

GOODSPEED MUSICALS
TEACHER'S INSTRUCTIONAL GUIDE

Roald Dahl's
*James
and the
Giant Peach*
A new musical



Featuring Pilobolus



The Max Showalter Center for
Education in the Musical Theater

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JAMES AND THE GIANT PEACH

The Norma Terris Theatre
October 21 - November 21, 2010

MUSIC & LYRICS BY
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BASED ON THE BOOK BY
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Roald Dahl's
*James
and the
Giant Peach*

Teacher's Instructional Guide
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HOW TO USE THE GUIDES

THE TEACHER'S INSTRUCTIONAL GUIDE (TIG) is intended for use by teachers who will bring their school groups to attend performances at Goodspeed Musicals. The TIG provides background information, teaching ideas, and prompts to facilitate students' knowledge and appreciation of the show's themes and characters. The TIG activities are influenced by state and national standards associated with the arts, language arts, social studies, and science.

THE STUDENT GUIDE TO THE THEATRE serves as a companion to the Teacher's Instructional Guide (TIG). It includes a plot and character summary, accessible historical and thematic background information to support the lessons in the TIG, and a behind-the-scenes look at the production. It also includes fun facts, theatre terms, and activities.

Each lesson in the TIG corresponds to a specific section in the Student Guide. Reading the Student Guide before attending a Goodspeed production will increase the likelihood that students will take active, critical roles as audience members, which will then lead to valuable classroom discussions.

The chart below maps the connection between the TIG's lessons and supporting material with the corresponding pages in the Student Guide. (Click page numbers to jump to section.)

LEVEL/SUBJECT	LEARNING PHASE	LESSON TOPIC	TIG	STUDENT GUIDE
Elementary Language Arts	Before the Show	Exploring Themes: Good vs. Evil	Lesson: p. 15 Support Material: p. 4, 5, 7	Student Material: p. 3, 5
Elementary Language Arts	Understanding	Personification	Lesson: p. 15 Support Material: p. 11	Student Material: 11-12
Elementary Language Arts	After the Show	Poetry	Lesson: p. 15-17 Support Material: p. 4-5	Student Material: p. 3, 5
Elementary Science	Before the Show	Insects	Lesson: p. 18 Support Material: p. 10-11	Student Material: p. 11-12
Elementary Science	Understanding	Floating	Lesson: p. 18 Support Material: p. 12-13	Student Material: p. 13
Elementary Science	After the Show	Exploring the Senses	Lesson: p. 18 Support Material: p. 14	Student Material: p. 14
Middle School Language Arts	Before the Show	Exploring Themes: Orphans in Literature	Lesson: p. 19 Support Material: p. 8-9	Student Material: p. 9-10
Middle School Language Arts	Understanding	Personification	Lesson: p. 19 Support Material: p. 11	Student Material: p. 11-12
Middle School Language Arts	After the Show	Poetry	Lesson: p. 20 Support Material: p. 4-5	Student Material: p. 3, 5
Middle School Science	Before the Show	Insects	Lesson: p. 21 Support Material: p. 10-11	Student Material: p. 11-12
Middle School Science	Understanding	Buoyancy	Lesson: p. 21-22 Support Material: p. 12-13	Student Material: p. 13
Middle School Science	After the Show	Life Cycle of a Peach	Lesson: p. 21 Support Material: p. 14	Student Material: p. 14

SHOW SYNOPSIS

Setting: Early Summer 1961 near Dover, England

It's a perfectly perfect morning when James Henry Trotter and his parents attend the circus where they see many performers including Marvo the Magician. During the show, a large shrouded cage containing the famous white rhino of Boreo-boo is wheeled into the center ring and an angry roar erupts from inside. James dashes into the crowd to take a picture, but the cage is not strong enough to hold the rhino and it pounces forward breaking through its four walls. Trying to protect James from the charging rhino, both Mr. and Mrs. Trotter are devoured by the beast.

James is left orphaned and alone until he is sent to the home of his two aunts, Spiker and Sponge. James' aunts are angry that they must take care of him, but brighten up when they realized they can put James to work.

