The Jefferson Performing Arts Society

Presents

James and the Giant Peach

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Based on the book James and the Giant Peach by Roald Dahl

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When James is sent by his conniving aunts to chop down their old fruit tree, he discovers a magic potion which results in a tremendous peach - and launches a journey of enormous proportions.

This JPAS Study Companion provides students with opportunities to explore the text of James and the Giant Peach and the math behind set and costume design. In Character Explorations, students will first delve into the characters of Aunt Sponge and Aunt Spiker and then analyze some of the insect characters depicted in the story. Using Roald Dahl as inspiration, this lesson will also give students an opportunity to create their own characters. One of the characters in James and the Giant Peach is a centipede. In The Science and Math of Centipede Feet students will learn the science of real-life centipedes and then use math to figure out information about the boots Roald Dahl’s Centipede is wearing. Art, Math and Set Design: Calculating Circumference will introduce students to the art of Nancy Ekholm Burkert, original illustrator of James and the Giant Peach, and the initial process of developing a set design. In this lesson we will explore the art of Nancy Ekholm Burkert and her sources of inspiration and explore some of the math behind creating the giant peach. In Plot the Course of the Peach students explore the journey of the peach. In the opening chapters of James and the Giant Peach, once the peach attains colossal size (thanks to the help of a magic potion) it is cut from the tree by James and the Centipede and rolls on a journey. This lesson explores the first part of the journey, from the garden to the Atlantic Ocean, and then gives students the opportunity to pilot the peach and plot their own course.
At this point, James slowly put down his chopper and turned and looked across at the two women, who were standing underneath the peach tree. Something is about to happen, he told himself. Something peculiar is about to happen at any moment. He hadn't the faintest idea what it might be, but he could feel it in his bones that something was going to happen soon. He could feel it in the air around him...in the sudden stillness that had fallen upon the garden...

And James Henry Trotter, who once, if you remember, had been the saddest and loneliest little boy that you could find, now had all the friends and playmates in the world. And because so many of them were always begging him to tell and tell again the story of his adventures on the peach, he thought it would be nice if one day he sat down and wrote a book. So he did. And that is what you have just finished reading.

Narrator, Ch. 39, p. 146

Narrator, Ch. 6, p. 18 (RETRIEVED FROM: http://www.gradesaver.com/james-and-the-giant-peach/study-guide/quotes)
Louisiana Educational Content Standards and Benchmarks

The arts facilitate interconnection. They provide tangible, concrete opportunities for students and teachers to explore academic concepts. The arts are even more critical now with the introduction of Louisiana Common Core. Common Core is replacing the system of Grade Level Expectations and Standards and Benchmarks previously used to measure student achievement. Here is some background information on Louisiana Common Core:

**COMMON CORE STATE STANDARDS**

Academic standards define the knowledge and skills that students are expected to learn in a subject in each grade. In 2010, Louisiana adopted Common Core State Standards in English language arts and math. The Common Core State Standards define what students need to learn in reading, writing and math in each grade to stay on track for college and careers. Please visit this site for more information:

http://www.louisianabelieves.com/academics/louisiana-student-standards-review

All Common Core connections were retrieved from:


The Story and Background
James and the Giant Peach Summary

James and the Giant Peach was written in 1961 and was well received by the public. Originally titled James and the Giant Cherry, the book was given a new name because Dahl deemed a peach to be "prettier, bigger and squishier than a cherry." The text was originally illustrated by Nancy Ekholm Burkert, but later editions featured other illustrators. James and the Giant Peach was Dahl's second published narrative for children, but the book contains references to stories that he later wrote and published, such as Charlie and the Chocolate Factory, Charlie and the Great Glass Elevator, and The BFG.

As Dahl's novel begins, the reader is introduced to James, a young boy who is orphaned when his parents are eaten by a rhinoceros. James is consequently sent to live with his two aunts, Aunt Sponge and Aunt Spiker. These relatives are very cruel to him, and he is incredibly lonely, since he has no friends yet longs to play with children his own age. But on one particularly hard day, James's luck changes: an Old Man appears in the backyard garden and offers James a packet of magical green objects. If James follows a set of specific instructions (says the Old Man), something spectacular will happen. James is very excited, but as he runs back to his house to execute the instructions, he trips and the magical green objects burrow into the ground. James is incredibly upset, but as he begins to resume his chores, he hears his aunts shouting.

James soon discovers the source of the commotion: a peach has begun to grow on a top branch of a previously barren peach tree. As the three of them watch, the peach becomes larger and larger, until it is bigger than the aunts' entire house. Seeking to capitalize on this strange event, Aunt Sponge and Aunt Spiker set up a fence and begin charging admission to see the peach. They forbid James from interfering, fearing that he will ruin their profit-making scheme. The night after the first day of visitors, James sneaks out of the house to visit the peach. He sees a hole at the bottom of the peach, and he realizes that this hole is the opening to a tunnel. He begins to crawl through, and he eventually enters the hollow peach pit at the center of the fruit.

When James enters the pit's inner chamber, he meets an odd assortment of creatures, who initially intimidate him: Miss Spider, Centipede, Earthworm, Old-Green-Grasshopper, and others. The next day James and his new companions begin their journey away from Aunt Sponge and Aunt Spiker. Centipede cuts the peach away from its tree and the peach begins to roll, flattening everything in its way - including Aunt Sponge and Aunt Spiker, who are killed. The peach then rolls off of a cliff several miles away and lands in the Atlantic Ocean.

From this point forward, James and his friends face a series of obstacles. They must escape attacking sharks, evade the Cloud-Men and their anger, and settle internal disputes. James asserts himself as the leader and frequently saves the day. When sharks attack, he has his companions fasten ropes to nearby seagulls, then to the stem of the peach, the peach rises out of the water and begins flying through the air. After one day of flying, James and his friends realize that they have flown across the entire Atlantic - they can now see New York City below them.

They begin to cut the seagull strings one-by-one, when suddenly a passenger plane flies above them and cuts all of the lines at once. Their gradual descent into the city is ruined and they begin to sink rapidly. Everyone holds on for dear life, thinking death is imminent, but they land safely on the pinnacle of the Empire State Building. After explaining their situation to the New York City policemen and firemen, James and his friends are brought to street level and are welcomed lavishly. The city throws a parade in their honor, and by the end of the parade the entire peach has been eaten by local children, who want to taste the giant fruit.
After the parade, James and his friends live happily ever after. The remaining peach pit is set up as a monument in Central Park, and James lives inside of it. So many children visit him, hoping to hear his story, that he decides to write a book about the journey. The book that he wrote is the book that the reader has just read.


… a little additional info …

In 1953 Dahl married the actress Patricia Neal; they had three children, to whom he began to tell bedtime stories. James and the Giant Peach, the first of these to reach print, is a comic fantasy about a small boy who travels the world inside a huge peach, in company with several giant insects. Like most of Dahl’s children’s books, it first appeared in print in the United States. When editor Virginie Fowler first read the work, she wrote to the author, “If this doesn’t become a little classic, I can only say that I think you will not have been dealt with justly.” When Tim Burton approached Roald Dahl’s widow about his plan to make a film of James and the Giant Peach, she asked him why he wanted to do it. Burton’s answer clinched the deal: “It’s the only book that ever gave me any hope when I was a child.”

As for the illustrator Nancy Eckholm Burkert, “Burkert works in a tradition of artists for whom book illustration is one of the fine arts like painting or sculpture… Her drawings are not a secondary accompaniment to words, but a primary and integral part of the book experience in which she is an equal partner with the writer” (Michael Danoff). James and the Giant Peach was her first illustrated children’s book.
Great Missenden

Roald Dahl lived in Great Missenden for 36 years, weaving features of the village into many of his stories. The Roald Dahl Village Trail is a good way to look around, to visit Dahl’s grave and to identify the models for such memorable places as Sophie’s ‘norphanage’ in The BFG or the library visited by Matilda while her mum went off to Aylesbury to play bingo. Choices for refreshment in the High Street range from Café Twit to the 16th century Cross Keys.

What to see in Great Missenden

The new Cycle Chilterns Bike Hub at Great Missenden is just half an hour by train from London and has great cycling of all kinds on the doorstep; National Cycle Network route 57 goes through the centre of the village close to the Roald Dahl museum and the Chilterns Cycleway is a few miles away. Stage 6 of the Friends Life Tour of Britain will also pass through the village on 12th September after the infamous Kop Hill climb. A wide variety of cycle route maps and places to visit are available on the Cycle Chilterns website.
Roald Dahl Museum and Story Centre – established here in Roald Dahl's home village, the centre inspires young visitors (aged 6-12) with hands-on story-telling activities and the story of Dahl's own life and work. As well as the interactive Story Centre, there are two fun-filled, fact-packed galleries, plus a new gallery which includes Roald Dahl's original Writing Hut. There are more rooms for craft activities and story telling sessions – and Café Twit.

Gipsy House – the garden of Roald Dahl's former home in Great Missenden opens periodically under the National Gardens Scheme. Dahl built his writing hut in the garden, on the edge of the wildflower meadow, and it was here that he wrote his entire collection of children's stories. The small garden is full of interesting features, such as the greenhouse containing James's giant peaches, the caravan from Danny, The Champion of the World and the small children's yew and boxwood maze, with paths carved with quotations from Dahl's books.

RETRIEVED FROM: http://www.visitchilterns.co.uk/market-towns/great-missenden.html

Great Missenden on the Map
Character Explorations
Overview

Learning objective
- To explore metaphors and similes in the descriptions of Aunt Sponge and Aunt Spiker.

Learning outcome
- A description of a new character using metaphors and similes.

Book reference
- Pre-reading of chapters 1 and 2.

Cross-curricular link
- Literacy, Art, Drama.

Resources
- Objects or pictures of a pig, a sponge, a witch, a cabbage.

Starter

- Read the following extract from the book aloud.
- As they listen to the descriptions, the children draw the way they imagine the characters to look and label it with quotes from the text.

“Aunt Sponge was enormously fat and very short. She had small piggy eyes, a sunken mouth and one of those white flabby faces that looked exactly as though it had been boiled. She was like a great white soggy overboiled cabbage. Aunt Spiker, on the other hand, was lean and tall and bony, and she wore steel-rimmed spectacles that fixed on to the end of her nose with a clip. She had a screeching voice and long wet narrow lips, and whenever she got angry or excited, little flecks of spit would come shooting out of her mouth as she talked. And there they sat, these two ghastly hags, sipping their drinks, and every now and again screaming at James to chop faster and faster. They also talked about themselves, each one saying how beautiful she thought she was.”
Main teaching activity

- Show the students a picture of a spike.
- As a class, create a mindmap of associative words around the picture, using these questions:
  - What can a spike do?
  - Where might we see spikes?
  - How would you feel if you saw this spike in front of you?
- What might the spike tell us about the type of person Aunt Spiker is?
- Show objects or pictures of a pig, a sponge, a witch/hag and a cabbage to continue the discussion.
- Elicit more ideas associated with each word to add more dimensions to the discussion; for example, pigs are greedy, an overboiled cabbage wouldn’t smell very nice: witches/hags cast spells on people.
- Pairs could be allocated one picture each and then feedback ideas.

Group or independent activity

- Working in pairs, the children create another awful aunt for James, following these questions:
  - If the aunt was an animal, what animal would she be? Why?
  - If the aunt was a vegetable, what vegetable would she be? Why?
  - If the aunt was a thing, what thing would she be? Why?
  - What does she do and what does she talk about? Why?
  - What is the aunt’s name? (you could use one of your above answers to help you) Explain your answer.
- Independently, the children draw a picture of the new Aunt and write some words to describe her around the picture.
Plenary

- Pairs present their aunts to the rest of the class.

Extension

- The awful aunts are put in a hotseat in turn. The rest of the class ask the hotseated aunt questions in order to find out more about their character.
- The class vote for the most awful aunt.
- Read to the end of Chapter 2, looking at the dialogue and the way Aunt Sponge and Aunt Spiker speak to James ("you disgusting little worm") in groups of 3 or 4, the children role play a continuation of the scene. This could show Aunt Spiker, Aunt Sponge and James and could also include the new aunt.
JPAS James and the Giant Peach:

Creating Characters

By Karel Sloane-Boekbinder

In the opening chapters of *James and the Giant Peach*, James is given a bag of “…a mass of tiny green things…” that contain “…more power and magic in those things in there than in all the rest of the world put together.” This lesson gives students opportunities to consider these wonderful bits of magic and then conceive how that can create their own.

Begin by reading the following passages from *James and the Giant Peach* by Roald Dahl. These passages include an introduction as well as a list of ingredients.

