You should notice that the lids have brushes attached to them.
9. On each connector, rub the PVC primer brush on the interior where the pipe will be inserted.
10. Then, rub the PVC glue brush on the same spot.
11. Insert the correct PVC pipe, making sure to line up your permanent marker lines as you push the pipe in as far as it will go. Take your time with this step!
12. Continue for each piece until your catapult is reassembled.
13. Let dry thoroughly before using.
14. Students can experiment with this catapult as well. Try pumpkins of different weights and sizes and see if the distance changes. Set up a wagon and see if students can hit it. Try placing the catapult on different inclines to see if the trajectory changes.



3-D Pumpkin

Science Literacy

Grade Level
3-5

Length of Lesson
45 minutes

Objective
By the end of this lesson, students will learn more about growing pumpkins in Illinois.

Materials Needed
- Orange construction paper
- Green construction paper
- Hole punch
- 2 paper fasteners for each pumpkin
- Scissors

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

SS.EC.1.3; SS.IS.4.3-5

NGSS
K-LS1-1; 3-LS1-1; 3-LS4-3

Lesson Summary
This lesson is designed to help students learn more about pumpkins while creating a visual display of a mini pumpkin.

Suggested Sequence of Events:
1. Set Up: Cut the orange paper lengthwise into 3/4 inch strips. Cut the green construction paper into 1inch x 1 inch squares. Stack the orange strips and hole punch both ends of the stack and then punch a hole through the center of the green squares. Each student will get four orange strips and one green square.
2. Read "Too Many Pumpkins" by Linda White to capture student interest.
3. Read through AITC Pumpkin Ag Mag to learn about pumpkins. Interactive online versions can be found on our website.
4. Complete the activity following the procedures:
    - Identify four pumpkin facts from the Ag Mag and write a fact on each of their strips of orange paper.
    - Have students stack their orange strips, all facing the same direction.
    - Place a brad fastener through the center hole of the green square and then through one end of the stack of the orange strips. Make sure the words are facing outward. Spread the wings of the fastener to keep it in place.
    - Grab a second fastener and bend each end of the paper strips down, sliding the fastener through the punched hole at both ends. When all eight ends are attached, spread the fastener inside your pumpkin.
    - Last, have students spread out the paper strips to form a 3D pumpkin!
5. Whole class discussion and reflection of activity. Pair students together and have them share their pumpkin facts with their partner.

TEACHER RESOURCES

Extension Ideas:

- Read "Pick a Pumpkin" by Patricia Toht. Look at the pictures and have students analyze the images.
- Have students write three facts about pumpkins and one lie on their orange strips and have their classmates figure out which is the lie.
- Have students create a comic strip including pumpkin facts.
- Have students tell a story from the pumpkin's perspective.
- Introduce or teach about photosynthesis.
- Watch a time lapse video of a pumpkin growing.
- Watch a video from a local farmer discussing pumpkin growth and harvest.
- Take a field trip to a pumpkin patch and pick your own pumpkins.
- Take a closer look at squash bees and other pollinators. What is pollination? Why is it important for pumpkins?
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

Illinois is the #1 state for growing pumpkins.

Morton, Illinois is the Pumpkin Capital of the World.

Pumpkin growth starts inside a flower.

Social Studies

Science

Ag-venture With Pumpkins

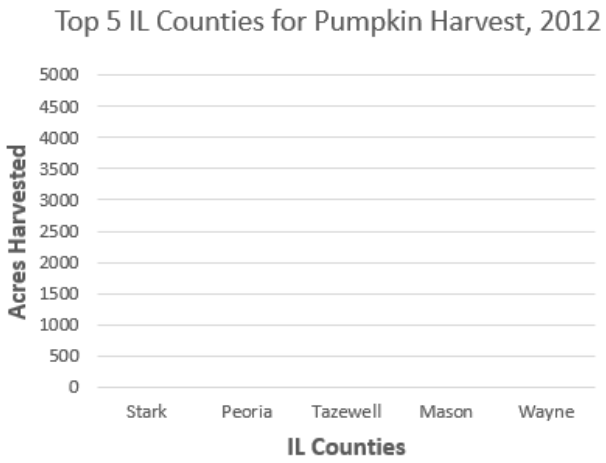
Use the IAITC Pumpkin Ag Mag to help you work through this worksheet!

Some Native American nations developed a way to grow pumpkins call the “Three Sisters.” In your own words, explain the benefits of this growing technique.