On his first day at his new home, James is left behind as Spiker and Sponge go to the beach. James falls asleep under a peach tree, but is startled awake upon his aunts' return. On his way back to the house he hears a rustling from behind the garden. Marvo the Magician from the circus steps out looking a bit worse for the wear. Marvo explains that he has a debt to pay James and pulls out a book of spells. He and James concocts the "Magic Green Worms" potion, and after it is complete, James mistakenly drops it onto the ground, spilling the worms at the base of the peach tree. The grass, ground and tree glow neon green as the worms dive into the dirt.

Meanwhile, Spiker and Sponge notice a giant peach growing from the tree and they devise a plan to charge admission for people to come see the giant peach. It's not long before word gets out and Spiker and Sponge earn money by signing contracts with reporters, botanists, scientists, and a Hollywood producer.

Forced to guard the giant peach overnight, James climbs the tree and the peach begins glowing, revealing a tunnel leading to the pit of the peach. James jumps in and meets Spider, Green Grasshopper, Centipede, Ladybug, and Earthworm, who have transformed and grown after eating James' magic green worms. The insects manage to release the peach from the tree and it falls to the ground and rolls into the sea forming a sort of ship.

A while after starting their voyage on the ocean, the group encounters several sharks who try to attack the peach. James comes up with the idea to attract some seagulls using Earthworm for bait, and then ties them to the peach's stem. With the help of the seagulls, the peach is able to fly away and escape the sharks.

Back at Spiker and Sponge's house the two realize that both the peach and James have vanished. Fearing they'll lose all the money they made from their peach contracts, Spiker and Sponge take their cash and board a cruise ship to New York City where they encounter Marvo the Magician. They are just about to confront him when they notice the peach flying by the ship. The aunts hatch a scheme and manage to get Marvo to divulge that he forgot to lock the rhino cage at the circus and is actually responsible for the death of James' parents as well as the giant peach.

Spiker and Sponge coerce Marvo into casting an evil spell. Seeing that the Aunts mean only to harm James, he adds a sentence at the end of the spell stating that James must give the peach to his aunts willingly and at that moment the spell will end.

On the peach, James notices horrific figures in the clouds and notifies the insects. Centipede reaches out to the clouds and a hand reaches back, pulling him into the water. James jumps in and rescues him with the help of Spider's web. Suddenly, Sponge and Spiker emerge from the clouds to claim their precious peach and reveal to James that they have taken Grasshopper and Ladybug and will kill them unless he hands over the peach. James agrees to the terms and his friends are released. Each of the insects is tied to a bunch of seagulls and floats safely away off the peach. James then gives his aunts the peach, but they fall from the sky as the spell is instantly broken.

Having traveled all the way to New York City, the peach lands on top of the Empire State Building after its fall from the clouds. James and the insects are reunited and find that Spiker and Sponge have been crushed to death by the peach. James is free of his evil aunts and lives in Central Park inside the peach pit which has been enchanted by Marvo. The insects go on to lead successful lives and Grasshopper and Ladybug fall in love, get married, adopt many children, and care for James as if he were their first born son.



CHARACTER SUMMARY

JAMES TROTTER: An eleven-year-old boy who experiences a great deal during the course of this adventure. He witnesses the horrible death of his parents, is abused by his wretched aunts, is lost at sea on a giant peach with a group of talking insects, and eventually overcomes all of this to triumph over evil.

MR. & MRS. TROTTER: James' parents. They are idealized by James as being "perfectly perfect." On a family trip to the circus, Mr. and Mrs. Trotter are killed while protecting James from the white rhino of Boreo-boo.

SPIKER & SPONGE: James' wretched aunts. They must care for James after his parents are killed, but refuse to accept him as part of the family. Instead they constantly mistreat him as though he was their servant.

MARVO THE MAGICIAN: A third-rate circus magician who forgets to lock the cage of the rhino that ends up killing James' parents. Although not very good at parlor tricks, Marvo is well studied in practical magic and casts the spell that causes the peach to grow.

GREEN GRASSHOPPER: The leader of the insect troupe. He is wise, smart, paternal, and becomes a father-figure to James.

LADYBUG: She represents all things nurturing and maternal. Ladybug is comforting, kind, gentle, patient, and sweet. She eventually earns the honor of becoming James' surrogate mother.

