

**October 2019 Chapter Book of the Month**

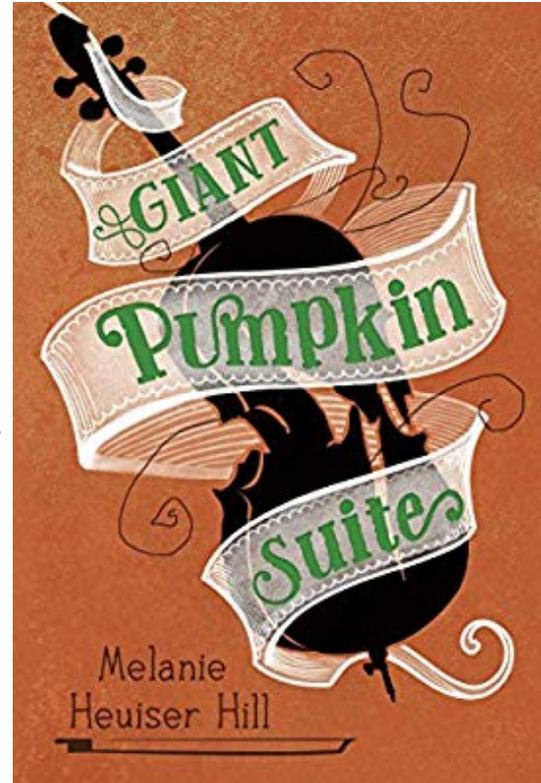
*Giant Pumpkin Suite*

**By: Melanie Heuiser Hill**

Rose and Thomas are twins, but they couldn't look more different, or act more different. Rose is very serious, and Thomas is very playful. When their neighbor suffers an injury, they are asked to carry out an important task—caring for the *C. maxima* seed. Of course, Rose and Thomas have very different ideas about how much time they should spend on their task. Soon their task turns into a summer project, and they're determined to grow a giant pumpkin. They learn about the chemistry, biology, and genetics involved to grow the giant pumpkin. This is a story about friendship, community, and rising above struggles, and how caring for a pumpkin patch can bring everyone together.

**Fun Facts**

- Pumpkins are a native food. Settlers were shown by Native Americans how to plant, grow, and use pumpkins.<sup>1</sup>
- Pumpkins were a staple for Native Americans, who raised pumpkins as one of three main crops—maize(corn), beans, and squash.<sup>1</sup>
- The size and quality of a pumpkin is influenced by many factors, including water, temperature, insects, disease, soil type, soil fertility, pumpkin variety, and weed competition.<sup>1</sup>
- Pumpkins are part of the family of vining plants, *Cucurbitaceae*, that includes cucumbers, squash, gourds, melons, and others.<sup>1</sup>
- Pumpkin patches in North Carolina are a big **agritourism** attraction. Many farms can even out their revenue stream by adding corn mazes, hay rides, and **value added** products.
- Agritourism provides many social benefits, according to a study from NC State University. In the study, farmers considered educating visitors and the public about agriculture, preserving farms and farmland, and improving relationships between farmers and the local community to be important missions for agritourism.<sup>2</sup>



**Discussion Questions**<sup>3</sup>

1. Do you live in a neighborhood with houses up and down your block? Do you live in an apartment building or townhouse? Do you know the people in your neighborhood? By name? And what do you know about them?
2. Are there houses or apartments or townhomes in your neighborhood where you don't know the people who live there? Have you made up stories about who they are? Do you have a made-up name for them or for their home? Describe one or two of those houses.