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*James and the Giant Peach*

*A Children's Story*

by Roald Dahl

illustrated by Nancy Ekholm Burkert

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*About the Author*

Roald Dahl is the author of some of the finest and most widely read children's books ever published, including *Charlie and the Chocolate Factory*, *James and the Giant Peach*, and *Danny the Champion of the World*. He is also celebrated for his wonderfully wicked short stories for adults.
JAMES AND THE GIANT PEACH

James didn't know where the little man came from. He was just there, thrusting a faintly glowing bag at James. "Here! You take it! It's yours!" With a promise that the bag of "little green things" is magic and will free James from life with his horrible, cruel aunts, Sponge and Spiker, the little man is gone -- and James is dizzy with joy. But in his excitement James drops the bag and the magic is lost, sucked into the ground around the old peach tree. Would things never go right for James?

But then he feels it. Something is going to happen. Aunt Spiker spots it first: a peach growing high in their single peach tree. Growing and growing till it's as big as fat Aunt Sponge, and then as big as their house! All greedy Sponge and Spiker can think is that the remarkable peach will make them rich. But James knows. Something else, something stranger than ever this time, is about to happen to me again soon.

"With his new family of centipedes, ladybugs, glowworms and grasshoppers in his enormous juicy dwelling, James heads for exciting adventures with Cloudmen, sharks, and a ticker tape parade in New York City. . . Here is a broad fantasy with all the gruesome imagery of old-fashioned fairy tales and a good measure of their breathtaking delight." -- Kirkus

"In the most original fantasy that has been published in a long time, (Roald Dahl) tempers his imagination just enough to write a story that may well become a classic. The story. . . and the illustrations make this a gem." -- San Francisco Chronicle

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Here is James Henry Trotter when he was about four years old.

Up until this time, he had had a happy life, living peacefully with his mother and father in a beautiful house beside the sea. There were always plenty of other children for him to play with, and there was the sandy beach for him to run about on, and the ocean to paddle in. It was the perfect life for a small boy.

Then, one day, James’s mother and father went to London to do some shopping, and there a terrible thing happened. Both of them suddenly got eaten up (in full daylight, mind you, and on a crowded street) by an enormous angry rhinoceros which had escaped from the London Zoo.

Now this, as you can well imagine, was a rather nasty experience for two such gentle parents. But in the long run it was far nastier for James than it was for them. Their troubles were all over in a jiffy. They were dead and gone in thirty-five seconds flat. Poor James, on the other hand, was still very much alive, and all at once he found himself alone and frightened in a vast unfriendly world. The lovely house by the seaside had to be sold immediately, and the little boy, carrying nothing but a small suitcase containing a pair of pajamas and a toothbrush, was sent away to live with his two aunts.

Their names were Aunt Sponge and Aunt Spiker, and I am sorry to say that they were both really horrible people. They were selfish and lazy and cruel, and right from the beginning they started beating poor James for almost no reason at all. They never called him by his real name, but always referred to him as “you disgusting little beast” or “you filthy nuisance” or “you miserable creature,” and they certainly never gave him any toys to play with or any picture books to look at. His room was as bare as a prison cell.

They lived -- Aunt Sponge, Aunt Spiker, and now James as well -- in a queer ramshackle house on the top of a high hill in the south of England. The hill was so high that from almost anywhere in the garden James could look down and see for miles and miles across a marvelous landscape of woods and fields; and on a very clear day, if he looked in the right direction, he could see a tiny gray dot far away on the horizon, which was the house that he used to live in with his beloved mother and father. And just beyond that, he could see the ocean itself -- a long thin streak of blackish-blue, like a line of ink, beneath the rim of the sky.
But James was never allowed to go down off the top of that hill. Neither Aunt Sponge nor Aunt Spiker could ever be bothered to take him out herself, not even for a small walk or a picnic, and he certainly wasn't permitted to go alone. "The nasty little beast will only get into mischief if he goes out of the garden." Aunt Spiker had said. And terrible punishments were promised him, such as being locked up in the cellar with the rats for a week, if he even so much as dared to climb over the fence.

The garden, which covered the whole of the top of the hill, was large and desolate, and the only tree in the entire place (apart from a clump of dirty old laurel bushes at the far end) was an ancient peach tree that never gave any peaches. There was no swing, no seesaw, no sand pit, and no other children were ever invited to come up the hill to play with poor James. There wasn't so much as a dog or a cat around to keep him company. And as time went on, he became sadder and sadder, and more and more lonely, and he used to spend hours every day standing at the bottom of the garden, gazing wistfully at the lovely but forbidden world of woods and fields and ocean that was spread out below him like a magic carpet.
It was at this point that the first thing of all, the rather peculiar thing that led to so many other much more peculiar things, happened to him.

For suddenly, just behind him, James heard a rustling of leaves, and he turned around and saw an old man in a crazy dark-green suit emerging from the bushes. He was a very small old man, but he had a huge bald head and a face that was covered all over with bristly black whiskers. He stopped when he was about three yards away, and he stood there leaning on his stick and staring hard at James.

When he spoke, his voice was very slow and creaky. "Come closer to me, little boy," he said, beckoning to James with a finger. "Come right up close to me and I will show you something wonderful."

James was too frightened to move.

The old man hobbled a step or two nearer, and then he put a hand into the pocket of his jacket and took out a small white paper bag.

"You see this?" he whispered, waving the bag gently to and fro in front of James's face. "You know what this is, my dear? You know what's inside this little bag?"

Then he came nearer still, leaning forward and pushing his face so close to James that James could feel breath blowing on his cheeks. The breath smelled musty and stale and slightly mildewed, like air in an old cellar.

"Take a look, my dear," he said, opening the bag and tilting it toward James. Inside it, James could see a mass of tiny green things that looked like little stones or crystals, each one about the size of a grain of rice. They were extraordinarily beautiful, and there was a strange brightness about them, a sort of luminous quality that made them glow and sparkle in the most wonderful way.

"Listen to them!" the old man whispered. "Listen to them move!"

James stared into the bag, and sure enough there was a faint rustling sound coming up from inside it, and then he noticed that all the thousands of little green things were slowly, very very slowly stirring about and moving over each other as though they were alive.

"There's more power and magic in those things in there than in all the rest of the world put together," the old man said softly.

"But -- but -- what are they?" James murmured, finding his voice at last. "Where do they come from?"

"Ah-ha," the old man whispered. "You'd never guess that!" He was crouching a little now and pushing his face still closer and closer to James until the tip of his long nose was actually touching the skin on James's forehead. Then suddenly he jumped back and began waving his stick madly in the air. "Crocodile tongues!" he cried. "One thousand long slimy crocodile tongues boiled up in the skull of a dead witch for twenty days and nights with the eyeballs of a lizard! Add the fingers of a young monkey, the gizzard of a pig, the beak of a green parrot, the juice of a porcupine, and three spoonfuls of sugar. Stew for another week, and then let the moon do the rest!"

All at once, he pushed the white paper bag into James's hands, and said, "Here! You take it! It's yours!"
James Henry Trotter stood there clutching the bag and staring at the old man.

"And now," the old man said, "all you've got to do is this. Take a large jug of water, and pour all the little green things into it. Then, very slowly, one by one, add ten hairs from your own head. That sets them off! It gets them going! In a couple of minutes the water will begin to froth and bubble furiously, and as soon as that happens you must quickly drink it all down, the whole jugful, in one gulp. And then, my dear, you will feel it churning and boiling in your stomach, and steam will start coming out of your mouth, and immediately after that, marvelous things will start happening to you, fabulous, unbelievable things -- and you will never be miserable again in your life. Because you are miserable, aren't you? You needn't tell me! I know all about it! Now, off you go and do exactly as I say. And don't whisper a word of this to those two horrible aunts of yours! Not a word! And don't let those green things in there get away from you either! Because if they do escape, then they will be working their magic upon somebody else instead of upon you! And that isn't what you want at all, is it, my dear? Whoever they meet first, be it bug, insect, animal, or tree, that will be the one who gets the full power of their magic! So hold the bag tight! Don't tear the paper! Off you go! Hurry up! Don't wait! Now's the time! Hurry!"

With that, the old man turned away and disappeared into the bushes.
Once these passages have been read, write down the list of ingredients where everyone can see them, such as a dry –erase board, Promethean board or ELMO.

Next discuss the old man’s warning:

> Now, off you go and do exactly as I say. And don’t whisper a word of this to those two horrible aunts of yours! Not a word! And don’t let those green things in there get away from you either! Because if they do escape, then they will be working their magic upon somebody else instead of upon you! And that isn’t what you want at all, is it, my dear? Whoever they meet first, be it bug, insect, animal, or tree, that will be the one who gets the full power of their magic! So hold the bag tight! Don’t tear the paper! Off you go! Hurry up! Don’t wait! Now’s the time! Hurry!”

Explain that this is an example of foreshadowing:

*Foreshadowing often appears at the beginning of a story or a chapter and helps the reader develop expectations about the coming events in a story. There are various ways of creating a foreshadowing. A writer may use dialogues of characters to hint at what may occur in future. In addition, any event or action in the story may throw a hint to the readers about future events or action. Even a title of a work or a chapter title can act as a clue that suggests what is going to happen. Foreshadowing in fiction creates an atmosphere of suspense in a story so that the readers are interested to know more.*

Ask students to list the things foreshadowed in the old man’s warning (*whoever they meet first--bug, insect, animal or tree.*) Write down the list where everyone can see them, such as a dry –erase board, Promethean board or ELMO. Consider the following questions with students

1) What does this list of things hint at—what things in James’ garden are going to be magically transformed?

2) How is the title of the story, **James and the Giant Peach**, also an example of foreshadowing?

Next, discuss what happens when the little green things “…work their magic.”

Begin by reading the following passage with the class:
It was quite a large hole, the sort of thing an animal about the size of a fox might have made. James knelt down in front of it and poked his head and shoulders inside. He crawled in. He kept on crawling.  
This isn't just a hole, he thought excitedly. It's a tunnel!

The tunnel was damp and murky, and all around him there was the curious bittersweet smell of fresh peach. The floor was soggy under his knees, the walls were wet and sticky, and peach juice was dripping from the ceiling. James opened his mouth and caught some of it on his tongue. It tasted delicious.

He was crawling uphill now, as though the tunnel were leading straight toward the very center of the gigantic fruit. Every few seconds he paused and took a bite out of the wall. The peach flesh was sweet and juicy, and marvelously refreshing.

He crawled on for several more yards, and then suddenly -- bang -- the top of his head bumped into something extremely hard blocking his way. He glanced up. In front of him there was a solid wall that seemed at first as though it were made of wood. He touched it with his fingers. It certainly felt like wood, except that it was very jagged and full of deep grooves.

"Good heavens!" he said. "I know what this is! I've come to the stone in the middle of the peach!"

Then he noticed that there was a small door cut into the face of the peach stone. He gave a push. It swung open. He crawled through it, and before he had time to glance up and see where he was, he heard a voice saying, "Look who's here!" And another one said, "We've been waiting for you!"

James stopped and stared at the speakers, his face white with horror. He started to stand up, but his knees were shaking so much he had to sit down again on the floor. He glanced behind him, thinking he could bolt back into the tunnel the way he had come, but the doorway had disappeared. There was now only a solid brown wall behind him.
James's large frightened eyes traveled slowly around the room. The creatures, some sitting on chairs, others reclining on a sofa, were all watching him intently. Creatures? Or were they insects? An insect is usually something rather small, isn't it? A grasshopper, for example, is an insect. So what would you call it if you saw a grasshopper as large as a dog? As large as a large dog. You could hardly call that an insect, could you? There was an Old-Green-Grasshopper as large as a large dog sitting on a stool directly across the room from James now.

And next to the Old-Green-Grasshopper, there was an enormous Spider. And next to the Spider, there was a giant Ladybug with nine black spots on her scarlet shell. Each of these three was squatting upon a magnificent chair.

On a sofa nearby, reclining comfortably in curled-up positions, there was a Centipede and an Earthworm. On the floor over in the far corner, there was something thick and white that looked as though it might be a Silkworm. But it was sleeping soundly and nobody was paying any attention to it.

Every one of these "creatures" was at least as big as James himself, and in the strange greenish light that shone down from somewhere in the ceiling, they were absolutely terrifying to behold.

"I'm hungry!" the Spider announced suddenly, staring hard at James.

"I'm famished!" the Old-Green-Grasshopper said.

"So am I!" the Ladybug cried.

The Centipede sat up a little straighter on the sofa. "Everyone's famished!" he said. "We need food!"

Four pairs of round black glassy eyes were all fixed upon James.