CENTIPEDE: A pest and a pessimist. Centipede is full of rage and hatred towards all things human. He is originally from the Bronx and becomes a crazy uncle to James.

EARTHWORM: By nature, he/she is both male and female and has very poor vision. He/She is quite vain, refined in taste, and enjoys high culture and fashion.

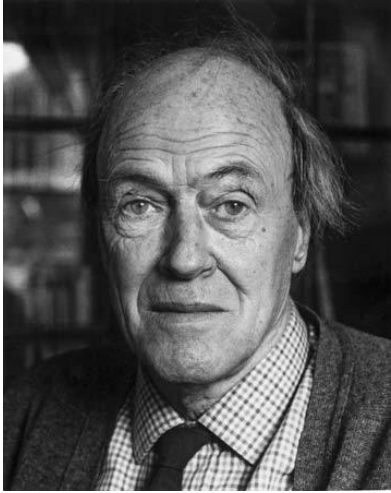
SPIDER: A French garden spider. She is young, beautiful, hip, fun, daring, brave and serves as an older sister to James.



ROALD DAHL

Biography

ROALD DAHL, author of *James and the Giant Peach*, was born in Llandaff, Wales on September 13, 1916. The young Roald loved stories and books. His mother told him and his sisters tales about trolls and other mythical creatures. Roald's father was a disciplined diary-keeper and when he was eight, Roald began his own diary. He wrote in *Boy*, "To make sure that none of my sisters got hold of it and read it, I used to put it in a



waterproof tin box tied to a branch at the very top of an enormous conker tree in our garden. I knew they couldn't climb up there. Then every day I would go up myself and get it out and sit in the tree and make the entries for the day."

Dahl had an unhappy time at school, as do many of the characters in his books. He wrote that school was made up of "days of horrors, of fierce discipline, of not talking in the dormitories, no running in the corridors, no untidiness of any sort, no this or that or the other, just rules, rules and still more rules that had to be obeyed." His fondest memories of this time were trips to the sweet shop where he and his friends would linger outside the shop window wondering how Gobstoppers change color and whether rats might be turned into liquorice.

At the age of nine, Roald was shipped off to boarding school where he suffered from terrible homesickness. He would write to his mother once a week and continued this habit through his adulthood. When he was thirteen, Roald attended private school where he excelled at heavyweight boxing and squash. Although he achieved in sports, his English teacher found him to be "quite incapable of marshalling his thoughts on paper." Roald was consistently beaten by the older boys and abused by his teachers. Luckily, his school was close to Cadbury's, one of England's most famous chocolate factories, where he would escape after a terrible school day to test new varieties of chocolate bars. Dahl dreamed of working in the inventing room of a chocolate factory, and it was this fantasy that inspired *Charlie and the Chocolate Factory*.

When he was eighteen, Dahl joined the Public Schools Exploring Society's expedition to Newfoundland instead of attending university. At 23 when World War II was just beginning, Dahl signed up with the Royal

Air Force in Nairobi where he was accepted as a pilot officer in Iraq. Not long after joining, Dahl had a horrible crash. Requiring a hip replacement and two spinal operations, he was sent back home to England in 1941.

In 1942, Dahl was sent to Washington, D.C. by the Royal Air Force. In Washington, he met British author C. S. Forester, for whom he wrote down his war experiences. Forester was impressed by his work and the piece appeared anonymously in the *Saturday Evening Post* in August 1942 under the title "Shot Down Over Libya." Subsequently, Dahl wrote another sixteen articles and stories for the *Post* and his career as a writer was well under way.

For the first fifteen years of his writing career, Dahl concentrated on short stories for adults. As he wrote, "They became less and less realistic and more fictional. I began to see I could handle fiction." His stories were initially published in magazines such as the *New Yorker*, *Harpers*, and *Atlantic Monthly* before being collected and published in a book called *Over to You*. Dahl's adult writing was critically acclaimed and some of the stories were even televised for the successful "Tales of the Unexpected."

But Roald Dahl's fame and success can be mostly attributed to his children's books. "I'm probably more pleased with my children's books than with my adult short stories," said Dahl, "Children's books are harder to write. It's tougher to keep a child interested because a child doesn't have the concentration of an adult. The child knows the television is in the next room. It's tough to hold a child, but it's a lovely thing to try to do."

