

## Pumpkin Jack - First Grade

### Purpose

Students will learn how to identify and label the inside and outside of a pumpkin, review the pumpkin life cycle as it relates to the story *Pumpkin Jack*, and determine a pumpkin's density compared to other fruits and vegetables.

### Subject Area(s)

Reading / English Language Arts, Science, and Math

### Common Core/Essential Standard

#### Reading/ English Language Arts

- **RL.1.5** Know and use various text features
- **RL.1.1** Ask and answer questions about key details in text.
- **W.1.7** Participate in shared research and writing projects.

#### Science

- **1.L.1** Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive.

#### Math

- **1.MD.4** Organize, represent, and interpret data with up to three categories.

### Agricultural Literacy Outcomes

- Explain how farmers/ranchers work with the lifecycle of plants and animals (planting/breeding) to harvest a crop.
- Discuss what a farmer does.
- Identify the importance of natural resources (e.g. sun, soil, water, minerals) in farming.
- Describe the importance of soil and water in raising crops and livestock.

### Essential Questions

1. What character in the story can you compare to a farmer? How is Tim like a farmer?
2. What stage of the pumpkin life cycle is evident in each of the four seasons?
3. What natural resources are needed to grow and care for a pumpkin?
4. What are the parts of a pumpkin?
5. Does a pumpkin sink or float?
6. Why are soil and water important for the life cycle of a pumpkin?

### Vocabulary

**Pumpkin:** large, orange-yellow fruit with a thick rind, with many seeds and edible fruit.

**Pumpkin Shell:** outer part of the pumpkin.

**Sprout:** part of the pumpkin growth that emerges from the soil.

**Vines:** lifeline that carries water and nutrients to the pumpkin plant.

**Skin:** thin, shiny outer layer of the pumpkin.

**Seeds:** beginning of next year's pumpkins that are planted to grow new pumpkins.

**Pulp:** "meat" of the pumpkin, and the part used to cook and eat.

**Ribs:** slightly indented ridges on the outside of the pumpkin.

**Fibrous Strands:** what seeds grown from, found inside the cavity of the pumpkin.

**Stem:** located on the top of the pumpkin to bring nutrients to the pumpkin during the growing season.

### Student Motivator

Print the *KWHL Chart* provided in the **Essential Files**. This should be kept on chart paper so that it can be used and posted throughout the entire lesson. Ask the students the following questions and place their answers in the first three columns. The fourth column will be filled in at the conclusion of **Activity 3**.

1. *What I Know.*
  - a. *What do you know about pumpkins?*
  - b. *Have you ever grown a pumpkin?*
  - c. *What does a pumpkin need in order to grow?*
  - d. *Have you ever eaten a pumpkin?*
2. *What I Want to Know.*
  - a. *What did you learn about pumpkins?*
  - b. *What are some characteristics of pumpkins?*
  - c. *What caused the pumpkin to grow in Tim's garden?*
3. *How Can I Learn More?*
  - a. *Where can you find pumpkins?*
  - b. *Who can you ask about pumpkins?*
  - c. *Can you grow a pumpkin this year?*

### Background Knowledge

#### Pumpkin Jack

When Tim carves his first pumpkin, he names it Jack. When it finally begins to decay, he puts it in the garden rather than in the trash bin. As the months go by, Pumpkin Jack grows moldy, sinks into the leaves, hides in the snow, and finally sprouts a new plant. By the next fall, there are plenty of pumpkins for Tim to share at school. He keeps just one for himself and when he finishes carving it, he says, "Welcome back, Jack!" The plant's cycle throughout the seasons is told in this story.

### History of Pumpkins

When the pilgrims arrived in the New World, one of the many interesting discoveries they made was the

Native American's use of pumpkins. Native Americans were growing pumpkins as food for many years before the European explorers arrived. Pumpkins are thought to have originated in Mexico after scientists discovered pumpkin fragments that date back to 7000-5500 BC. Pumpkins belong to the family that includes cucumbers, melons, squash, and gourds. They can weigh anywhere from less than one pound to over 1,100 pounds.

### **Pumpkins in North Carolina**

Pumpkins are considered a minor crop in North Carolina, but many farmers plant one to five acres as a source of additional income. Larger pumpkin growers in North Carolina plant as many as 100 acres of pumpkins. Some of the popular varieties of pumpkins grown in North Carolina include: Mammoth Gold, Autumn Gold, Happy Jack, Big Max, Atlantic Giant, Prize Winner, and Sugar Pie. One of the smaller pumpkins, called Jack-Be-Little is actually a gourd and not a pumpkin. The total pumpkin acreage in North Carolina is between 3,000 and 4,000 acres.

Every year at the North Carolina State Fair, farmers from across the nation (all states are allowed to compete) bring large pumpkins that they have grown for The Giant Pumpkin and Watermelon Contest. The contest includes a weigh-off for the registered pumpkins. The pumpkins have to be moved and loaded very carefully onto industrial scales (scales that measure weight greater than 500lbs) with a forklift. Surprisingly, the largest-sized pumpkin is not always the heaviest. The weight all depends on the density (how compact the insides are) of the pumpkin. There were 17 pumpkin entries at the 2015 North Carolina State Fair. The giant pumpkins even have their own "selfie station" at the fair because so many people stop to take pictures with them.