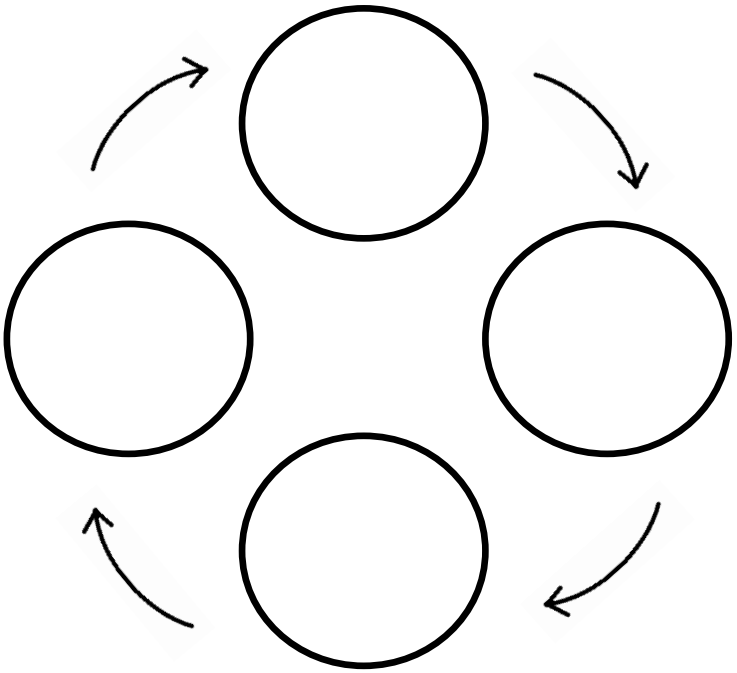
Use the data given in the Ag Mag to create a bar graph!

Y-Axis: _____

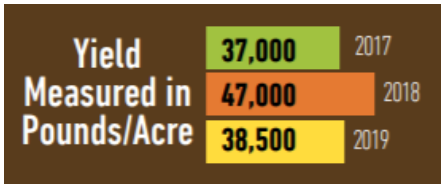
X-Axis: _____



Draw and label the 4 stages in the pumpkin life cycle!



Using the data below, calculate the differences of yield between each year. Make sure to include the measurement in your answer!



2017-2018: _____

2018-2019: _____

Answer Key

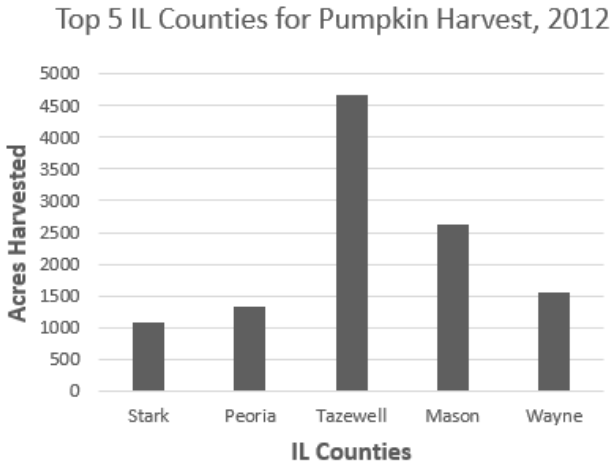
The Native Americans developed a way to grow pumpkins call the “Three Sisters.” In your own words, explain the benefits of this growing technique.

Answers should focus on how Native Americans grew corn, beans, and pumpkins together because each crop helps the other crop grow. The beans leave nutrients in the soil that are beneficial to corn growth. The pumpkins cover the ground and protect the soil, keeping it moist and decreased weed growth. The corn has sturdy stalks that helped the bean plants grow.

Use the data given in the Ag Mag to create a bar graph!

Y-Axis: *Acres Harvested*

X-Axis: *IL Counties*



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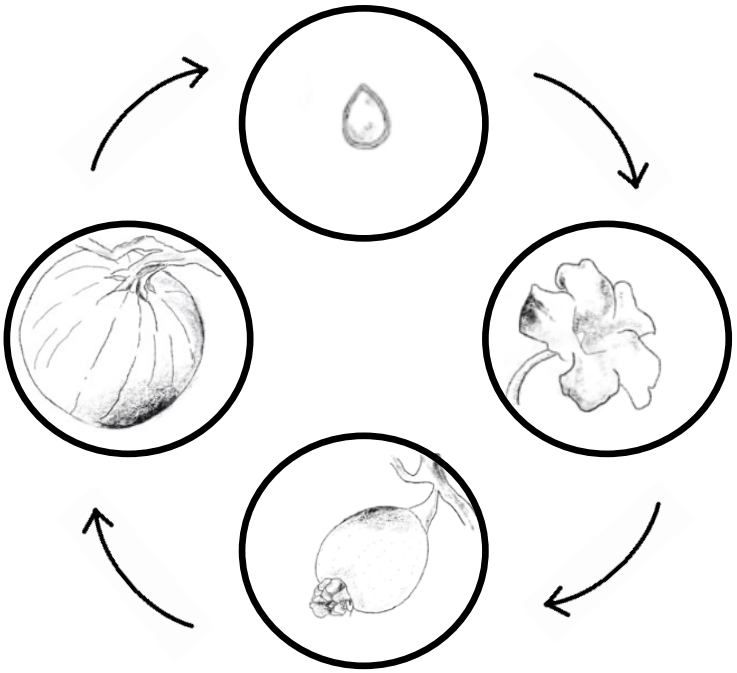