Dahl first became interested in writing children's books by making up bedtime stories for his two daughters. This was how *James and the Giant Peach* came to be. After *James* was published in 1961, a string of bestsellers followed including *Charlie and the Chocolate Factory*, *The BFG*, *Danny the Champion of the World*, *The Twits*, *The Witches*, and *Matilda*. Dahl's books have been translated into 34 languages, reaching from Greece to Japan.

Roald Dahl was a great believer in the importance of reading. "I have a passion for teaching kids to become readers," he said, "to become comfortable with a book, not daunted. Books shouldn't be daunting, they should be funny, exciting and wonderful; and learning to be a reader gives a terrific advantage." Roald Dahl died in 1990 at the age of 74, but he continues to be one of the most beloved children's writers in the world.

ROALD DAHL

His Works



In numerous surveys about children's reading habits, Roald Dahl's titles top the polls as the best-loved and most widely read stories. Perhaps this is due to Dahl's wide range of writing, fast narrative drive, rich inventive language, and humorous approach; or maybe it is his uncanny ability to see the world as children do. Dahl

taps into children's imaginations and sees the world from a perspective which is self-contained, subjective and unambiguous in the delineation of right and wrong. His plots are straightforward, his characters are larger than life and his descriptions are powerful.

MODERN-DAY FAIRY TALES: On the surface, Dahl's stories may appear outrageous, dark, cruel, and amoral. Placed within the fairy tale tradition of paranormal happenings, eternal truths, and the struggle of good over evil, they become powerful, optimistic, believable and moral. Dahl's fiction contains all the essential ingredients of the fairy tale genre including magic, fantasy characters, wish-fulfillment, punishment, revenge, and a happy ending. Dahl demands that his readers suspend belief the very moment they enter his world. Unusual and improbable events are presented as ordinary, everyday happenings which could be experienced by anyone at any time.

PLOT: The plots in Dahl's stories are straightforward and linear, resulting in satisfying, unambiguous endings in which the bad guys always get what they deserve. The plots provide ample opportunities for exploring the essential ingredients of narrative form – an introduction, a rise in action, a conflict, and finally a resolution.

CHARACTERS: Dahl's stories are populated by characters who are either obviously good or obviously bad. This polarization is reinforced by detailed descriptions of the characters' physical and behavioral attributes. Dahl's characters do not mature or experience a spiritual crisis through the development of the plot, but instead, their actions and responses to each other trigger the events.

VIEWPOINT: Viewpoint is crucial to the way a reader interprets text. Dahl's *Danny the Champion of the World* is told by Danny in the first person narrative so that the reader empathizes with Danny and sees things from his perspective. On the other hand, *James and the Giant Peach* is told in third person narrative, offering

a neutral standpoint and providing an overview of all the characters and events. The anonymous narrator functions to disrupt the smooth unfolding of events and make the reader see things from a definite slant. Using asides and running commentary, the narrator introduces beliefs, opinions, likes and dislikes which color the reader's view of the story.

THEMES: The main characters in Dahl's stories are often children from one-parent families like Danny or orphans like James in *James and the Giant Peach*, Sophie in *The BFG* and the narrator in *The Witches*. The child, who symbolizes innocence and a force for good, is pitted against adults who embody negative forces such as evil, brutality, stupidity or incompetence.

There is also a strong delineation of good and bad in Dahl's work. He juxtaposes opposing forces so that each good person is balanced by an evil character. Those who are powerless or deprived in suffering family situations embody goodness while those who hold power either abuse it or use it to bully the defenseless. From the theme of good versus evil comes the notion that evil is always punished. Punishment and revenge feeds into a child's sense of justice and so from this perspective it is essential and necessary.

LANGUAGE: Dahl enriches his fiction with an entire vocabulary of invented words whose meanings derive from their sounds. The freshness, spontaneity, and vigor of his language makes his books perfect for reading aloud. Humor in Dahl's works stem from his relish for words. His fiction is filled with spoonerisms – transposing the initial letters or syllables of two or more words, malapropisms – using a word in place of one sounding similar, and deliberate misspellings. Dahl also uses similes and metaphors to color his descriptions of characters, bringing them vividly to life, as well as alliteration to heighten the sense of sound and provide comedic effect.