### **Materials**

#### **Activity 1**

- *Pumpkin Jack* by Will Hubbell
- One medium/large pumpkin
- Clear plastic container, large enough for the pumpkin to fit inside after adding water
- Two or three different fruits/vegetables (tomato, squash, cucumber, and a cantaloupe)
- Sticky notes
- Knife

#### **Activity 2**

- Regular paper plates (for each student)
- Paper plates with circular inside cut out (for each student)
- Brown construction paper
- Orange yarn
- Pumpkin Seeds (can use the seeds from the pumpkin)
- Paint, crayons or markers
- Elmer's Glue

- Stapler
- *Pumpkin Labeling*

### Activity 3

- *Pumpkin Life Cycle Slide Show*
- Shaving Cream
- Elmer’s Glue
- Green construction paper
- Markers/Pens/Colored pencils, all colors are useful, but brown is especially needed
- Thick card stock paper

## Procedures

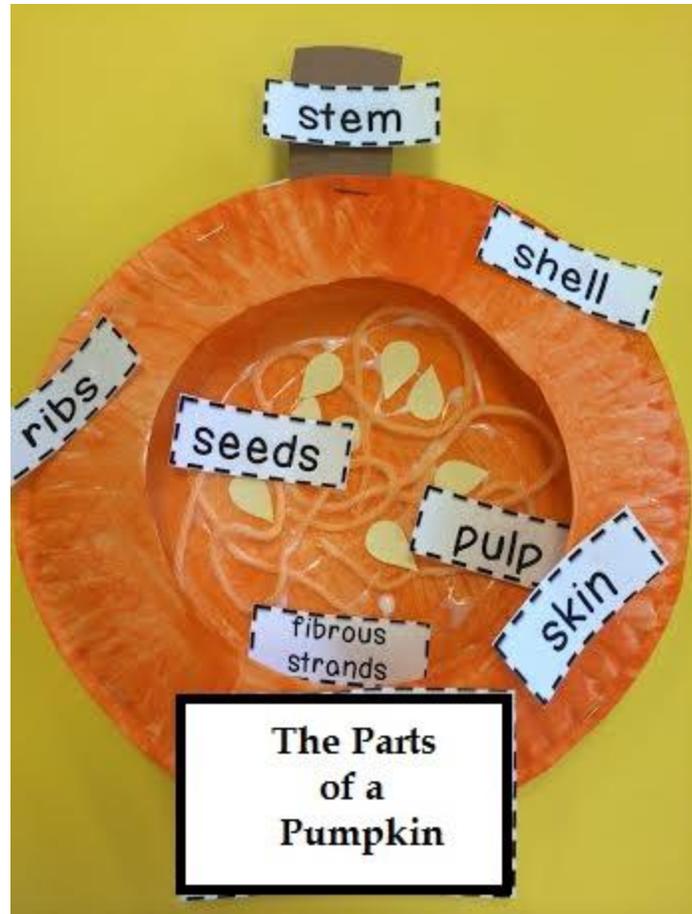
### Activity 1

1. Read and discuss the story *Pumpkin Jack* by Will Hubbell. Questions to ask include:
  - *If “Jack” could talk, what do you think he would say to Tim?*
  - *What parts of the pumpkin do we eat?*
  - *What parts of the pumpkin plant do we eat?*
  - *What parts of the pumpkin do we throw away?*
  - *Should we throw the parts away in the trash or in an old garden like Tim did?*
  - *How did Tim take care of “Jack”?*
  - *Why didn’t he want to put “Jack” in the trash can?*
2. Show students a medium or large size pumpkin. Point out the Pumpkin’s parts and review any vocabulary that relates to the outside of the pumpkin.
3. Have the students predict if it will sink or float. Create a graph for students to record yes or no answers.
4. Discuss the weight of the pumpkin and pass it around for students to hold.
5. Fill the clear plastic container with water. Allow the students to predict the outcome of whether or not the vegetables will float or sink. Experiment with the vegetables to determine if they will sink or float.
6. Allow the students to predict the outcome before each experiment. Once they have seen each vegetable’s experiment, give the students an opportunity to change their answers about the pumpkin before conducting the pumpkin experiment.
7. Allow the students to explain why they want to change their answers, or why they want to keep their answers the same.
8. Conduct the pumpkin experiment, and record the findings. The students can record their results for each vegetable and the pumpkin in their science notebooks.
9. Dry the pumpkin after the experiment, and have students generate a list of all the things on the pumpkin that he/she can label.

10. Use sticky notes to label the pumpkin. *Can you label everything in/on the pumpkin?* The students should answer, “No,” as they cannot label the inside parts.
11. Cut a hole in the top of the pumpkin and ask students to remove the insides. (Remember to keep the seeds for **Activity 2**)
12. Review the vocabulary now that relates to the inside of a pumpkin.