The Centipede made a wriggling movement with his body as though he were about to glide off the sofa -- but he
There was a long pause -- and a long silence.
The Spider (who happened to be a female spider) opened her mouth and ran a long black tongue delicately over her lips. "Aren't you hungry?" she asked suddenly, leaning forward and addressing herself to James.

Poor James was backed up against the far wall, shivering with fright and much too terrified to answer.

"What's the matter with you?" the Old-Green-Grasshopper asked. "You look positively ill!"

"He looks as though he's going to faint any second," the Centipede said.

"Oh, my goodness, the poor thing!" the Ladybug cried. "I do believe he thinks it's him that we are wanting to eat!" There was a roar of laughter from all sides.

"Oh dear, oh dear!" they said. "What an awful thought!"

"You mustn't be frightened," the Ladybug said kindly. "We wouldn't dream of hurting you. You are one of us now, didn't you know that? You are one of the crew. We're all in the same boat."

"We've been waiting for you all day long," the Old-Green-Grasshopper said. "We thought you were never going to turn up. I'm glad you made it."

"So cheer up, my boy, cheer up!" the Centipede said.
James decided that this was most certainly not a time to be disagreeable, so he crossed the room to where the Centipede was sitting and knelt down beside him.

"Thank you so much," the Centipede said. "You are very kind."

"You have a lot of boots," James murmured.

"I have a lot of legs," the Centipede answered proudly. "And a lot of feet. One hundred, to be exact."

"There he goes again!" the Earthworm cried, speaking for the first time. "He simply cannot stop telling lies about his legs! He doesn't have anything like a hundred of them! He's only got forty-two! The trouble is that most people don't bother to count them. They just take his word. And anyway, there is nothing marvelous, you know, Centipede, about having a lot of legs."

"Poor fellow," the Centipede said, whispering in James's ear. "He's blind. He can't see how splendid I look."

"In my opinion," the Earthworm said, "the really marvelous thing is to have no legs at all and to be able to walk just the same."

"You call that walking?" cried the Centipede. "You're a slitherer, that's all you are! You just slither along!"

"I glide," said the Earthworm primly.

"You are a slithery beast," answered the Centipede.

"I am not a slithery beast," the Earthworm said. "I am a useful and much loved creature. Ask any gardener you like. And as for you . . ."

"I am a pest!" the Centipede announced, grinning broadly and looking round the room for approval.

"He is so proud of that," the Ladybug said, smiling at James. "Though for the life of me I cannot understand why."

"I am the only pest in this room!" cried the Centipede, still grinning away. "Unless you count Old-Green-Grasshopper over there. But he is long past it now. He is too old to be a pest any more."

The Old-Green-Grasshopper turned his huge black eyes upon the Centipede and gave him a withering look. "Young fellow," he said, speaking in a deep, slow, scornful voice, "I have never been a pest in my life. I am a musician."

"Hear, hear!" said the Ladybug.

"James," the Centipede said. "Your name is James, isn't it?"

"Yes."

"Well, James, have you ever in your life seen such a marvelous, colossal Centipede as me?"

"I certainly haven't," James answered. "How on earth did you get to be like that?"

"Very peculiar," the Centipede said. "Very, very peculiar indeed. Let me tell you what happened. I was messing about in the garden under the old peach tree and suddenly a funny little green thing came wriggling past my nose. Bright green it was, and extraordinarily beautiful, and it looked like some kind of a tiny stone or crystal . . ."

"Oh, but I know what that was!" cried James.

"It happened to me, too!" said the Ladybug.

"And me!" Miss Spider said. "Suddenly there were little green things everywhere! The soil was full of them!"

"I actually swallowed one!" the Earthworm declared proudly.

"So did I!" the Ladybug said.

"I swallowed three!" the Centipede cried. "But who's telling this story anyway? Don't interrupt!"

"It's too late to tell stories now," the Old-Green-Grasshopper announced. "It's time to go to sleep."

"I refuse to sleep in my boots!" the Centipede cried. "How many more are there to come off, James?"

"I think I've done about twenty so far," James told him.

"Then that leaves eighty to go," the Centipede said.
"Twenty-two, not eighty!" shrieked the Earthworm. "He's lying again."

The Centipede roared with laughter.

"Stop pulling the Earthworm’s leg," the Ladybug said.

This sent the Centipede into hystericis. "Pulling his leg!" he cried, wriggling with glee and pointing at the Earthworm. "Which leg am I pulling? You tell me that?"

James decided that he rather liked the Centipede. He was obviously a rascal, but what a change it was to hear somebody laughing once in a while. He had never heard Aunt Sponge or Aunt Spiker laughing aloud in all the time he had been with them.

"We really must get some sleep," the Old-Green-Grasshopper said. "We've got a tough day ahead of us tomorrow. So would you be kind enough, Miss Spider, to make the beds?"

A few minutes later, Miss Spider had made the first bed. It was hanging from the ceiling, suspended by a rope of threads at either end so that actually it looked more like a hammock than a bed. But it was a magnificent affair, and the stuff that it was made of shimmered like silk in the pale light.

"I do hope you'll find it comfortable," Miss Spider said to the Old-Green-Grasshopper. "I made it as soft and silky as I possibly could. I spun it with gossamer. That's a much better quality thread than the one I use for my own web."

"Thank you so much, my dear lady," the Old-Green-Grasshopper said, climbing into the hammock. "Ah, this is just what I needed. Good night, everybody. Good night." Then Miss Spider spun the next hammock, and the Ladybug got in.

After that, she spun a long one for the Centipede, and an even longer one for the Earthworm.

"And how do you like your bed?" she said to James when it came to his turn. "Hard or soft?"

"I like it soft, thank you very much," James answered.

In addition to the transformation of the peach tree, the little green magic things also transform a grasshopper, spider, lady bug, earthworm, glow worm, silk worm and centipede. Consider the following terms from the passage with the students:

**Colossal, desolate, extraordinary, famished, ghastly, grope, hammock, mammoth, withering**

Write each term one at a time where everyone can see them, such as a dry –erase board, Promethean board or ELMO. After each term is written, ask the students to define it; record the definitions next to the term. If students are unable to define a term, read the definition from the **James and the Giant Peach Glossary** sheet, discuss it and record it. As each term is discussed, ask students to describe how it relates to the peach, grasshopper, spider, lady bug, earthworm, and centipede; each term may relate to many characters, only relate to one, or not relate to any.

Explain that in the passages the students have read, Roald Dahl uses another literary device—he uses magic to make the insects anthropomorphic. Define this term for students by adding it to the list of terms and discussing the definition.
anthropomorphic

adjective an-thro-po-mor-phyck \ˌan(t)-θrə-pə-ˈmər-fik\

: described or thought of as being like human beings in appearance, behavior, etc.

: considering animals, objects, etc., as having human qualities

Discuss the traits Roald Dahl gives to each of the insects. Next to the terms written on the dry erase board, Promethean board or ELMO, write the name for each creature and space to describe its external and internal characteristics. Ask students to reflect on each character.

Grasshopper
External characteristics
Internal characteristics

Spider
External characteristics
Internal characteristics

Lady bug
External characteristics
Internal characteristics

Earthworm
External characteristics
Internal characteristics

Centipede
External characteristics
Internal characteristics
As part of the reflection, explain that external characteristics are what we see on the outside—how a person, place or thing appears. External characteristics describe how something looks. Internal characteristics are a character’s thoughts and feelings—they are revealed by what a character says or does—their dialogue or actions. Record the students’ responses on the dry-erase board, Promethean board or ELMO.

Next, using Roald Dahl’s *James and the Giant Peach* as inspiration, explain that students are going to create their own recipe for a magic potion and then select a garden creature (insect, bird or animal) that will be transformed by this magic potion. Encourage students to use some of the vocabulary from *James and the Giant Peach* (colossal, desolate, extraordinary, famished, ghastly, mammoth, withering) to describe the external and internal characteristics of their anthropomorphic creature. Distribute the following materials to each student:

- JPAS *James and the Giant Peach* Magic Potion Sheet
- *James and the Giant Peach* Glossary
- Character Traits list
- Character Traits Internal/External sheet

Have students begin with the JPAS *James and the Giant Peach* Magic Potion Sheet. As a class, first review the ingredients written down on the dry-erase board, Promethean board or ELMO. Then review the passage from *James and the Giant Peach* that lists the preparation of the ingredients:

“Crocodile tongues!” he cried. “One thousand long slimy crocodile tongues boiled up in the skull of a dead witch for twenty days and nights with the eyeballs of a lizard! Add the fingers of a young monkey, the gizzard of a pig, the beak of a green parrot, the juice of a porcupine, and three spoonfuls of sugar. Stew for another week, and then let the moon do the rest!”

Ask students to think of and write down five of their own original ingredients (something different from Roald Dahl.) To prepare the potion, Roald Dahl writes that the ingredients were boiled, stewed and left in the moonlight. Ask students to think of and write down three original ways they could prepare their ingredients (something different from Roald Dahl.)

Next, ask students to choose a garden creature they can make anthropomorphic, such as a dragon fly, beetle, butterfly, squirrel, etc. Ask students to review the Character Traits list and reflect on how their magic potion will make this garden creature anthropomorphic. While, they are reflecting, ask them to complete the Character Traits Internal/External sheet.
# J.P.A.S. James and the Giant Peach: Magic Potion Sheet

## Ingredients

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## NAME__________________

## Preparation:

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James and the Giant Peach Glossary

colossal
(adj.) extremely large

Ex: I have made a colossal mistake.

desolate
(adj.) deserted of people and in a state of bleak and dismal emptiness

Ex: We may see a Creature with 49 heads who lives in the desolate snow.

extraordinary
(adj.) very unusual or remarkable, often in a positive sense

Ex: It was extraordinary when the peach grew to such a large size.

famished
(adj.) extremely hungry

Ex: After James entered the peach, all the creatures told him how famished they were.

ghastly
(adj.) causing great horror or fear; frightful or macabre; extremely unwell

Ex: She was overcome with horror at the ghastly spectacle.

grope
(v.) feel about or search blindly or uncertainly with one's hands

Ex: They groped around frantically, trying to find something to hold onto in order to weather the storm.

hammock
(n.) a bed made of canvas or rope mesh and suspended by cords at the ends, commonly used as garden furniture or on board a ship

Ex: The Centipede opened his eyes, ambled across the room, and crawled into his hammock to go to bed.

mammoth
(n.) a large extinct elephant of the Pleistocene epoch, typically hairy with a sloping back and long curved tusks

(adj.) enormous or gigantic

Ex: In another minute, this mammoth fruit was as large and round and fat as Aunt Sponge herself, and probably just as heavy.
withering
(adj.) 1: (of heat) intense, scorching 2: (of remarks, criticism, or other interactions) intended to make someone feel mortified or humiliated

Ex: The Old-Green-Grasshopper turned his huge black eyes upon the Centipede and gave him a withering look.

Character Traits

active  considerate  grouchy  mysterious  silly
adventurous  cooperative  happy-go-  nervous  sincere
affectionate  courageous  lucky  noisy  skillful
afraid  cowardly  hateful  obedient  sly
ambitious  critical  hopeful  obnoxious  smart
anxious  cruel  hopeless  observant  sneaky
argumentative  curious  humorous  optimistic  snobbish
bewildered  daring  ignorant  peaceful  sociable
bossy  dependable  imaginative  persistent  stingy
brave  determined  immature  pessimistic  strict
brilliant  dishonest  impatient  picky  stubborn
calm  disrespectful  impolite  pleasant  studious
bully  eager  impulsive  polite  sweet
capable  easy-going  independent  proud  talented
careful  efficient  insistent  puzzled  talkative
caring  energetic  intelligent  quick  thoughtful
charismatic  enthusiastic  jealous  quiet  thoughtless
charming  fair  jovial  reliable  timid
coward  faithful  lazy  respectful  trusting
clever  fidgety  logical  responsible  trustworthy
clumsy  fierce  lonely  restless  unfriendly
cold-hearted  foolish  lovable  rowdy  versatile
compasionate  friendly  loving  rude  warm-hearted
competitive  funny  loyal  sarcastic  wise
teamed  generous  lucky  secretive  witty
teenaged  gentle  mature  selfish  worried
confident  gloomy  mean  self-reliant  conscientious

RETRIEVED FROM: https://www.pinterest.com/explore/teaching-character-traits/
### Character Traits

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<th>Name:</th>
<th>Date:</th>
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**External (Outside) Traits**
What you see on the outside.

**Internal (Inside) Traits**
Thoughts, feelings, actions, and dialogue.

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<th>Character’s Name:</th>
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**Character’s Name:**

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**Character’s Picture:**

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English Language Arts Standards » Literacy Standards » Grade 3

Research to Build and Present Knowledge

W.3.7: Conduct short research projects that build knowledge about a topic.