NON-FICTION: Dahl's autobiographical account of his childhood, *Boy*, reveals that much of his fiction is actually drawn from real life. Many of the themes such as punishment at the hands of adults, a fascination with sweets, and a love of nature are inspired by actual events. The strong individualist personality instilled in each of his main characters is rooted in Dahl's personal experiences of growing up in a world dominated and frustrated by adult values.

Source:
Faundez, Anne. "Author Profile: Roald Dahl."
http://www.roalddahl.com/downloads/tips/author_profile.pdf

ORPHANS IN LITERATURE

The following two pages include information about the theme of orphans as it relates to *James and the Giant Peach* and other literature. It can be used as supporting material for the "Exploring Themes - Orphans in Literature" lesson on page 19.

Orphans have long appeared as heroes and heroines in children's literature. From the Ugly Duckling, Oliver Twist, and Dorothy Gale to James Trotter and Harry Potter, some of literature's most beloved characters were left parentless and alone and cast aside by society only to prevail over their unfortunate circumstances.



"Orphans"
by Thomas Kennington

HISTORY

For centuries, orphans have been used as protagonists in folktales and fairytales. These orphans include not only those characters who are literally orphaned by the death of their parents, but also children who are lost, abandoned, cast out, disinherited by evil step-parents, raised in supernatural captivity, or reared by wild animals. *Cinderella*, *Hansel and Gretel*, *Snow White*, *Tarzan*, and *Rapunzel* all fit into this orphan character type. Even before fairytales, mythological and sacred texts often include stories of great prophets or leaders who were abandoned in infancy, such as Moses and Romulus and Remus.

As orphan tales passed from the oral to the written tradition, literary conventions developed. By the 19th century, the orphan heroine was an established character in English, American, and European literature. Classic novels such as *Heidi*, *Pollyanna*, *The Little Princess*, *The Secret Garden*, and *Anne of Green Gables* all exemplify this type of heroine. Male orphans also existed in literature as exemplified by *Oliver Twist*, *David Copperfield*, *Great Expectations*, and *Huckleberry Finn*. Although male orphans were prevalent, the female orphans predominated. These heroines were usually left with relatives who didn't want them – a hardhearted aunt was usually the relative of choice. By the end of the story the orphan heroines transformed the lives of those around them by the force of their spunky, sweet natures.

Orphans have continued to appear as characters in contemporary children's fiction such as J.K. Rowling's *Harry Potter*, Joan Lowery Nixon's *Orphan Train* series, Gertrude Chandler Warner's *The Boxcar Children*, and Roald Dahl's *James and the Giant Peach*.

EXPLORING THE ARCHETYPE

Some folkloric elements found in the standard orphan story are still utilized in even the most modern of orphan tales. Orphan characters in folktales and literature symbolize our isolation from each other and from society. Orphans are the eternal other; they do not belong to the most basic of groups, the family unit, and so they are cut off from society as a whole. Orphans are a reflection of the common human fear of abandonment. They are a manifestation of loneliness, but also represent the possibility for humans to reinvent themselves. Orphans embody the hope that no matter the present situation, it can be changed for the better. When an orphan succeeds against all odds, their success ultimately becomes ours.

Orphan stories share distinct patterns including character types, mistreatment of the orphan character, the orphan's quest, the obstacles put in his or her path, the methods employed to overcome the obstacles, and a final reward.

Mistreatment: Most orphans in literature are mistreated. This mistreatment ranges from a simple tongue-lashing to physical abuse or the threat of death. The orphan's isolation is further defined by hostility which may stem from jealousy or from the fact that another character wants something owned by the orphan.



Illustration from *Oliver Twist*

ORPHANS IN LITERATURE

Quests: The performance of difficult tasks or quests frequently exists in orphan tales. The orphan must leave home in order to find something essential – a place to belong and the right to be there. He or she seeks a sense of belonging and a home.