3. After reading *Giant Pumpkin Suite*, what do you like most about Rose and Thomas's neighborhood? Are there people in their neighborhood that you would like to know better? Why is that so?
4. What do you wish were true about your neighborhood? Have you given thought to how you might make those wishes come true? Is there someone you could ask to help you?
5. Which character in *Giant Pumpkin Suite* would you like to know better? What interests you about them? What could you offer them as a friend?
6. Is there something outside of school that you are passionate about doing? (Prompt: a craft, music, reading, gardening, sewing...) Why do you think Rose felt so passionately about playing her cello? Can you compare how you feel to the way Rose feels?
7. Thomas didn't have something he was passionate about until he tried growing a giant pumpkin. Why do you think he was so fascinated with his project?
8. Do you have someone in your life like Mr. Pickering or Mrs. Holling? What makes them important to you?
9. Rose and Thomas don't know Mrs. Kiyo when the book begins but they had imagined several things about her. What did they find out about her that surprised them?
10. How do you feel about Calamity Jane and her brothers? Why did Rose react to Calamity Jane in the way she did? What's going on with Jane's brothers? Is there someone in your neighborhood or school with whom you suspect you might be better friends?
11. Have you read *Charlotte's Web* by E.B. White? Why do you think Rose cherished this book so much? How do you feel about the sleight-of-hand she pulled with the book? Why did the book matter so much to Jane? Do you have a book that you feel this way about?
12. Do you enjoy classical music? How were you introduced to it? Have you listened to Bach? What do you imagine Rose finds so interesting about Bach? (You might like to bring a recording of Bach's cello suites to class for those who aren't familiar with his work.)
13. Are you a tap dancer? Do you do any kind of dance? Why do you think Jane Jacobi tap dances so much? (You might show a YouTube video of tap dancing to the class.)
14. Have you done any gardening? What is your favorite part of gardening? What don't you care about while gardening?
15. Have you ever been around a giant pumpkin? At a fair near you? Or a special event for giant pumpkin growers? Can you share your experience?
16. What is it about Rose that makes her so human? Do you like her more or less by the end of the book? Explain.
17. At one point Mama tells Rose, "You are twelve and you're living the life of an intensely focused middle-aged woman." And yet Rose has a goal that she's working very hard to accomplish. Do you think Mama's advice was fair?
18. Mr. Pickering shares with Rose that his wife was awful at playing the bassoon. But she enjoyed it nonetheless. "Rose, you may have yet to discover the joy of doing something *badly*. I'm here to tell you, it can be a lot of fun. As they say, anything worth doing is worth doing badly." Is there something you do that you suspect you do badly, but you enjoy doing it? What did Mr. Pickering mean by this?
19. Thomas is an important character. Why does he matter so much to the telling of this story?

20. Why do you think Rose made the choice to use the table saw? Have you ever done anything like this? Did it turn out badly or well?
21. Why did Rose hear loud music after she was injured? And then why didn't she hear any music inside of her head for a long time? What woke up her ability to hear music once again? Did that surprise you?
22. When we first meet Harris Waldenstein, he's not very likeable, do you agree? When Kirk reveals some of Maestro Waldenstein's background, his story, do we understand him better? By the end of the book do we think he might be likeable?
23. What clues do we have along the way that Mr. Letch might not be what he claims to be? Why do you think the author lets us in on his untrustworthiness?
24. Have you ever been to a large fair like the North Carolina State Fair, or the Minnesota State Fair described in *Giant Pumpkin Suite*? What were the sights, sounds, and tastes of the Fair that you remember?
25. Were you expecting the extent of Mr. Letch's treachery? What were the possible outcomes with Mr. Letch revealed what the prize was? Would you have been as confident as Rose and Jane and Thomas were to take the pumpkin home with them?
26. Do you think this book has a "happily ever after" ending? What was satisfying for you? What more would you like to know about Rose and Thomas and their neighborhood?

### **Types of Pumpkins**

On page 63 of *Giant Pumpkin Suite*, Gram lists off several types of pumpkins. Have students make a list of the types she mentions (pie pumpkins, white pumpkins, small pumpkins, etc.) and using reliable research tools, research the varieties of pumpkins that have each specific trait. For example, a type of white pumpkin is the variety, 'Full Moon.' Can all of these varieties grown in North Carolina? How you do know? Why or why not?

### **Latitude, Longitude, and Hemispheres**

On page 64 of *Giant Pumpkin Suite*, Thomas talks about the number of summer hours in New Zealand being similar to the summer hours of Minnesota, and says it has something to do with latitude. What does he mean by this? Explain the relationship of latitude and longitude to hemispheres, and how that affects sunlight. What place on earth is similar to North Carolina in summer hours, but in a different hemisphere? Or what place on earth is similar to North Carolina on a different continent, but in the same hemisphere?

### **Calculating Probability**

Rose "saves" the group at the Fair because she understands how probability works. Following along in Chapter 50 (pages 380-387), jot down the probability problems that Rose works through in her head. It might be helpful to draw diagrams of the fair game. Show how she got her answers.