W.3.8: Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

English Language Arts Standards » Literacy Standards » Grade 4

Key Ideas and Details

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.4.2: Determine a theme of a story, drama, or poem from details in the text; summarize 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 (e.g., a character’s thoughts, words, or actions).

Integration of Knowledge and Ideas

RL.4.7: Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.

Text Types and Purposes

W.4.1: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
Key Ideas and Details

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.

Integration of Knowledge and Ideas

Research to Build and Present Knowledge

W.9-10.7: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

W.9-10.1: Draw evidence from literary or informational texts to support analysis, reflection, and research.
Centipede puppet, created by “Uncle” Wayne Daigrepont for the JPAS production of James and the Giant Peach.

In the JPAS production of James and the Giant Peach, the insect characters appear in two different sizes, smaller versions as puppets and then larger versions, played by JPAS Theatre Kids actors. Shirlee Idzakovich is the Costume Designer for the JPAS production of James and the Giant Peach. Shirlee Idzakovich and “Uncle” Wayne Daigrepont collaborated to create designs that are proportional. This means that each puppet corresponds in size (and, in the case of Centipede, amount) to the costume worn by the actor. “Uncle” Wayne Daigrepont’s Centipede puppet and Shirlee Idzakovich’s Centipede costume both have six segments. Each segment has one leg on each side.

How many legs does the Centipede in the JPAS production of James and the Giant Peach have?
The name “centipede” suggests these insects have a lot of legs. “Centi” combined with other words means “hundredth” or “hundred;” it is used in the formation of compound words: centiliter; centimeter; centipede. The word “centi” comes from Latin, the combining form of centum. In reality, centipedes have between 15 pairs and 171 pairs of legs. In this lesson, students will read a short text from Roald Dahl’s *James and the Giant Peach*, learn a little about real-life centipedes and calculate information about Roald Dahl’s Centipede using information he provides in his book.

Begin by placing the following passages where everyone can see them, such as an overhead projector, Promethean board or ELMO. Read the passages aloud as a class.

"There he goes again!" the Earthworm cried, speaking for the first time. "He simply cannot stop telling lies about his legs! He doesn't have anything like a hundred of them! He's only got forty-two! The trouble is that most people don't bother to count them. They just take his word. And anyway, there is nothing marvelous, you know, Centipede, about having a lot of legs."

James worked away frantically on the Centipede's boots. Each one had laces that had to be untied and loosened before it could be pulled off, and to make matters worse, all the laces were tied up in the most terrible complicated knots that had to be unpicked with fingernails. It was just awful. It took about two hours. And by the time James had pulled off the last boot of all and had lined them up in a row on the floor -- twenty-one pairs altogether -- the Centipede was fast asleep. Next, explore facts about real centipedes.
10 Fascinating Facts About Centipedes

Debbie Hadley
Insects Expert

Interesting Behaviors and Traits of Centipedes

The front pair of a centipede's legs are modified into poison-filled fangs, capable of subduing prey.

Though centipedes inhabit almost every corner of the Earth, most people don't know much about the "hundred leggers." The house centipede sometimes startles people by showing up in bathtubs or sinks, but this is only one of an estimated 8,000 species in the Class Chilopoda. Want to learn more about them? Here are 10 cool facts about centipedes.

1. Centipedes are the only arthropods known to have "poison claws" for subduing prey.
   The legs of the centipede's first segment are not for walking. Instead, they're modified to form venomous fangs, which they use to inject paralyzing venom into prey. These special appendages are known as forcipules, and are unique to centipedes.

2. Centipedes do not have 100 legs.
   Though their common name means "one hundred legs," centipedes can have significantly less or more than 100 legs. Depending on the species, a centipede can have as few as 15 pairs of legs, or as many as 171 pairs. Regardless of the species, centipedes always have an odd number of leg pairs, so they never have exactly 100 legs (because 50 pairs is an even number).
3. **Centipedes have one pair of legs per body segment.**
   This is the easiest way to differentiate centipedes and millipedes. Millipedes have two pairs of legs on most body segments, but centipedes always have a single pair of legs per segment. Not sure what you've found? Just count how many pairs of legs on a segment.

4. **All centipedes are predators.**
   Though some will occasionally scavenge a meal, centipedes are primarily hunters. Smaller centipedes will catch other invertebrates, including insects, mollusks, annelids, and even other centipedes. The larger species, which inhabit the tropics, can consume frogs or even small birds. The centipede will usually wrap itself around the prey and wait for the venom to take effect before consuming the meal.

5. **Centipedes can live for several years.**
   Compared to most arthropods, centipedes are relatively long-lived critters. It's not unusual for a centipede to live 2-3 years, and some survive longer than 5 years. Centipedes continue to molt and grow as adults, unlike insects, which complete their growth when they reach adulthood.

6. **Centipedes can regenerate lost legs.**
   Should a centipede find itself in the grip of a bird or other predator, it can often escape by sacrificing a few legs. The bird is left with a beak full of legs, and the clever centipede makes a fast escape on those that remain. Since centipedes continue to molt as adults, they can usually repair the damage by simply regenerating legs. If you find a centipede with a few legs that are shorter than the others, it's likely in the process of recovering from a predator attack.

7. **Some centipedes care for their young.**
   You probably wouldn't expect a centipede to be a good mother, but a surprising number of them dote on their offspring. Female soil centipedes (order Geophilomorpha) and tropical centipedes (order Scolopendromorpha) lay an egg mass in underground an burrow. The mother wraps her body around the eggs, and remains with them until they hatch, protecting them from harm.

8. **Most centipedes are built for speed.**
   With the exception of the slow-moving soil centipedes, which are built to burrow, Chilopods can run fast! A centipede's body is suspended between a cradle of long legs. When those legs start moving, this gives the centipede more maneuverability over and around obstacles, as it flees predators or chases prey. The tergites – the dorsal surface of the body segments – may also be modified to keep the body from swaying while in motion.

9. **Some centipedes add leg pairs as they develop.**
   Though many centipedes hatch from their eggs with a full complement of leg pairs, certain kinds of Chilopods start life with less legs than their parents. Stone centipedes (order Lithobiomorpha) and house centipedes (order Scutigeromorpha) start out with as as few as 14 legs, but add pairs with each successive molt until they reach adulthood.

10. **Centipedes are prone to dehydration.**
    Arthropods often have a waxy coating on the cuticle to help prevent water loss, but centipedes lack this waterproofing. Most centipedes live in moist environments, like under leaf litter or in damp, rotting wood. Those that inhabit deserts or other arid environments will often modify their behavior to minimize the risk of dehydration. They may delay activity until seasonal rains arrive, or when the humidity rises, for example, and diapause during the hottest, driest spells.
Now, using the overhead projector or ELMO, review the passage about Centipede from Roald Dahl’s book *James and the Giant Peach*. Next, continuing to use the overhead projector or ELMO, begin to investigate how difficult it was for James to untie Centipede’s show laces. Distribute copies of the two information sheets from “Ian’s Shoelace Site” and the JPAS Centipede Feet Calculation Sheet. Using the information sheets from “Ian’s Shoelace Site” ask students to compete the JPAS Centipede Feet Calculation Sheet.
<table>
<thead>
<tr>
<th>Horizontal Spacing Across the Shoe</th>
<th>Narrow 25 mm (1 inch)</th>
<th>Medium 50 mm (2 inches)</th>
<th>Wide 75 mm (3 inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 pairs of eyelets / lugs</td>
<td>60 cm (24&quot;)</td>
<td>70 cm (28&quot;)</td>
<td>80 cm (32&quot;)</td>
</tr>
<tr>
<td>3 pairs of eyelets / lugs</td>
<td>60 cm (24&quot;)</td>
<td>80 cm (32&quot;)</td>
<td>100 cm (39&quot;)</td>
</tr>
<tr>
<td>4 pairs of eyelets / lugs</td>
<td>70 cm (28&quot;)</td>
<td>90 cm (35&quot;)</td>
<td>110 cm (43&quot;)</td>
</tr>
<tr>
<td>5 pairs of eyelets / lugs</td>
<td>80 cm (32&quot;)</td>
<td>100 cm (39&quot;)</td>
<td>130 cm (51&quot;)</td>
</tr>
<tr>
<td>6 pairs of eyelets / lugs</td>
<td>80 cm (32&quot;)</td>
<td>110 cm (43&quot;)</td>
<td>140 cm (55&quot;)</td>
</tr>
<tr>
<td>7 pairs of eyelets / lugs</td>
<td>90 cm (35&quot;)</td>
<td>120 cm (47&quot;)</td>
<td>160 cm (63&quot;)</td>
</tr>
<tr>
<td>8 pairs of eyelets / lugs</td>
<td>90 cm (35&quot;)</td>
<td>130 cm (51&quot;)</td>
<td>170 cm (67&quot;)</td>
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<tr>
<td>9 pairs of eyelets / lugs</td>
<td>100 cm (39&quot;)</td>
<td>140 cm (55&quot;)</td>
<td>190 cm (75&quot;)</td>
</tr>
<tr>
<td>10 pairs of eyelets / lugs</td>
<td>100 cm (39&quot;)</td>
<td>150 cm (59&quot;)</td>
<td>200 cm (79&quot;)</td>
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</tbody>
</table>

Use this table if you have a shoe and you want to find out the approximate shoelace length needed.

RETRIEVED FROM: [http://www.fieggen.com/shoelace/approximatelengths.htm](http://www.fieggen.com/shoelace/approximatelengths.htm)
Approximate Shoelace Lengths

Shoelaces are often supplied to fit a certain number of eyelets (eg. 6-8). This is a **VERY** rough way to estimate the required length, as shoes can vary widely. Allowing for the shoe width, or using my approximation formula, gives much better results.

Length Approximation Formula

The above tables were worked out using my [Shoelace Length Calculator](https://ianstokeyes.com/ShoelaceLengthCalculator), which uses some fairly exact formulas. However, it's not always convenient to look up this web site, nor to carry a printout of the above tables.

The alternative is my **Shoelace Length Approximation Formula**:

\[
\text{Horizontal Spacing (in mm)} \times \text{Total Eyelets} + 500 \text{ mm}
\]

For example, on a typical sneaker with a horizontal spacing of 50 mm and with six pairs of eyelets (12 eyelets total), the approximate shoelace length would calculate as follows:

\[
50 \text{ mm} \times 12 \text{ (eyelets)} = 600 \text{ mm}, + 500 \text{ mm} = 1,100 \text{ mm} \ (110 \text{ cm})
\]

Note that this approximation will generally come up a little short. For slightly better accuracy, add about 3 mm to the horizontal spacing measurement:

\[
50 + 3 = 53 \text{ mm}, \times 12 \text{ (eyelets)} = 636 \text{ mm}, + 500 \text{ mm} = 1,136 \text{ mm} \ (114 \text{ cm})
\]

For shoes with lugs instead of eyelets, add the lug width to the horizontal spacing measurement.

For example, if the lug width is 8 mm:

\[
50 + 3 = 53 \text{ mm}, \times 12 \text{ (eyelets)} = 636 \text{ mm}, + 500 \text{ mm} + 8 \text{ mm} = 1,154 \text{ mm} \ (117.4 \text{ cm})
\]
For example, on a typical sneaker with a horizontal spacing of 50 mm and with five pairs of lugs (10 lugs total), and with each lug about 8 mm wide, the approximate shoelace length would calculate as follows:

\[
\begin{align*}
50 + 8 &= 58 \text{ mm}, \times 10 \text{ (lugs)} = 580 \text{ mm}, + 500 \text{ mm} = 1,080 \text{ mm} (108 \text{ cm})
\end{align*}
\]

Finally, for shoes with BOTH eyelets and lugs, add a proportion of the lug width to the horizontal spacing measurement. For example, a boot may have two pairs of eyelets and six pairs of lugs for a total of eight pairs of "holes". This means that 3/4 of the total are lugs, thus only 3/4 of the lug width should be added. With a horizontal spacing of 50 mm and a lug width of 8 mm, we would add 3/4 of the lug width (6 mm). The approximate shoelace length then calculates as follows:

\[
\begin{align*}
50 + 6 &= 56 \text{ mm}, \times 16 \text{ (holes)} = 896 \text{ mm}, + 500 \text{ mm} = 1,396 \text{ mm} (140 \text{ cm})
\end{align*}
\]

**NOTE:** For those who still use imperial measurements, use 2 inches instead of 50 mm, 20 inches instead of 500 mm, and 1/8 inch instead of 3 mm.