Obstacles: The orphan's quest is not an easy one. He or she is faced with many obstacles and in most cases, other characters are the impediments. Jealousy and greed are prime motivators for these characters. Often, it is a step-mother, step-sister or Aunt who imposes extreme hardship on the orphan, usually (as in *James and the Giant Peach*) in the form of hard work, beatings, and a lack of food. Because orphans have no natural protection from family, they must stand on their own to conquer their problems. Assistance is always provided at a crucial moment and is often rendered by supernatural means in the form of magical beings, talking animals or enchantment of inanimate objects.

Rewards: After overcoming obstacles, orphans are often rewarded with marriage, wealth and power. Other orphans are rewarded by being saved from monsters or finding a home.

Punishment: Those who oppose orphans are usually punished, often by death. The death of these evildoers is generally accomplished through *deus ex machina*, or any artificial or improbable device resolving the difficulties of a plot.

THE ORPHAN APPEAL



Illustration from *Harry Potter*
by Mary GrandPré

Although the reality of orphans in society is diminishing, the continued use of orphan characters in children's literature indicates that they still have great meaning for readers. "The literary orphan dramatizes the difficulty of being a child," says Kansas State University assistant English professor Philip Nel. "That is, to be a child is to be subject to the forces of people more powerful than you are. Well, being an orphan

makes the powerlessness of childhood that much more visible. At the same time, many literary orphans are resilient characters who, despite their relative lack of power, find the emotional resources to beat the odds and make their way in the world." The loss of a character's parents allows the author the freedom to let his or her imagination run wild. Orphan stories also allow the reader to think about growing up. Because an orphan is prematurely separated from his or her family, orphans offer a preview of the excitement and anxiety of growing up and leaving home. Orphans

in literature empower children to think and act for themselves and to become strong independent people.

USE OF THE ORPHAN ARCHETYPE IN JAMES



James and the Giant Peach meets all the requirements of a classic orphan tale. James' parents are killed and so he is left to his wretched aunts Spiker and Sponge. Spiker and Sponge mistreat James through verbal abuse and manual labor. He is isolated and alone, left with no one who even remotely resembles a family. James encounters assistance in the form of a magical being that provides

him with a potion which creates a giant peach. James' quest has begun and he climbs into the peach to find a group of human-sized insects who become his new family. They encounter a number of obstacles including a shark attack and a visit from Spiker and Sponge who are determined to steal the lucrative peach from James' possession. Although the aunts manage to obtain the peach, through a *deus ex machina* they are killed when it falls and flattens them like pancakes. With a combination of smarts, some helpful friends, and a little bit of magic, James prevails and earns his reward – a new family and a sense of belonging.

Sources:

"From Folktales to Fiction: Orphan Characters in Children's Literature" by Melanie A. Kimball <http://findarticles.com/p/articles/mi_m1387/is_3_47/ai_54836352/>

"Lost and Found: The Orphaned Hero in Myth, Folklore, and Fantasy" by Terri Windling <http://www.endicott-studio.com/rdrm/rOrphans.html>

"Orphans in Literature Empower Children" by Deirdre Donahue, <http://www.usatoday.com/life/books/2003-07-02-bchat_x.htm>

INSECTS

The following two pages include general information about insects as well as specific information about the five animals in the musical. It can be used as supporting material for the "Personification" lessons on pages 15 and 19 as well as the "Insects" lessons on pages 18 and 21.

James and the Giant Peach is infested with insects and other creepy crawly critters. James meets his insect friends on the giant peach and they become a sort of adoptive family for him. Below are definitions of some terms that might be helpful when discussing the characters as well as descriptions of the real insects represented in the musical on the following page.

ARTHROPODS:

An Arthropod is any invertebrate animal with an exoskeleton (a skeleton on the outside of the body), a body divided into distinct parts, jointed legs and appendages, and bilateral symmetry (both sides of the body are the same). Arthropods constitute over 90% of the animal kingdom and are classified in the phylum Arthropoda. Animals such as insects, arachnids, and crustaceans are all included in the Arthropoda phylum.

INSECTS:

Insects are a class of arthropods that include grasshoppers, butterflies, beetles and ants. There are approximately 1,000,000 species that can be described as insects. All insects have three body regions: a head, thorax, and abdomen. They have six legs and can have one or two pairs of wings attached to the thorax. Insects also have two antennae and lateral compound eyes.