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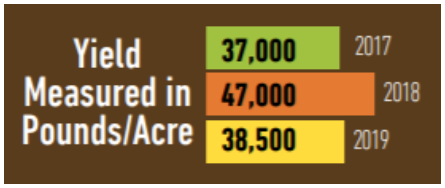

47,000 - 37,000 = 10,000

47,000 - 38,500 = 8,500

2017-2018: *10,000 pounds/acre*

2018-2019: *8,500 pounds/acre*

Science

Exploding Pumpkin

Grade Level
2-8

Length of Lesson
50 minutes, split into two class periods

Objective
By the end of this lesson, students will have a better understanding of chemical reactions.

Materials Needed
- 1 cup of 20-40 volume Hydrogen Peroxide (6%-12% will work)
- 2 packets active dry yeast
- 6 tablespoons warm water
- 2 tablespoons of dish soap
- Cylinder or flask at least 500 ml
- Small mixing bowl
- Food coloring (optional)
- Large pumpkin carved as a jack-o'-lantern
- Funnel
- Safety goggles
- Gloves

Standards
NGSS
3-PS2-2; 5-PS1; MS-PS1

Lesson Summary
This lesson is designed for teachers to do as a demonstration for students. Students will learn about exothermic chemical reactions all while learning about pumpkins! If you are teaching a higher grade, this could be used as an inquiry experiment for students to complete in small groups.

**The hydrogen peroxide may not completely break down from the yeast and could cause irritation on the skin or eyes. Because this is an exothermic reaction, the foam will be very warm at first. Please use caution if your are having students complete this in small groups.

Suggested Sequence of Events:
1. Set up: Carve a pumpkin into a jack-o'-lantern with a simple face so the foam can easily spew out. Then set up your demonstration area with a table cloth set underneath your jack-o'-lantern for easy clean up.
2. Read "Pumpkin Jack" by Will Hubbell to snag student interest about pumpkins and jack-o'-lanterns.
3. Read through the AITC Pumpkin Ag Mag to learn more about the pumpkins! Interactive online versions can be found on our website.
4. Complete the activity following the procedures:
    - Carve a pumpkin jack-o'-lantern with a simple face so the foam can easily spew out.
    - Place the cylinder in the pumpkin and carefully add the dish soap and hydrogen peroxide. If you are using food coloring, add a couple drops into the dish soap.
    - In your small mixing bowl, mix your yeast packets with warm water for 30 seconds. It should be similar to the consistency of melted ice cream.
    - Pour the yeast solution into the cylinder in the pumpkin, step back, and watch the foam spew from the jack-o'-lantern!
    - All the materials are safe to drain, so simply rinse all the materials in the sink and compost the pumpkin.
4. Whole class discussion and reflection of activity.

TEACHER RESOURCES

Background Information:
When the yeast is added to the hydrogen peroxide, the yeast acts as a catalyst, quickly breaking down the hydrogen peroxide to oxygen gas and water. The bubbles form because of the reaction happening quickly and the oxygen then gets trapped by the dish soap bubbles which causes the foaming. This is an Exothermic Reaction and will cause the foam to be warm.

Extension Ideas:

- Watch this video as an introduction or demonstration of the activity. Available at http://iaitc.co/explode.
- Read "Pick a Pumpkin" by Patricia Toht. Dig deeper and learn about where the tradition of carving pumpkins came from.
- Learn about the growth of pumpkins and label a pumpkin diagram or model.
- Have students research the prefix and suffix of the term 'exothermic' and have them come up with a definition of that kind of reaction.
- Have students use our AITC scientific inquiry worksheet and test different variables. What would change the outcome of the foam?
- Where are pumpkins grown? Research geographical locations of pumpkin farmers in the United States and around the world.
    - Did you know that Morton, Illinois, is the Pumpkin Capital of the world? Learn more about Morton pumpkins and what they're grown for.
- Have a 'gourd' time and research other vegetables that are related to pumpkins.
- Squash Bees are very important pollinators for pumpkins! Learn more about squash bees and the process of pollination. Why is it important to protect pollinators? What other agricultural commodities rely on pollinators?
- Learn more about recipes that pumpkins are used for.
- Invite a pumpkin farmer into the classroom to talk about what it takes to grow pumpkins! Have your students prepare questions to ask.
- Take your class to a pumpkin patch to pick out their own pumpkins. Have them take the pumpkins home or paint them for classroom decorations!
- Learn more about yeast-is it alive?
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