RETRIEVED FROM: [http://www.fieggen.com/shoe/approximate-lengths.htm](http://www.fieggen.com/shoelace/approximatelengths.htm)
If he has 42 feet, and each foot has a boot, and each boot has eight eyelets, how many pairs of eyelets all together are on Centipedes' boots?

If each of the Centipede's boots is size medium, that means the width between each eyelet is 50 mm (2 inches.) If each eyelet is a medium, using the chart above, how long do the shoelaces need to be for each boot?

How many millimeters of shoelace does centipede need all together?
How many inches of shoelace does centipede need all together?

Roald Dahl tells us it took James two hours to undo all the knots in Centipede’s shoelaces. If there are 42 boots and each boot had one “terrible complicated knot” that took the same amount of time to untie, how much time did James spend on untying each knot?

If he has 42 feet, and each foot has a boot, and each boot has 10 eyelets, how many pairs of eyelets all together are on Centipedes’ boots? If each boot has 12 eyelets
James and the Giant Peach Text RETRIEVED FROM:
http://www.abss.k12.nc.us/cms/lib02/NC01001905/Centricity/Doma
in/3797/James%20and%20the%20Giant%20Peach%20Electronic.pdf

Definition of “Centi” RETRIEVED FROM: http://dictionary.reference.com/brow
se/centi-

Information about centipedes retrieved from:
http://insects.about.com/od/centipedesmillipedes/a/10-Facts-About-Centipedes.htm
Mathematics Standards » Literacy Standards » Grade 1

Operations and Algebraic Thinking 1.OA

A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Measurement and Data 1.MD

A. Measure lengths indirectly and by iterating length units.

1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.

Mathematics Standards » Literacy Standards » Grade 4

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems.

2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Measurement and Data 4.MD

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. **Represent measurement quantities using diagrams** such as number line diagrams that feature a measurement scale.

5. Recognize angles as geometric shapes that are formed wherever two

Mathematics » Grade 7

The Number System 7.NS

d. Apply properties of operations as strategies to add and subtract rational numbers.

Expressions and Equations 7.EE

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Mathematics Standards » Algebra II

Linear, Quadratic, and Exponential Models★ F-LE

A. Construct and compare linear, quadratic, and exponential models and solve problems.

B. Interpret expressions for functions in terms of the situation they model.

5. Interpret the parameters in a linear, quadratic, or exponential function in terms of a context.
Art, Math and Set Design: Calculating Circumference

By Karel Sloane-Boekbinder

Images of JPAS Set Design by Kristin Blatchford

Set designers use many things as their inspiration to design and construct sets. This inspiration also requires research. Inspiration for set designs can come from research of particular time periods, vintage photographs, paintings, genres of visual art and the works of particular visual artists. To create the sets for James and the Giant Peach, JPAS Set Design by Kristin Blatchford used the art of Nancy Ekholm Burkert as inspiration. Nancy Ekholm Burkert was the original illustrator of James and the Giant Peach. The JPAS production of James and the Giant Peach includes five production sets and three painted backdrops. All are inspired by the work of Nancy Ekholm Burkert. One of the set pieces is a giant rolling peach. In this lesson we will explore the art of Nancy Ekholm Burkert and her sources of inspiration and explore the math behind creating the giant peach.
"In my illustrations I try to project real rather than idealized or cliche faces (using my children and friends' children as models), a 'sense of place' (as one would design a set for a play) and particularized forms in nature." Nancy Ekholm Burkert's illustrations for fantasy works, which account for five of the eight children's books she has illustrated since 1961, testify to the achievement of the aims which she outlines above. Burkert's illustrations are peopled with decidedly authentic characters. The countenances and proportions of the dwarves in Snow White and the Seven Dwarves (FSG, 1972), for example, were based on Burkert's intensive medical research on the physical characteristics of the dwarf, while the prototype for Snow White herself was fourteen year old Claire Burkert, Nancy Burkert's daughter. Similarly, the two children who appear in the periphery of every full color picture in Lear's The Scroobious Pip (H & R, 1968) strongly resemble Burkert's portraits of Claire and her brother, Rand.

The most striking example of Burkert's achievement of a "sense of place" is her interpretation of Hans Christian Andersen's The Nightingale (H & R, 1965). Here Burkert's exquisitely detailed illustrations, strongly influenced by her particular fascination with the Song period of Chinese painting, invite the reader to immerse himself in the rhythm and flow of Oriental life in a way which complements Andersen's own succinct introduction to the Chinese tale: "In China, you know, the Emperor is Chinese, and all his subjects are Chinese too." Reminiscent of Potter's naturalistic drawings, Burkert's "particularized forms in nature" create what is perhaps the most distinctive quality of her style. Like her drawings of the discontented little evergreen for Andersen's The Fir Tree (H & R, 1970) in which every needle on every branch is painstakingly represented, Burkert's illustrations of other natural things—animals, insects, plants—are equally particularized. As Danoff relates in his introduction to The Art of Nancy Ekholm Burkert, Burkert prefers particularization of the tree to the tree which is rendered by the artist as, for example, a pole topped with a green ball.

Now if we give the trunk the specific texture and the foliage the specific color and form of, e.g. a red maple, do we sacrifice 'treeness'? I believe we have added another dimension—that of reference to actuality. We have extended the tree's identity beyond the most fundamental—without losing that fundamental. We have increased the degree of communication through further identification with and reference to life.

Thus unlike some artists who attempt to reduce the things of nature to their "essential" states, Burkert believes that particularization is the key to portraying the universal.

Nancy Ekholm Burkert does not labor over the decision to illustrate a book. "If a story and I are meant for one another—I can 'see' the whole book-the format, etc." Indeed Burkert directs or collaborates on the format and overall design of nearly all the books she illustrates. Her sensitivity to the total book-making process—evidenced in for example the design of Snow White which is totally medieval from endpapers and borders to historiated initial and Snow White's Dürer-inspired headpiece—lends artistic integrity to each of her works. Burkert believes that she can immediately visualize a book only when its author and she have similar visions of what they want to convey; when this happens she is able to reach her self-stated goal—to "illuminate and expand the story as the author intended."

The stories which Burkert illustrates represent diverse fantasy forms—folk tale, nonsense poem, modern fantasy, morality tale—and yet Burkert suggests that they have in common "literary substance and a writer's skill I respect." Although her style changes little from one book to another, Burkert attempts to "suit the technique to the quality...(felt) in the text." Hence in her illustrations for The Fir Tree she uses...
both soft charcoal pencil sketches and brush and colored ink drawings, while for Snow White she combines bold line with delicate water color. In all of these Burkert "illuminates...


We Too Were Children, Mr. Barrie

Being a Compendium of Children’s Books by Twentieth Century “Adult” Authors Currently Out of Print

Thursday, February 17, 2011

NANCY EKHOLM BURKERT

MOST BIOS OF NANCY EKHOLM BURKERT, illustrator of John Updike's A Child's Calendar, sum up her career as follows: she is the original illustrator of Roald Dahl's James and the Giant Peach, which was her first published illustration work for children, and she received a Caldecott Honor in 1973 for Snow-White and the Seven Dwarfs. This is not a shabby biography. But there must be more to the career of the illustrator chosen as the second artist ever to be given an exhibition at the Eric Carle Museum of Picture Book Art after none other than Maurice Sendak.

NANCY EKHOLM BURKERT was born February 16, 1933 in Sterling, Colorado. By the time she was twelve she had lived in five states, settling in Wisconsin in 1945. "Because I felt very alone as a child," she wrote in 2007, "drawing became my companion, and my bridge to the
World." She wrote and illustrated her first picture book (unpublished) in high school while also serving as editor of the year book and taking art courses at the Wustum Museum. "As a child...my picture books provided my only source of visual art," but as she grew her influences became much broader. She majored in art at the University of Wisconsin in Madison, and completed a masters on a George S. Kaufman fellowship for female graduate students. During that time she studied the old masters and came to admire the Flemish masters of the 15th and 16th centuries in particular. It was her discovery of Eastern art that was most revelatory, however. "I discovered my affinity with Asian art, especially early Chinese painting. My preference is for linearity, which can express for me grace, rhythm and harmony...the Spirit I feel in everything."

Above: From Hans Christian Andersen's *The Nightingale*

When she speaks of linearity, she means actual line work, a focus on meticulous detail developed line by line.
Burkert received the commission for her first illustrated children's book, *James and the Giant Peach*, after a picture book she had written and illustrated was accepted at Knopf. The
book was in rhyme and detailed the story of an "aerial lady" and "what happens when kites break their strings and disappear; sort of a great lost-and-found in the sky." Like the book written in high school, the story of the aerial lady never saw publication.

To achieve the level of detail Burkert demands, the artist does exhaustive research both in the field "on location" and in books and museums. She often spends as much time on research as creating the pictures. *Snow-White* took her three years to complete, and her labor of love *Valentine & Orson* required seven years.

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Posted by Ariel S. Winter at 11:12 PM
Labels: Nancy Ekholm Burkert


James and the Giant Peach - illustrated by Nancy Ekholm Burkert
Additional Imagery

James and the Giant Peach
by Roald Dahl

illustrated by Nancy Ekholm Burkert
The Inspirations of Nancy Ekholm Burkert

In her work Nancy Ekholm Burkert uses techniques of linear perspective and chiaroscuro to develop her images. She is also inspired by traditional Chinese art, particularly work from the Song Dynasty. Linear Perspective uses visual art design elements to create an illusion of depth (three dimensions) on a two-dimensional flat surface (such as a sheet of paper.) Chiaroscuro is a technique used to create light and shadow in order to give shape to three-dimensional objects. Song Dynasty art is famous for landscape painting, one of the most beautiful expressions of Chinese culture.

**Linear Perspective**

PUT SIMPLY: The term "perspective" refers to the attempt to depict (on a two-dimensional surface like paper) an image as it is viewed by the eye. It is what lends depth to a painting or drawing. It was mastered for the first time during the Italian Renaissance, by painters such as Piero della Francesca (1420-92).

**Definition and Meaning of Perspective**

Perspective is a linear system of spatial alignment which creates an illusion of depth on a two-dimensional flat surface (or on a shallow three-dimensional surface such as a relief carving). It replicates the optical effects of recession, by organizing space and depth from one point of view. Often called Linear Perspective (geometric, mathematical or optical perspective), this system is based on how the human eye sees the world: that is, (1) objects which are closer appear larger, while more distant objects appear smaller; (2) the size of an object's dimensions along the line of sight appear relatively shorter (foreshortened) than dimensions across the line of sight. Perspective drawing is used by representational artists to re-create a natural depth and solidity. It is a highly useful tool for creating realistic art. However, Surrealists or other painters for whom strict replication of the natural world is not important or desirable, may distort or disregard the rules of perspective entirely.

**Vanishing Point**

One of the main uses of perspective in painting is to establish the position from which the artist or spectator views the scene. This is done by placing a horizontal line across the notional surface of the picture (the 'horizon line') and a vertical line down it (the 'centre of vision'). Both are wholly imaginary lines, and may extend beyond the edge of the picture for the purpose of construction. Having fixed the position from which the spectator views the scene, the artist proceeds on the basis that parallel lines converge as they recede, and that they eventually meet at what is termed the 'vanishing point' on the 'horizon line'. The artist then draws imaginary converging lines in order to depict how objects diminish in size the further they recede from the spectator.
Types of Linear Perspective

There are several types of perspective in painting, of which the most common are one-point two-point and three-point perspective, classified according to the number of vanishing points in the drawing. One-point perspective is normally used when simple views are depicted, such as a railway track disappearing into the distance directly in front of the spectator. Two-point perspective is typically used to depict two receding views, such as those visible to a person standing at the street-level corner of a building, where one wall recedes (eg) to the left, one to the right. Three-point perspective is typically used for buildings viewed from above, or below. As well as the two vanishing points from our last example, one for each wall, there is now a third vanishing point which reflects how those walls recede into the ground or above into the sky.

Because by definition, a vanishing point(s) can only exist when parallel lines are present in the scene, the absence of such lines means that the picture has no vanishing points - that is, zero-point perspective. This situation exists, for instance, in a natural scene like a mountain range, or a view out to sea - neither of which usually contains any parallel lines. However, zero-point perspective can still have a sense of 'depth': more distant mountains and more distant sailing boats have smaller scale features. The concept of 'atmospheric perspective' - where dust and water vapour suspended in the atmosphere partly obscure our view of distant objects - is also used to depict depth in these natural scenes.

RETRIEVED FROM: http://www.visual-arts-cork.com/painting/linear-perspective.htm
Chiaroscuro

Chiaroscuro, (from Italian: chiaro, “light,” and scuro, “dark”) a technique employed in the visual arts to represent light and shadow as they define three-dimensional objects.