### Activity 2

1. Have students create a Pumpkin “Craftivity” for identifying and labeling the parts of a pumpkin. Refer back to the pictures in *Pumpkin Jack* for clarification.
2. Give students 2 paper plates, 1 that has a cut out of the inside circular portion of a paper plate (inexpensive kind) and a second paper plate with no cut out.
3. Have them paint or color the plates, orange to represent the pumpkin. The inside of the uncut plate needs to be a lighter orange than the plate with the cut out circle. This will help the students understand that the inside of a pumpkin is lighter in color than the outside.
4. Have students use brown construction paper to create a stem.
5. On the **uncut** plate, have students glue 5-6 real pumpkin seeds to the inside of the plate.
6. Have students glue several pieces of orange yarn inside the plate to represent the fibrous strands.
7. Glue or staple the 2 plates together and add the stem so that the seeds and fibrous strands can be seen. Lay the cut out plate over top of the uncut plate.
8. Use brown construction paper to cut out the stem of the pumpkin and glue or staple it to the top of the plates.
9. Print a copy of the *Pumpkin Labeling* sheet for each student and have them label the parts of the pumpkin.



### Activity 3

1. Ask the students, *Is Tim a farmer? How is he like a farmer? What does he do to care for “Jack”? What happened to “Jack” when Tim put him in the garden? What different stages did “Jack” go through in his life?*

2. Create an anchor chart that shows the different life cycles “Jack” went through before he was “thrown away” in the dead garden. Review these stages with your students. Ask, *What changes occurred? How did the appearance of the pumpkin change?* (Seed, sprout, vines, flowers, small pumpkin, larger pumpkin, jack-o-lantern).
3. Use *The Pumpkin Life Cycle Slide Show* to review the pumpkin life cycle with the class.
4. Create a 4-square chart labeled with the 4 seasons. Have the students explain how “Jack” looked during each season.
5. Record the answers on the 4-square chart and allow the students to compare with the pictures drawn on the anchor chart of the pumpkin life cycle.
6. Have the students create their own pumpkin life cycles on a 4-square chart.
  - a. 1<sup>st</sup> Stage- seeds on the ground. Students can glue real pumpkin seeds on their drawing and use a brown marker to show the soil. (**Spring**)
  - b. 2<sup>nd</sup> Stage- Pumpkin seeds sprouting. Have the students use foam or green construction paper to make a sprout coming from brown soil. (**Summer**)
  - c. 3<sup>rd</sup> Stage- Full-grown pumpkin. Have the students paint/cut/draw a full-grown pumpkin. (**Fall**)
  - d. 4<sup>th</sup> Stage- Snowy pumpkin. Mix shaving cream and Elmer’s Glue to create a puff-like foam (½ and ½ mixture). Have the students repeat their pumpkin drawing from the 3<sup>rd</sup> stage in this stage, and then spread the mixture over the top to show the snow on top of the jack-o-lantern, like the story depicts. (**Winter**)
7. Explain to the students that they have created a pumpkin life cycle, similar to what Tim observed in *Pumpkin Jack*.
8. For clarification and to access student knowledge refer the students back to the *KWHL Chart* and have them fill in the last column; *What Have I Learned?*
9. Ask students questions found in the **Essential Questions** to explain what they have learned. Add any additional information to the last column of the *KWHL Chart*.

### Suggested Companion Resources

- Life Cycle of a Pumpkin video  
<https://www.youtube.com/watch?v=GASX1u0zG1g>

### Essential Files

- [KWHL Chart Pumpkin Jack](#)
- [Pumpkin Life Cycle Slide Show](#)
- [Pumpkin Labeling](#)
- [Pumpkin Jack Writing Card \(For extension activity\)](#)

### Ag Facts

- Pumpkins are usually orange but can sometimes be yellow, white, green, or red.
- Pumpkins have thick shells which contain pulp and seeds.

- Pumpkins are usually shaped like a sphere.
- Pumpkin plants feature both male and female flowers. Bees are typically involved in pollination.
- Pumpkin pie is a sweet dessert that originates in North America and is traditionally eaten during harvest time and holidays, such as Thanksgiving, and Christmas.

### Extension Activities

- Have students pretend he/she is Jack. Write a letter to Tim. What would you say to Tim in your letter? Use the *Pumpkin Jack Writing Card* for a letter template.
- Place a medium sized pumpkin in a clear, plastic container (with a lid) and fill the container half full of potting soil. Have the students observe and record the changes that take place inside the container in their science notebooks. Take pictures to create a timeline. The life cycle will continue if there are seeds inside the pumpkin.

### Sources & Credits

- Teacher's Page for Pumpkins  
<http://www.pumpkinnook.com/facts/teacher.htm>
- Anatomy of a Pumpkin  
<http://www.pumpkinnook.com/facts/anatomy.htm>
- North Carolina Department of Agriculture & Consumer Services Horticultural Crops—Pumpkins  
<http://www.ncagr.gov/markets/commodit/horticul/pumpkin/>
- North Carolina State Fair Press Release  
<http://www.ncstatefair.org/2015/Newsroom/releases/MAGiantpumpkin.Tue.htm>