ARACHNIDS:

Arachnid is a class of arthropods that includes spiders, scorpions, ticks and mites. There are approximately 65,000 species that can be described as arachnids. All arachnids have two body regions: the cephalothorax and abdomen. They have eight legs, no antennae and the mouth parts are modified appendages (fangs in spiders).

BUGS:

Bug is a general term used to describe an insect or other creeping or crawling invertebrate animal.

PESTS:

A pest is an organism that may cause illness or damage or consume food crops and other materials important to humans.

INSECT FACTS

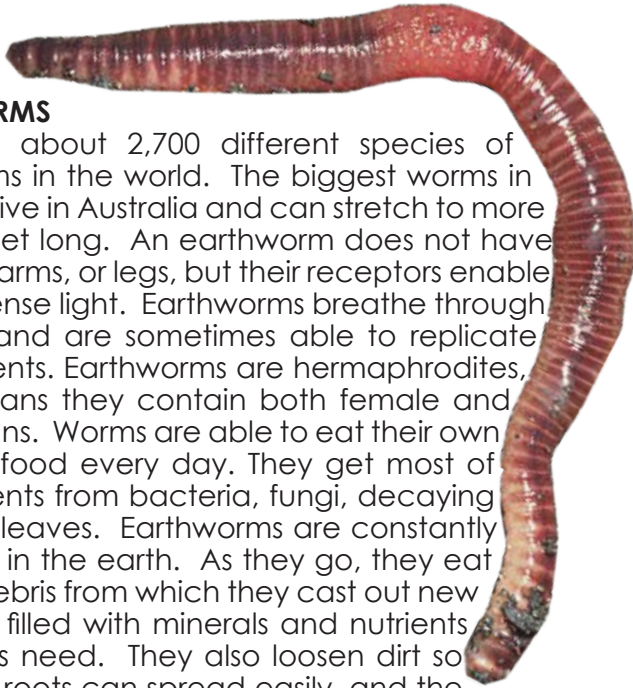
- Three out of four creatures on the planet are insects. They outnumber all other creatures.
- If all insects vs. all other animals were placed on a scale, the insects would weigh more.
- There are more species of insects than any other kind of creature.
- Fossil records prove that insects began to inhabit the earth 150 million years before dinosaurs.
- Insects have adapted to live and survive among all groups of organisms and in all types of habitats except for the ocean.
- An ant can lift over 50 times its weight.
- Fleas can jump the equivalent length of a football field.
- The mayfly has one of the shortest life spans. Adults only live for a few hours after emerging from the water.
- The queen termite has the longest life span and lives for 10-15 years.



INSECTS

CENTIPEDES

Centipedes are arthropods, but not insects. There are estimated to be 8,000 types of centipedes found worldwide in many geographic locations including tropical rainforests, deserts and even the Arctic Circles. Centipedes are elongated animals with one pair of legs per body segment. Although the name is Latin for hundred (centi) foot (pedis), centipedes can have a varying number of legs from under 20 to over 300. Despite how many legs they actually have, centipedes always have an odd number of pairs of legs. They can have 15 or 39 pairs of legs, but never 20 pairs.



EARTHWORMS

There are about 2,700 different species of earthworms in the world. The biggest worms in the world live in Australia and can stretch to more than 11 feet long. An earthworm does not have any eyes, arms, or legs, but their receptors enable them to sense light. Earthworms breathe through their skin and are sometimes able to replicate lost segments. Earthworms are hermaphrodites, which means they contain both female and male organs. Worms are able to eat their own weight in food every day. They get most of their nutrients from bacteria, fungi, decaying roots and leaves. Earthworms are constantly burrowing in the earth. As they go, they eat dirt and debris from which they cast out new soil that is filled with minerals and nutrients that plants need. They also loosen dirt so that plant roots can spread easily, and the narrow tunnels they make allow water and air to enter the earth to reach the plant roots.

GRASSHOPPERS

Grasshoppers are insects. There are thought to be as many as 18,000 types of grasshoppers thriving in all types of habitats all over the world with the exception of the North and South Poles. Grasshoppers have five eyes, but no ears. They are herbivores, which means they eat only plants. A grasshopper can make a chirping noise by rubbing its back leg along a stiff vein in the front wing. The leg has small teeth on it, like a comb, which buzz and vibrate. Male grasshoppers chirp to attract females for mating and to ward off rivals.