Some evidence exists that ancient Greek and Roman artists used chiaroscuro effects, but in European painting the technique was first brought to its full potential by Leonardo da Vinci in the late 15th century in such paintings as his Adoration of the Magi (1481). Thereafter, chiaroscuro became a primary technique for many painters, and by the late 17th century the term was routinely used to describe any painting, drawing, or print that depended for its effect on an extensive gradation of light and darkness.
In its most dramatic form—as in the works of those Italian artists of the 17th century who came under the influence of Caravaggio—it was known as tenebrismo, or tenebrism. Caravaggio and his followers used a harsh, dramatic light to isolate their figures and heighten their emotional tension. Another outstanding master of chiaroscuro was Rembrandt, who used it with remarkable psychological effect in his paintings, drawings, and etchings. Peter Paul Rubens, Diego Velázquez, and many other, lesser painters of the Baroque period also used chiaroscuro to great effect. The delicacy and lightness of 18th-century Rococo painting represents a rejection of this dramatic use of chiaroscuro, but the technique again became popular with artists of the Romantic period, who relied upon it to create the emotive effects they considered essential to their art.
In the graphic arts, the term *chiaroscuro* refers to a particular technique for making a *woodcut* print in which effects of light and shade are produced by printing each tone from a different wood block. The technique was first used in *woodcuts* in Italy in the 16th century, probably by the printmaker *Ugo da Carpi*. To make a chiaroscuro woodcut, the key block was inked with the darkest tone and printed first. Subsequent blocks were inked with progressively lighter tones and carefully measured to print in register with the key block. Chiaroscuro woodcuts are printed in only one colour, brown, gray, green, and sepia being preferred. The process attempted to imitate *wash* and *watercolour* drawings and also became popular as an inexpensive method of reproducing *paintings*.

RETRIEVED FROM: [http://www.britannica.com/art/chiaroscuro](http://www.britannica.com/art/chiaroscuro)
Traditional Chinese Art: Song Dynasty Art
Characteristics of Northern/Southern Song Arts & Culture.

Painting

Most of all, the Northern Song is famous for landscape painting, one of the most beautiful expressions of Chinese culture. In an attempt to escape the turmoil and upheaval that occurred at the end of the Tang dynasty (618–906), a number of tenth-century painters retreated into the mountains where they found, in nature, the moral equilibrium for which they had searched in vain in the human world. In these visionary landscape pictures, they depicted the great mountain - which towered above everything else - as a ruler watching over his subjects: an idealized theme taken up by later Song court painters, who transformed it into an emblem of a well ordered state.

An important expression of Song unification after the violent Five Dynasties period (907–60) was the emergence of a distinctive style of court painting practiced by graduates of the Imperial Painting Academy, many of whom went on to serve the needs of the imperial court. Later, the differing artistic strands embodied by these court painters came together to form a single harmonious type of academic art that - while different to Western "naturalism" - came close to a naturalistic portrayal of the physical world and the exact rendering of an object.

The best landscape artists of the Song Dynasty include Fan Kuan (c.960-1030), and Li Cheng (919–967), responsible for the wonderful silk painting Solitary Temple amid Clearing Peaks (c.960, Nelson-Atkins Museum of Art). Meanwhile, shan shui (mountain-water) landscape art was embodied by the likes of Guo Xi (c.1020-90), and his masterpiece Early Spring (1072, National Palace Museum, Taipei).
DETAIL: Solitary Temple amid Clearing Peaks

The large hanging scroll is attributed to Li Cheng, and is one of the very few surviving examples attributed to his hand. It is a monumental mountain landscape with a temple near its center and a flurry of human activity near the base of the painting. The artist conceived and executed the picture with a precision and expertise that convey the scene’s weight and volume. The brushwork captures the animation found in nature, and the artist’s control over the ink allows the architectural elements to be interdependent with the surrounding contorted trees, streams and mist-covered mountains. The fine brushwork and monumental composition in this 10th century Chinese landscape make it a world-class masterpiece. Attributed to Li Cheng (李成, 919–967), Five Dynasties period (907-960) Hanging scroll, ink and light color on silk, 111.8 x 55.9 cm, The Nelson-Atkins Museum of Art, Kansas City, Missouri

Guo Xi, *Early Spring* (1072)

![Early Spring by Guo Xi](image)

Such mountains are conceived frontally and additively (one layer upon another layer, gradually). The contours are nervously charged, the crevices are deep, and the surfaces of the mountains have raindrop texture dots, which convey a powerful and immediate sense of tactile realism. Fan Kuan modeled the central massif in three separate steps: incisive thickening-and-thinning contour strokes Subtly modulated texture dots, which develop the lines into surfaces A filling-in and rounding-out with a graduated blue-gray ink wash All the three paintings (the third one in the following, painted by Guo Xi), as macrocosmic images of a moral and orderly universe, embody the contemporary (10th century) Neo-Confucian philosophy of social order. Guo Xi described mountain scenery in anthropomorphic terms: “a mountain has watercourses as its arteries, grass and trees as its hairs,
mist and clouds as its complexion...waters have the mountains as their face, pavilions and kiosks as
their eyebrows and eyes, and fishing and angling to give them animation." Overall, we see that
the maze of leaves of the deciduous trees are drawn individually, flawlessly, and steely precise. Such a
precise manner reveals the structure of the trees and the vigorous rhythm that pulses through them.
Throughout this work we sense the presence of a powerful and disciplined intellect, accounting for
the exquisite order and the unfailing inspired hand. Guo Xi (1020-90), Early Spring, hanging scroll,
ink on silk, 1072, National Palace Museum, Taibei Guo Xi, according to his contemporaneous
record, was the supreme figure among the landscape painters of the time. He was a member of the
Imperial Academy, and his tenure of office spanned part of the reign of three emperors. Here
movement is stressed at the expense of substantiality and precise def
initions. Guo Xi also perfected
atmospheric perspective, a method of creating the illusion of space and distance by depicting
objects in progressively lighter tone as they recede into depth, suggesting the intervention of
atmosphere between them and the viewer. Solids are eroded by the fitfully intruding element of the
atmosphere, resulting in spatial ambiguities. Dramatic interpenetration of solids and voids defines
the painting, in which landscape elements simultaneously emerge from and recede behind dense,
wafting mists. The rock shapes are rounded and never angular, slanting rather than vertical Their
outlines are so broad that their descriptiveness is compromised. Guo Xi's outline, texture strokes,
and modeling ink washes fuse into a single technique; thickening-and-thinning brushstrokes in
tones ranging from transparent blue-gray to charcoal-black are overlaid so that they run into each
other to create a wet, blurry surface. In Guo Xi's own view, "After the outlines are made clear by dark
ink strokes, use ink washes mixed with blue to retrace these outlines repeatedly, so that even if the
ink outlines are clear, they appear always as if they had just come out of the mist and dew."

TEXT RETRIEVED FROM: https://www.coursehero.com/file/p35jccr/Such-mountains-are-conceived-
frontally-and-additively-one-layer-upon-another/

IMAGE RETREIEVED FROM: http://bauddhamata.blogspot.com/2008/05/quo-xi-as-toponym.html

Other leading Chinese painters of the Song Dynasty included: Zhang Zeduan (1085-1145),
the scholarly artist, whose masterpiece Life Along the River on the Eve of the Qing Ming
Festival (c.1100, National Palace Museum, Beijing) provides an in-depth illustration of daily
life in the capital city Bianjing. The work, a set of paintings on a silk handscroll, depicts the
city's inhabitants during the festival. Its depictions are so vivid and comprehensive, that it is
often called "the Chinese Mona Lisa". Other noted Song artists included: Yan Wengui (967-
1044), Xu Daoning (c.970-1051), Su Shi (1036-1101), Li Gonglin/ Li Longmian (c.1049-
1106), Li Tang (c.1050-1130), Mi Fu (1051-1107), Ma Hezhi (flourished c.1131-62), Ma
Yuan (flourished 1190-1225), Liang Kai (early 13th century). See also: Pen and Ink
Drawing.

The Song era also reportedly gave birth to the Chinese tradition of paper folding, known as
"zhezhi" - better known in the West through the Japanese version called Origami , invented
around 1600.

Effect of Neo-Confucianism on Song Painting

A notable difference exists between the painting of the Northern Song period (960–1127)
and that of the Southern Song period (1127–1279). Bei Song art was shaped by the
dominant political concern of bringing order to the world and, in the process, sorting out the
major issues affecting society at large. Thus paintings typically depicted vast, sweeping
landscapes. In contrast, the Nan Song concerned themselves primarily with reforming
society from the bottom up and on a much smaller scale. Therefore, their paintings tended
to feature smaller, more intimate scenes. This change in attitude derived largely from the growing influence of Neo-Confucianism.

Life Along the River on the Eve of the Qing Ming Festival, DETAIL

IMAGE RETRIEVED FROM: https://www.studyblue.com/notes/note/n/ch-14-india-china-japan/deck/1581015

Life Along the River on the Eve of the Qing Ming Festival, DETAIL 2

IMAGE RETRIEVED FROM: https://www.studyblue.com/notes/note/n/test-3/deck/13069262
Life Along the River on the Eve of the Qing Ming Festival, DETAIL 3

‘China’s Mona Lisa’ Makes a Rare Appearance in Hong Kong

By KEITH BRADSHER

Published: July 3, 2007

HONG KONG, July 2 — Politics and art don’t always mix well, but the combination has yielded a rare chance for Hong Kong residents and visitors to see what is arguably China’s most famous painting.

Trying to foster nationalistic pride in China’s heritage among Hong Kong residents, the Chinese government has sent 32 artworks here for an exhibition to mark the 10th anniversary of Britain’s return of Hong Kong to China on July 1, 1997. Among them is Zhang Zeduan’s “Along the River During the Qingming Festival,” a scroll painted in the early 12th century.

“Qingming Festival” is famous partly for its involvement over centuries in palace intrigues, theft and wars, and partly for its detailed, geometrically accurate images of bridges, wine shops, sedan chairs and boats beautifully juxtaposed with flowing lines for the depiction of mountains and other natural scenery. It is routinely covered in courses on Chinese history, art and culture, across China and in the West.

“ The ‘Qingming Festival’ is probably the single most widely known work in China,” said Marc F. Wilson, a Chinese specialist and the director of the Nelson-Atkins Museum of Art in Kansas City, Mo.

He added that the painting was “like China’s Mona Lisa.”

Because of its fragility, the scroll is seldom displayed, even in Beijing, and has never been lent for an overseas exhibition.
It was briefly exhibited in Shanghai in 2003, where it drew lines that snaked for a quarter-mile outside the museum, and in Shenyang, China, in 2005.

“Qingming Festival” and 15 other paintings and examples of calligraphy dating from the 6th to the 14th centuries are to remain on display through July 22. Another 16 works, dating from the 4th to the 16th centuries, will be on view from July 23 to Aug. 11.

Zheng Xinmiao, China’s vice minister of culture and the director of the Palace Museum in Beijing, described the works as “the highest grade of art ever shown” outside of China proper.

“Through all the turmoil of different dynasties, it is remarkable for these pieces to survive,” he said.

The purpose of the exhibition is clear from its title: “The Pride of China.” The Beijing government has sponsored a series of Chinese cultural events here this summer to foster Chinese identity in a population where many have seen themselves as citizens of Hong Kong first, and only secondarily as Chinese.

Yet one visitor, Ringo Lau, a 47-year-old consultant who attended the exhibition on Friday, the opening day, remarked: “I have no question I am Chinese. I don’t need this to enrich it.”

He said he had studied “Qingming Festival” and recalled that a bank branch near his boyhood home in Hong Kong displayed a large reproduction of part of the painting. Although only allowed to look at the painting itself for five minutes on Friday — guards enforce time limits for each group of visitors — he said he was satisfied.

“It’s detailed, it’s marvelous, it’s very colorful,” he said.

Like the Mona Lisa, “Qingming Festival” is to some extent famous for being famous.

The Mona Lisa became a household word partly because it was stolen from the Louvre in August 1911. The theft and subsequent sale of forgeries passed off as the real painting set off a frenzy of news coverage, as well as songs and even cabaret acts, until the original was recovered in Italy in December 1913.

“Qingming Festival” has been famous since the 14th century, when forgeries began to circulate, said Tang Hing-sun, an assistant curator of the Hong Kong Museum of Art who helped organize the exhibition here.
Forgers could pass off their copies as the original partly because the original was repeatedly stolen or misappropriated from the imperial collection, starting as early as the 1340s. It kept showing up in the hands of wealthy, influential families, from whom emperors repeatedly recovered it when they confiscated estates during disputes.