### **Vermicomposting<sup>4</sup>**

In *Giant Pumpkin Suite*, the pumpkin growers had to make the garden an ideal place for the pumpkins to grow. They used composting and vermicomposting methods to create healthy soil. In this activity, the

class will create a worm bin which will serve as a basis for investigations about ecosystems, life and nutrient cycles, and decomposition.

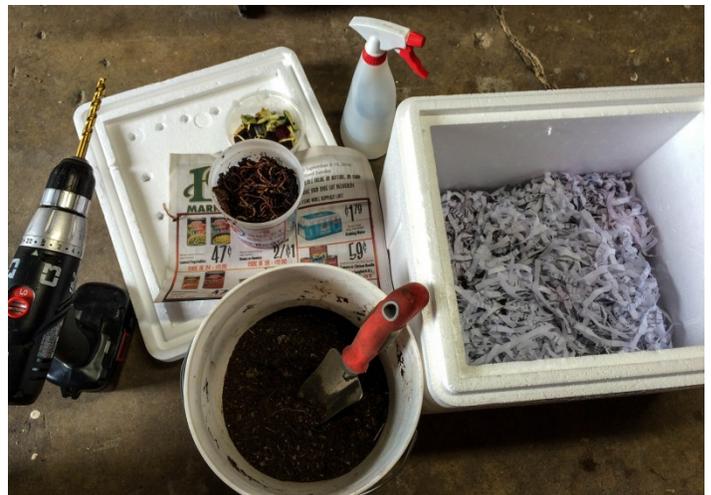
1. Ask the students what the word *recycling* means. Make a list of items they have recycled before.
2. Ask the students if food can be recycled. Tell them to imagine they are in the cafeteria at their school. Have them try to think of ways they can use the leftover food being thrown away to make something else. (This question will probably bring interesting responses.)
3. Ask the students what happens to leaves in the forest during the winter. (*They fall to the ground.*) Ask them why the leaves that fall from the trees every year don't just pile up higher and higher. (*They break down/decompose and become part of the soil.*) Explain that food can be recycled in the same way plants are recycled in the environment. Tell them that they will recycle their leftovers into a special soil that will help give plants the nutrients they need. The secret is worms.
4. Tell the students that they are going to build a worm bin to serve as a home for worms that will be kept in the classroom to observe and study.
5. Show them the worms that will be added to the bin, and allow them to find a worm and look at it closely. Tell the group that these red wiggler worms are especially suited for composting food scraps inside an indoor bin.

#### Materials:

- Recycled styrofoam cooler (Styrofoam coolers are used to ship medicine that needs to stay cold. Many doctors, dentists, and veterinarians receive several coolers each month. The coolers are often thrown away after the shipment is received. Consider asking a local medical office to save one for your classroom.)
- Drill with a large bit
- Shredded paper
- 2-3 full pages of paper
- Soil
- Spray bottle filled with water
- Vegetable scraps
- Red wiggler worms

#### Procedures:

1. Prior to class, drill ventilation holes in the cooler lid. Have a vacuum cleaner handy—this can be messy!
2. Ask the students what kind of environment they think worms need to be comfortable and healthy. (They will probably say worms need soil to live in.) Explain that the worms you have are a special kind that don't burrow deep into the soil. Red wiggler worms prefer to live near the surface of the soil where they have lots of organic matter to eat. They need protection from the sunlight but don't like to be deep in heavy soil. Explain to the students that they will be making them a home out of newspaper strips.
3. Have the students rip newspaper into inch-wide strips to use as bedding for the worms.