Pumpkin Pie In-a-Bag

Math Literacy

Grade Level
K-3

Length of Lesson
45 minutes

Objective
By the end of this activity, students will have a better understanding of where their food comes from.

Materials Needed
- Scissors
- 1 gallon Ziploc® freezer bag
- 1 teaspoon ground cinnamon
- 1/2 teaspoon pumpkin pie spice OR ground ginger
- 2 packages (4 oz serving size) instant vanilla pudding mix
- 1 can (15 oz) 100% pure pumpkin
- 2 2/3 cups cold milk
- Graham cracker crumbs
- 1 can whipped topping
- Spoons (1 per student)
- 3 oz dixie cups (1 per student)

*Recipe makes 26 servings

Standards
Common Core
CCSS.ELA-Literacy.RI.3.1; RI. 3.2

CCSS.Math.Content.3.MD.2

NGSS.
2-PS1-1; 2-PS1-3

Lesson Summary
This lesson is designed to help students have a better understanding of where their food comes from. It will also show students the connection of math and cooking while introducing the importance of nutrition.

Suggested Sequence of Events:
1. Read "From Seed to Pumpkin" by Wendy Pfeffer to capture student interest and to show them how pumpkins grow.
2. Read through AITC Pumpkin Ag Mag to learn more about pumpkins. Interactive online versions can be found on our website.
3. Complete the activity following the procedures:
    - Combine the milk and the instant pudding in the Ziploc bag.
    - Remove the air from the bag and seal it.
    - Squeeze and knead the bag for about 1 minute, until the milk and pudding are combined.
    - Open the bag and add the pumpkin, cinnamon, and pumpkin pie spice.
    - Remove the air and seal the bag again.
    - Squeeze and knead the bag again, this time for about 2 minutes until the spices and pumpkin are well blended.
    - Place 1/2 tablespoon of graham cracker crumbs in the bottom of the dixie cups.
    - Cut the corner of the gallon bag and squeeze the pie filling into the cups.
    - Garnish with whipped topping and add a spoon.
    - Enjoy!
    - Discuss pumpkin production and watch Pumpkins, Gourds, & More! (Harry Kindergarten goes to the pumpkin patch!) while students are eating.
5. Whole class discussion and reflection of activity. Have students discuss whether or not they liked their pumpkin pie. Then, encourage students to share their pumpkin life cycles with their group!

TEACHER RESOURCES

Extension Ideas:

- Ask students if they have ever eaten pumpkin pie before. Was it store bought or homemade? Have them compare and contrast that pumpkin pie with what the pumpkin "pie" you made today.
- Take a closer look at canned pumpkin production.
    - Watch this video about Libby's Pumpkin in Morton Illinois to see how pumpkin goes from farm to can: How Libby's Canned Pumpkin Is Made | TODAY
- Bring in different colored pumpkins or gourds to explain varieties to your students.
- Have students tell a story from a pumpkin's perspective.
- Show a labeled diagram of a pumpkin and/or pumpkin vine. Talk about which part is used for pumpkin pie filling. What are the other parts used for?
- Look into other recipes that use pumpkin pie filling, pumpkin spices, and other pumpkin ingredients.
- Watch a time lapse video of a pumpkin growing.
    - Here is a video of a giant pumpkin growing: Giant Pumpkin Time Lapse.wmv
- Watch a video from a local farmer discussing pumpkin growth and harvest
- Take a field trip to a patch and pick your own pumpkins.
- Invite an pumpkin farmer into the classroom.
- For older students, split them into groups of 4-5 and have them complete this activity with their group. (Make sure to divide measurements by 4-5 to get the correct tasting batch for that size of group!)
- Take it a step further and have certain groups change the measurement of different ingredients and taste test how that affects the pie.
- Make playing cards of the life cycle of a pumpkin and have students race to put it in order.
- Complete our "Pumpkin Chain" activity to learn more about the life cycle of a pumpkin.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

Media Resources:

Use this video to introduce or demonstrate this activity: http://iaitc.co/pieinabag

Notes

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