Qiu Ying, a 16th-century artist, established a reputation for painting beautiful copies of “Qingming Festival,” prompting forgers even to begin producing forgeries of his copies.

The Nationalists moved the cream of the imperial collection to Taiwan shortly before losing the civil war to the Communists in 1949. But through a quirk of history, “Qingming Festival” had been separated from the rest of the collection and stayed on the mainland.

The last emperor, Pu Yi, quietly took the painting with him when forced to leave the Forbidden City in 1924. The Japanese military later installed him as the puppet ruler of Manchuria; caught by the Soviet Army at the end of World War II, he still had the painting.

The Soviets handed over the painting to a bank in northeastern China for safekeeping. It stayed there until 1950, when it was transferred to a nearby museum and later to Beijing.

With such a convoluted history, there is the theoretical possibility that a forgery was substituted at some point. The National Palace Museum in Taipei takes pride in holding 10 ancient copies of the original “Qingming Festival” in its collection.

But art scholars agree that the Palace Museum in Beijing does indeed own the original. The style and materials of the scroll — ink on silk — are consistent with work from the 12th century, and the many chops, or seals, of its owners over the years are accurate.

“There’s no question of what it is,” said Mr. Wilson, who was not involved in producing the current exhibition.

For art lovers, the question may be whether “Qingming Festival” is being shown too frequently: this is its third exhibition in five years. The National Palace Museum in Taipei restricts the showing of comparably old paintings to 40 days at a time, followed by at least three years in storage.

The Hong Kong Museum of Art has tried to manage the crowds and protect the art by having visitors pass through a series of galleries adorned with large reproductions and texts on “Qingming Festival” before they reach the scroll itself. The heavily guarded painting is exhibited in a long, thick-sided display case in a gallery with the lights kept fairly low.
Visitors are admitted in groups and are shooed along after the five-minute viewing. Tickets must be bought in advance for specific times.

The Hong Kong Museum of Art is trying to err on the side of caution in handling the crowds, as any mishap would be a national incident in China.

“From an historic and artistic perspective, these are treasures,” said Tang Hoi-chiu, the chief curator.

“Along the River During the Qingming Festival” is at the Hong Kong Museum of Art through July 22. Information: lcsd.gov.hk/hkma. Other loans run through Aug. 11.
Peaches are a local crop of Louisiana. Here again is Nancy Ekholm Burkert’s image of the peach tree that grows in Aunt Sponge and Aunt Spiker’s garden.
Here is an image of a Louisiana peach orchard:
Using Nancy Ekholm Burkert’s work as an inspiration, color the image of a Louisiana peach orchard. Notice the way Nancy Ekholm Burkert uses light shading and line. Do the same thing with your work.
Using Nancy Ekholm Burkert’s work and the things that inspired her, create your own image of a Louisiana peach tree.
Set designers also use a lot of math. Drawings must be converted into drafts of ground plans (that include scale and proportion,) then into 3-d models and final into 3-dimensional structures that will be used to create each scene of the production. Here is an example of how JPAS Assistant Technical Director Kristin Blatchford began to convert her inspirations from Nancy Ekholm Burkert’s illustrations of the giant peach into a draft that would become the production set:
Visual artists, architects and set designers all use basic shapes, such as squares and rectangles, to help them develop designs. These basic shapes can be used to help architects and set designers consider the perimeter and area of objects as they convert the 2-dementional objects into 3-dementional structures.

In the case of designing the peach, JPAS **Assistant Technical Director** Kristin Blatchford considered circles and ellipses. Working with circles included calculating radius, circumference and area.

**Circle Shape**
Circle Calculator

Circle Calculator

Use this calculator to find the area, circumference or radius of a circle. Given any one variable of a circle you can calculate the other 2 unknowns.

* Units: Note that units of length are shown for convenience. They do not affect the calculations. The units are in place to give an indication of the order of the results such as ft, ft² or ft³. Any other base unit can be substituted.

For example, if the radius is 6 feet, Answer:

\[ r = 6 \text{ ft} \]
\[ C = 37.6991 \text{ ft} \]
\[ A = 113.097 \text{ ft}^2 \]

Circle Formulas in terms of Pi \( \pi \), radius \( r \), and diameter \( d \)

Radius and Diameter:

\[ r = d/2 \]

Area of a circle:

\[ A = \pi r^2 = \pi d^2/4 \]

Circumference of a circle:

\[ C = 2\pi r = \pi d \]

Circle Calculations:

Using the formulas above and additional formulas you can calculate properties of a given circle for any given variable.

- **Calculate A and C | Given r**
  Given the radius of a circle calculate the area and circumference
  - \[ A = \pi r^2 \]
- $C = 2\pi r$

- **Calculate $r$ and $C$ | Given $A$**
  Given the area of a circle calculate the radius and circumference
  - $r = \sqrt{A / \pi}$
  - $C = 2\pi r$

- **Calculate $A$ and $r$ | Given $C$**
  Given the circumference of a circle calculate the radius and area
  - $r = C / 2\pi$
  - $A = \pi r^2$

JPAS James and the Giant Peach: Art, Math and Set Design: Calculating Circumference

NAME____________________

Using the image of a Louisiana peach tree you created on graph paper, choose one peach. Measure the peach with a ruler. Now redraw it as a circle, using your measurement. Use this measurement as your diameter. $d=2r$

Using your diameter, calculate radius and circumference of your circle.

$\pi = \text{pi} = 3.14159$  
$C = 2\pi r$

radius

$r = \frac{C}{2\pi}$
Mathematics Standards » Grade 1

Operations and Algebraic Thinking 1.OA

A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Measurement and Data 1.MD

A. Measure lengths indirectly and by iterating length units.

1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.

Mathematics Standards » Grade 4

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems.

2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Measurement and Data 4.MD

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require
expressing measurements given in a larger unit in terms of a smaller unit. **Represent measurement quantities using diagrams** such as number line diagrams that feature a measurement scale.

**Mathematics » Grade 7**

**The Number System 7.NS**

d. Apply properties of operations as strategies to add and subtract rational numbers.

**Expressions and Equations 7.EE**

B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

**Geometry 7.G**

A. Draw, construct, and describe geometrical figures and describe the relationships between them.

1. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions.

6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three dimensional objects

**Mathematics Standards » Algebra II**

**Linear, Quadratic, and Exponential Models★ F-LE**

A. Construct and compare linear, quadratic, and exponential models and solve problems.
2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

B. Interpret expressions for functions in terms of the situation they model.

5. Interpret the parameters in a linear, quadratic, or exponential function in terms of a context.
Welcome to the largest peach orchard in Louisiana. Mitcham Farms has 12,000 trees, and the best peaches in the country. Since our beginning in 1946, we have provided only the BEST for our customers. We feature hand picked & graded peaches and peach products.

We ship nationwide and right to your door. Whether you prefer peach preserves, peach cobbler, or some other fine peach products, we probably have what you’re looking for.

All of our peaches are hand picked and graded, and you can enjoy watching the processing and packaging first hand. Tour groups are welcome, but we recommend that you call ahead to check availability and processing times.

RETRIEVED FROM: http://www.mitchamfarms.com/
Peaches
AT ED ESTER FARMS WE GROW 3 BASIC TYPES OF PEACHES

- CLINGSTONE

- SEMI-CLINGSTONE

- FREESTONE

Clingstone peaches get their name from the characteristic of the peach flesh which sticks or “clings” tightly to the stone or pit. Although a bit more troublesome to work with, cling types are great for eating, canning, pickling or freezing. They are smaller than Semi-Clingstones and Freestones. Clings are the first peaches to mature, usually in late May.

Semi – Clingstones, as their name implies, do not cling to the stone as much as their true cling type cousins. In fact, once totally mature, they will separate quite easily from the pit. These varieties mature in early June.

Freestone peaches are our most popular type and comprise the majority of our production. These peaches separate easily from the stone and are larger than either the cling or semi-cling types. We allow these fruits to mature completely on the tree to allow them to be at their sweetest and most flavorful when you purchase them. Freestones can be used for all purposes: canning, pickling, preserving and best of all…fresh!
OUR FAVORITE FREESTONE VARIETIES

- Gala
- Harvester
- Majestic
- Red Globe
- Bounty
- July Prince
- Ruston Red
- Cresthaven
- Dixieland
- Red Skin
- Ouachita Gold

In all, we produce over 25 different peach varieties… all selected to grow the best peaches possible in our climate here in North Central Louisiana.

Our Peaches are available from late May until the very end of July. They can be purchased by the pound or by the peck box which is about 12 pounds. As with all our crops, they are picked daily to be at their sweetest and freshest

Ed Lester Farms - PO Box 524 - 1165 Highway 84 East - Coushatta, Louisiana 71019

RETRIEVED FROM: http://edlesterfarms.com/peaches/
In the opening chapters of *James and the Giant Peach*, once the peach attains colossal size (thanks to the help of a magic potion) it is cut from the tree by James and the Centipede and rolls on a journey. This lesson explores the first part of the journey, from the garden to the Atlantic Ocean, and then gives students the opportunity to pilot the peach and plot their own course.

Begin by reading the following passages from *James and the Giant Peach* by Roald Dahl.

---

*About the Author*

Roald Dahl is the author of some of the finest and most widely read children's books ever published, including *Charlie and the Chocolate Factory*, *James and the Giant Peach*, and *Danny the Champion of the World*. He is also celebrated for his wonderfully wicked short stories for adults.
JAMES AND THE GIANT PEACH

James didn't know where the little man came from. He was just there, thrusting a faintly glowing bag at James. "Here! You take it! It's yours!" With a promise that the bag of "little green things" is magic and will free James from life with his horrible, cruel aunts. Sponge and Spiker, the little man is gone -- and James is dizzy with joy. But in his excitement James drops the bag and the magic is lost, sucked into the ground around the old peach tree. Would things never go right for James?

But then he feels it. Something is going to happen. Aunt Spiker spots it first: a peach growing high in their single peach tree. Growing and growing till it's as big as fat Aunt Sponge, and then as big as their house! All greedy Sponge and Spiker can think is that the remarkable peach will make them rich. But James knows. Something else, something stranger than ever this time, is about to happen to me again soon.

"With his new family of centipedes, ladybugs, glowworms and grasshoppers in his enormous juicy dwelling, James heads for exciting adventures with Cloudmen, sharks, and a ticker tape parade in New York City. . . Here is a broad fantasy with all the gruesome imagery of old-fashioned fairy tales and a good measure of their breathtaking delight." -- Kirkus

"In the most original fantasy that has been published in a long time, (Roald Dahl) tempers his imagination just enough to write a story that may well become a classic. The story . . . and the illustrations make this a gem." -- San Francisco Chronicle
"We're off!" someone was shouting. "We're off at last!"
James woke up with a jump and looked about him.
The creatures were all out of their hammocks and moving excitedly around the room. Suddenly, the floor gave a great heave, as though an earthquake were taking place.
"Here we go!" shouted the Old-Green-Grasshopper, hopping up and down with excitement. "Hold on tight!"
"What's happening?" cried James, leaping out of his hammock. "What's going on?"
The Ladybug, who was obviously a kind and gentle creature, came over and stood beside him. "In case you don't know it," she said, "we are about to depart forever from the top of this ghastly hill that we've all been living on for so long. We are about to roll away inside this great big beautiful peach to a land of . . . of . . . of . . . to a land of --"
"Of what?" asked James.
"Never you mind," said the Ladybug. "But nothing could be worse than this desolate hilltop and those two repulsive aunts of yours ---"
"Hear, hear!" they all shouted. "Hear, hear!"
"You may not have noticed it," the Ladybug went on, "but the whole garden, even before it reaches the steep edge of the hill, happens to be on a steep slope. And therefore the only thing that has been stopping this peach from rolling away right from the beginning is the thick stem attaching it to the tree. Break the stem, and off we go!"
"Watch it!" cried Miss Spider, as the room gave another violent lurch. "Here we go!"
"Not quite! Not quite!"
"At this moment," continued the Ladybug, "our Centipede, who has a pair of jaws as sharp as razors, is up there on top of the peach nibbling away at that stem. In fact, he must be nearly through it, as you can tell from the way we're lurching about. Would you like me to take you under my wing so that you won't fall over when we start rolling?"
"That's very kind of you," said James, "but I think I'll be all right."
Just then, the Centipede stuck his grinning face through a hole in the ceiling and shouted, "I've done it! We're off!"
"We're off!" the others cried. "We're off!"
"The journey begins!" shouted the Centipede.
"And who knows where it will end," muttered the Earthworm, "if you have anything to do with it. It can only mean trouble."
"Nonsense," said the Ladybug. "We are now about to visit the most marvelous places and see the most wonderful things! Isn't that so, Centipede?"
"There is no knowing what we shall see!" cried the Centipede.
"We may see a Creature with forty-nine heads
Who lives in the desolate snow,
And whenever he catches a cold (which he dreads)
He has forty-nine noses to blow.
"We may see the venomous Pink-Spotted Scurch
Who can chew up a man with one bite.
It likes to eat five of them roasted for lunch
And eighteen for its supper at night.
"We may see a Dragon, and nobody knows
That we won't see a Unicorn there.
We may see a terrible Monster with toes
Growing out of the tufts of his hair.
"We may see the sweet little Biddy-Bright Hen
So playful, so kind and well-bred;
And such beautiful eggs! You just boil them and then
They explode and they blow off your head.
"A Gnu and a Gnorcerous surely you’ll see
And that gnornous and gnorrable Gnat
Whose sting when it stings you goes in at the knee
And comes out through the top of your hat.
"We may even get lost and be frozen by frost.
We may die in an earthquake or tremor.
Or nastier still, we may even be tossed
On the horns of a fiendish Dilemma.
"But who cares! Let us go from this horrible hill!
Let us roll! Let us bow! Let us plunge!
Let’s go rolling and bowling and spinning until
We’re away from old Spiker and Sponge!"