4. As the students are ripping the newspaper, discuss the importance of moisture, air, and temperature in the worm bin.
5. Fill the cooler about half full with shredded paper. Wet the shredded paper until it is uniformly damp but not dripping. It should feel like a well wrung-out towel. Explain to the students that worms breathe through their moist skin. If they dry out, they can't breathe. However, if the bin gets too wet there may not be enough oxygen for the worms.
6. Mix the soil with the shredded paper. A couple of scoops with a trowel is plenty. The soil should be moist, but not muddy. Explain to the students that worms don't have teeth. The hard mineral particles in the soil will help break down food in the worm's gut. Soil also contains microorganisms that will help jump-start the composting process.
7. Add the red wiggler worms on top, and watch as they burrow down to get away from the light.
8. Add vegetable scraps as food for the worms. Begin with one cup or less. It will take the worms some time to acclimate to their new home and develop an appetite. Feed the worms as needed. Worms can survive on paper alone but will readily devour many other foods. Discuss with the students the kinds of foods that worms like to eat. They like newspaper, but the glossy pages aren't good for them. They like most food scraps, especially from fruits, vegetables, and grains. They also like coffee grounds and filters, tea bags, fallen leaves, eggshells, weeds, and lawn clippings. It is best not to feed them meat, dairy, or foods that contain a lot of fat. Avoid overfeeding to prevent odors. As the population begins to grow, the worms will eat more.
9. Place full pages of paper on top of the soil and spritz with water until the paper is damp. Place the lid on top, and store the bin where it won't get too hot or too cold. Check the moisture level regularly. The top sheets of paper will help keep the bin contents moist; when they get dry, spritz the upper layer of the bin with water. The worms need moisture to live, but the bin may begin to stink if it gets too wet. If this happens, simply add shredded paper to absorb the excess moisture.
10. Discuss the important things that worms do to keep the soil healthy:
  - Worms burrow in the soil. The burrows and trails that they leave help the soil absorb and hold water. This is important for plants that need water to grow. The burrows and trails also make it easy for plant roots to grow into the soil. When the soil is full of worm burrows and plant roots, it is less likely to wash away or erode when it rains.
  - Worms eat organic matter like dead leaves. The castings that come out the back end of a worm after it has digested its food are full of nutrients and microorganisms that are good for plants and for the soil. Worms eat dead plants and other waste and turn them into food for living plants. Worms act as nature's recyclers and make the soil fertile.
11. Discuss the importance of soil as a natural resource that is necessary for the production of our food. Almost everything that we eat, much of what we wear, and many of the tools that we use originate from plants grown in soil on a farm. See the lesson plan [The Soil Chain](#) (full url in **Links** section) for hands-on activities to teach about the importance of soil.

### **Worm Investigations<sup>4</sup>**

The worms and castings from your worm bin can be used to engage students in a wide variety of investigations. A few possibilities are described below. While worms are out of the bin, keep a spray bottle handy to prevent the worms from drying out.

1. Observe the effect worms have on soil.
  - Gather the following materials: two jars, lids with holes, dark soil, light sandy soil, water, vegetable scraps, two pieces of dark paper, and tape.
  - In the bottom of each jar, put a layer of dark soil about one inch thick. On top of this, place a one-inch thick layer of light sandy soil. Keep adding dark, then light layers until the jar is half-full.
  - Slightly moisten the soil in both jars with water.
  - Place two worms in one jar, and then add some vegetable scraps to the top of both jars.
  - Put a lid on each jar. Label the jar with the worms as “Worms” and label the other jar “No Worms.”
  - Take the dark pieces of paper and wrap around each jar. Tape tightly. Put the jars aside.
  - Have each student write down their predictions about what they think will happen in each jar.
  - After three days unwrap the jars. What do you observe?
2. Observe the characteristics of living worms.
  - Divide the students into cooperative groups.
  - Place a few worms on a tray covered with a damp newspaper for each group.
  - Allow the students to observe their worms moving around on the tray.
  - Have the students sketch a worm, measure how long it is, record how it moves and any kind of noise made as it moves.
  - Have the students discuss which end is the head and which is the tail. Have them give observable evidence to justify their reasoning.
  - Encourage the students to gently pick up a worm and describe what it feels like on their hands.
  - After allowing the students to make their initial observations, gather the trays, and return the worms to the bin or continue with more of the following investigations.
3. Investigate worms’ responses to light and touch stimulus.
  - Have the students predict the worms’ responses to light from a flashlight and to being gently touched with a chenille stem. Have them justify their predictions.
  - Put the worms on trays and give one to each group.
  - Shine a flashlight directly onto the worms and observe their behaviors.
  - Gently touch the worms with a chenille stem that has a small loop at that end and observe their behaviors.
  - Allow 5-10 minutes for the students to observe the worms’ behaviors. Have the students record their observations with an explanation for the worms’ behaviors.
4. Investigate worms’ responses to barrier stimulus.
  - Give each group several items to act as barriers (a pencil, a clothespin, a block of wood, a crumbled piece of paper or a pile of soil, etc.).
  - Have the students predict the worms’ responses to these barriers. Will they initially go around a barrier? Crawl over it? Burrow underneath it? Try to keep going forward? Go backwards? Will their responses differ for different barriers? Have the students justify their predictions.