One second later... slowly, insidiously, oh most gently, the great peach started to lean forward and steal into motion. The whole room began to tilt over and all the furniture went sliding across the floor, and crashed against the far wall. So did James and the Ladybug and the Old-Green-Grasshopper and Miss Spider and the Earthworm, also the Centipede, who had just come slithering quickly down the wall. 15

Outside in the garden, at that very moment, Aunt Sponge and Aunt Spiker had just taken their places at the front gate, each with a bunch of tickets in her hand, and the first stream of early morning sightseers was visible in the distance climbing up the hill to view the peach.

"We shall make a fortune today," Aunt Spiker was saying. "Just look at all those people!"

"I wonder what became of that horrid little boy of ours last night," Aunt Sponge said. "He never did come back in, did he?"

"He probably fell down in the dark and broke his leg," Aunt Spiker said.
"Or his neck, maybe," Aunt Sponge said hopefully.
"Just wait till I get my hands on him," Aunt Spiker said, waving her cane. "He'll never want to stay out all night again by the time I've finished with him. Good gracious me! What's that awful noise?"

Both women swung around to look.

The noise, of course, had been caused by the giant peach crashing through the fence that surrounded it, and now, gathering speed every second, it came rolling across the garden toward the place where Aunt Sponge and Aunt Spiker were standing.

They gaped. They screamed. They started to run. They panicked. They both got in each other's way. They began pushing and jostling, and each one of them was thinking only about saving herself. Aunt Sponge, the fat one, tripped over a box that she'd brought along to keep the money in, and fell flat on her face. Aunt Spiker immediately tripped over Aunt Sponge and came down on top of her. They both lay on the ground, fighting and clawing and yelling and struggling frantically to get up again, but before they could do this, the mighty peach was upon them.

There was a crunch.
And then there was silence.

The peach rolled on. And behind it, Aunt Sponge and Aunt Spiker lay ironed out upon the grass as flat and thin and lifeless as a couple of paper dolls cut out of a picture book.
And now the peach had broken out of the garden and was over the edge of the hill, rolling and bouncing down the steep slope at a terrific pace. Faster and faster and faster it went, and the crowds of people who were climbing up the hill suddenly caught sight of this terrible monster plunging down upon them and they screamed and scattered to right and left as it went hurtling by.

At the bottom of the hill it charged across the road, knocking over a telegraph pole and flattening two parked automobiles as it went by.

Then it rushed madly across about twenty fields, breaking down all the fences and hedges in its path. It went right through the middle of a herd of fine Jersey cows, and then through a flock of sheep, and then through a paddock full of horses, and then through a yard full of pigs, and soon the whole countryside was a seething mass of panic-stricken animals stampeding in all directions.

The peach was still going at a tremendous speed with no sign of slowing down, and about a mile farther on it came to a village.

Down the main street of the village it rolled, with people leaping frantically out of its path right and left, and at the end of the street it went crashing right through the wall of an enormous building and out the other side, leaving two gaping round holes in the brickwork.

This building happened to be a famous factory where they made chocolate, and almost at once a great river of warm melted chocolate came pouring out of the holes in the factory wall. A minute later, this brown sticky mess was flowing through every street in the village, oozing under the doors of houses and into people's shops and gardens. Children were wading in it up to their knees, and some were even trying to swim in it, and all of them were sucking it into their mouths in great greedy gulps and shrieking with joy.

But the peach rushed on across the countryside -- on and on and on, leaving a trail of destruction in its wake. Cowsheds, stables, pigsties, barns, bungalows, hayricks, anything that got in its way went toppling over like a nine-pin. An old man sitting quietly beside a stream had his fishing rod whisked out of his hands as it went dashing by, and a woman called Daisy Entwistle was standing so close to it as it passed that she had the skin taken off the tip of her long nose.

Would it ever stop?

Why should it? A round object will always keep on rolling as long as it is on a downhill slope, and in this case the land sloped downhill all the way until it reached the ocean -- the same ocean that James had begged his aunts to be allowed to visit the day before.

Well, perhaps he was going to visit it now. The peach was rushing closer and closer to it every second, and closer also to the towering white cliffs that came first.
These cliffs are the most famous in the whole of England, and they are hundreds of feet high. Below them, the sea is deep and cold and hungry. Many ships have been swallowed up and lost forever on this part of the coast, and all the men who were in them as well. The peach was now only a hundred yards away from the cliff -- now fifty -- now twenty -- now ten -- now five -- and when it reached the edge of the cliff it seemed to leap up into the sky and hang there suspended for a few seconds, still turning over and over in the air... Then it began to fall... Down... Down... Down... Down... Down... Down... SMACK! It hit the water with a colossal splash and sank like a stone. But a few seconds later, up it came again, and this time, up it stayed, floating serenely upon the surface of the water.

Once these passages have been read, display the following maps of England where everyone can see them, such as an overhead projector or ELMO. Also share the information about The White Cliffs of Dover. The maps feature Great Missenden and The White Cliffs of Dover. Ask students to imagine that Aunt Sponge and Aunt Spiker’s house and garden are located in Great Missenden. Great Missenden is where Roald Dahl lived. He used several locations in Great Missenden as inspiration for his books—models for such memorable places as Sophie’s ‘orphanage’ in The BFG or the library visited by Matilda while her mom went off to Aylesbury to play bingo. Invite students to imagine Aunt Sponge and Aunt Spiker’s house and garden are located here too. Using the images of the maps, review the path of the peach on the first part of its journey.
Map Great Missenden, Buckinghamshire
White Cliffs of Dover

The White Cliffs of Dover spread east and west from the port town of Dover. The cliffs have great symbolic value for Britain because they face towards France across the narrowest part of the English Channel, where invasions have historically threatened and against which the cliffs form a symbolic guard. The cliff face, which reaches up to 107 meters (351 feet), owes its striking white color to its composition of chalk accentuated by streaks of black flint.

MAP RETRIEVED FROM: http://www.hillmanwonders.com/england/white_cliffs_of_dover.htm
Travel time 2 h 18 min (123.3 mi) via London Orbital Motorway and M20

Map RETRIEVED FROM:
https://www.google.com/maps/dir/Great+Missenden,+Buckinghamshire,+UK/National+Trust+-/The+White+Cliffs+of+Dover,+Langdon+Cliffs,+Upper+Road,+Dover,+Kent+CT16+1HJ,+United+Kingdom/@51.4156378,-0.8053059,8z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x48765dc31ea054f7:0xa37ab1b05f962282!2m2!1d-0.70319!2d51.702655!1m5!1m1!1s0x47dea5202075e3d9:0xbafc73a96e9e0a0!2m2!1d1.339157!2d51.132076!3e0
In addition to displaying this map of England where everyone can see it, such as an overhead projector or ELMO, distribute a printed copy of this map to students. Explain that in the next part of the story, the peach floats to the Atlantic Ocean. Explain that the Atlantic Ocean is left of Ireland. Also explain that when the peach rolled off the White Cliffs of Dover it fell into the English Channel and then floated over the Celtic Sea to the Atlantic.

Also distribute the PILOT THE PEACH hand-outs. Using the map and PILOT THE PEACH hand-outs, ask students to create three new routes the peach could travel and still reach the Atlantic. To create the new paths, ask students first to write down the directions the peach will roll. Ask them to include "north," "south" "east" or "west." (including names of towns or cities.) Next, have them calculate both the new distance and travel times for each of these new paths. Next, using the formula

\[
\text{Speed} = \frac{\text{Distance}}{\text{Time}}
\]

and the handout, ask students to calculate different speeds their peach can travel.
JPAS James and the Giant Peach:
PILOT THE PEACH

New paths the peach can travel

NAME____________________

1. The original path of the peach was 123.3 mi. It traveled this path in two hours and 18 minutes. Imagine the peach can travel 60 miles an hour. Using a ruler, measure the length of three new paths. Now calculate how long it will take the peach to travel each new path if it is traveling 60 miles an hour.

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**JPAS James and the Giant Peach:**

**PILOT THE PEACH**

**NAME____________________**

Using the formula \( \text{Speed} = \frac{\text{Distance}}{\text{Time}} \) and the three new paths you created that the peach can travel, create a new speed for each path.

1.

2.

3.

Now, given the speed and distance, calculate the time it will take the peach to reach its destination.

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Mathematics Standards » Literacy Standards » Grade 1

Operations and Algebraic Thinking 1.OA

A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.2

Measurement and Data 1.MD

A. Measure lengths indirectly and by iterating length units.

1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.

Mathematics Standards » Literacy Standards » Grade 4

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems.

2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Measurement and Data 4.MD
A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (converting miles to inches or centimeters)

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Mathematics » Grade 7

The Number System 7.NS

d. Apply properties of operations as strategies to add and subtract rational numbers.

Expressions and Equations 7.EE

B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

Mathematics Standards » Algebra II

Linear, Quadratic, and Exponential Models★ F-LE

A. Construct and compare linear, quadratic, and exponential models and solve problems.
Roald Dahl wrote that it took 501 seagulls to carry the Giant Peach, James and his fellow passengers across the Atlantic. But physics students at the University Of Leicester have calculated that the right number is 2,425,907 seagulls. BTW, the illustrator of the picture to the left—Quentin Blake—celebrated his 80th birthday last month and will receive a knighthood this year. (Published in 2012.)

RETRIEVED FROM: http://www.bookmakingwithkids.com/?cat=42
IT WOULD TAKE 2.4 MILLION SEAGULLS TO LIFT JAMES'S GIANT PEACH

If you haven't read *James And The Giant Peach* then stub your toe intentionally. You're a disgrace.

If you have, you may remember that 501 seagulls lifted James's huge fruit into the skies. It turns out that figure is poppycock.

Calculations by The University Of Leicester reveal that some 2,425,907 seagulls would be needed to lift the peach skyward.

The fourth year physics students were inspired to use the classic kids book as the basis for a their study. They calculated the weight of the peach, using measurements based on the size of a small house, as described by author Roald Dahl.
By multiplying its density by its volume, and using Newton's second law of motion, they arrived at a figure of 4,890,579 Newtons – the amount of force it would take to move the peach. With us so far?

Then they worked out how much weight each seagull could lift based on its wingspan, the density of air around it and the speed it would travel. Apparently that's just over two Newtons. They used this to work out how many it would take to lift the whole thing.

"It showed us that 501 seagulls would be nowhere near enough to lift the peach, and that it would take much more – nearly 2.5 million seagulls to do this," student Emily Jane told This Is Leicestershire.

RETRIEVED FROM: http://www.shortlist.com/cool-stuff/it-would-take-2.4million-seagulls-to-lift-jamess-giant-peach
ADDITIONAL RESOURCES

http://www.agrilicious.org/local/peaches/louisiana
http://isites.harvard.edu/icb/icb.do?keyword=k7403&tabgroupid=icb.tabgroup95937
https://www.studyblue.com/notes/note/n/final-exam/deck/14288724
https://www.pinterest.com/pin/565342559443604476/

**SCIENCE:** To create the Glowing Paint

http://www.stevespanglerscience.com/blog/2012/10/19/the-science-behind-halloween-glowing-recipes/
http://science.wonderhowto.com/how-to/make-glow-powder-out-household-chemicals-408767/
http://www.wikihow.com/Make-Mountain-Dew-Glow

**SCIENCE:** LOUISIANA SPIDERS

http://www.spiders.us/species/filter/louisiana/