- Give each group a tray and have the students arrange three or four barriers on it.
  - Place several worms on the tray.
  - Allow 5-10 minutes for the students to observe the worms' behaviors. Have the students record their observations with an explanation for the worms' behaviors.
5. Investigate worms' responses to temperature stimulus.
- The day before this activity, place several slightly damp paper towels in a freezer. Place layers of waxed paper in between the damp paper towels for easy separation.
  - Prior to this activity, slightly moisten several paper towels and leave them at room temperature.
  - Just before this activity, place several slightly damp paper towels in a microwave to heat them.
  - Have the students predict how the worms will react to a cold surface, a room-temperature surface, and a hot surface and then justify their predictions.
  - Give each group a tray and a cold, a hot, and a room-temperature paper towel.
  - Place several worms on each paper towel.
  - Allow 5-10 minutes for the students to observe the worms' behaviors. Have the students record their observations with an explanation for the worms' behaviors.
6. Investigate the effect of the vermicompost on plant growth.
- Depending on the resources available, try growing seeds with differing amounts of vermicompost added or adding different amounts of compost to plants growing in the garden.
  - Have the students predict which amounts of compost will produce the best results.
  - Observe changes in the plants for two to four weeks and have the students use tape measures to record growth.

## Links

- Uses for Pumpkins (video)  
<https://www.youtube.com/watch?v=7j17iyl634g>
- Libby's 100% Pure Pumpkin from farm to can (video)  
<https://www.youtube.com/watch?v=Hft-zbqxeLM>
- Pumpkin—How Does it Grow? (video)  
[https://www.youtube.com/watch?time\\_continue=223&v=I3cc2QeSfWw](https://www.youtube.com/watch?time_continue=223&v=I3cc2QeSfWw)
- The Soil Chain (lesson plan)  
[https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=144&search\\_term\\_lp=soil%2520chain](https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=144&search_term_lp=soil%2520chain)

## Sources

1. [https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=131&author\\_state=0&search\\_term\\_lp=pumpkins](https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=131&author_state=0&search_term_lp=pumpkins)
2. <https://content.ces.ncsu.edu/how-beneficial-is-agritourism-north-carolina-farmers-and-residents-respond>
3. [https://www.melaniehuserhill.com/images/pdfs/Hill\\_GPS\\_Discussion\\_Questions.pdf](https://www.melaniehuserhill.com/images/pdfs/Hill_GPS_Discussion_Questions.pdf)
4. [https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=510&author\\_state=0&search\\_term\\_lp=composting](https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=510&author_state=0&search_term_lp=composting)

## 3-8 Subject Areas

Reading and Science

## Common Core/Essential Standards

### Reading

- **RL.3.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the **basis for** the answers.
- **RL.4.1** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RL.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RL.6.1** Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- **RL.7.1** Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- **RL.8.1** Cite textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
- **RL.4.2** Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- **RL.5.2** Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.
- **RL.6.2** Determine a theme of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- **RL.7.2** Determine a theme of a text and analyze its development over the course of the text; provide an objective summary of the text.
- **RL.8.2** Determine a theme of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.
- **RL.4.3** Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text.
- **RL.5.3** Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text.
- **RL.6.3** Describe how a particular story’s or drama’s plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.
- **RL.7.3** Analyze how particular elements of a story or drama interact.
- **RL.8.3** Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.
- **RI.4.1** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RI.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RI.6.1** Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- **RI.7.1** Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- **RI.8.1** Cite textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
- **RI.4.2** Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- **RI.5.2** Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
- **RI.6.2** Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- **RI.7.2** Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.
- **RI.8.2** Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.

### Science

- **3.L.2.2** Explain how environmental conditions determine how well plants survive and grow.
- **3.L.2.4** Explain how the basic properties (texture and capacity to hold water) and components (sand, clay and humus) of soil determine the ability of soil to support the growth and survival of many plants.
- **4.L.1.1** Give examples of changes in an organism’s environment that are beneficial to it and some that are harmful.

- **4.L.1.2** Explain how animals meet their needs by using behaviors in response to information received from the environment.
- **5.L.2.2** Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors).
- **5.L.2.3** Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem.
- **6.L.2.3** Summarize how the abiotic factors (such as temperature, water, sunlight, and soil quality) of biomes (freshwater, marine, forest, grasslands, desert, Tundra) affect the ability of organisms to grow, survive and/or create their own food through photosynthesis.