LADYBUGS

A ladybug is a type of beetle. The 5,000 known species are found worldwide with over 350 species living in North America alone. Ladybugs eat aphids and scale insect, which are small bugs that are pests in fields and gardens. Because of this, farmers in Europe have welcomed ladybugs on their vines to eat insect pests for more than 1,500 years. Even today farmers and gardeners order ladybugs to protect their plants from pests. People once thought that ladybugs had magical powers and in early America, it was said that a ladybug would bring good luck if it was found in the house in winter.

SPIDERS

Spiders are arachnids, not insects. There are more than 38,000 types of spiders and they live almost everywhere. Spiders were one of the first predators to walk on land, starting more than 350 million years ago. Most spiders have 8 eyes so they can look in several directions at once. Their eyes are usually very small and simple and can notice if something moves nearby, but often cannot see shapes very well. Although a spider doesn't have a nose or ears, hairs covering the spider's legs are able to sense touch, vibrations, and sound. A spider's silk can be used for making egg sacs, wrapping prey, or building webs. A large web may contain more than 100 feet of silk thread and can take about an hour to build. Once finished, the spider sits in the middle or at the edge and holds the web so it can feel the vibration of a trapped insect. It then wraps the prey in silk and bites. Spiders do not chew and swallow food; they drink it. First the spider stabs its prey with its fangs and injects poisonous venom to stop it from moving. Then it drips digestive juices on its meal, turning the animal's insides into liquid so the spider can slurp them out.



BUOYANCY

The following two pages include general information about buoyancy as it relates to the peach floating in the water. It can be used as supporting material for the "Floating" lesson on page 18 and the "Buoyancy" lesson on page 21.

HOW IT ALL BEGAN: THE ARCHIMEDES PRINCIPLE

It was the second century BC in Ancient Greece and King Hieron was worried that his crown was not pure gold. The King set Archimedes the difficult task of determining whether or not the goldsmith had taken some of the gold for himself and added silver to the crown to make it the correct weight. Wondering how to solve the King's problem, Archimedes took the crown home and weighed it. He also weighed a piece of pure gold, but the crown and the gold weighed exactly the same.



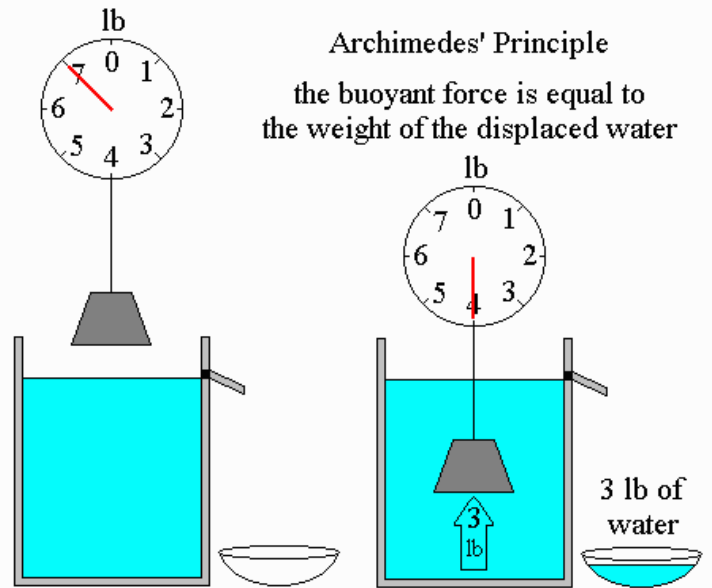
Archimedes was perplexed. One evening as he lowered himself into a filled-to-the-brim bathtub, the water overflowed onto the floor. Archimedes shouted "Eureka!" and ran to the palace. He had realized that when an object is placed in water it displaces an amount of water equal to its own volume.



Archimedes applied this principle to the crown. To demonstrate for the King he filled a large jar with water and set it in a bowl to catch any water that might overflow. Then Archimedes lowered the crown into the jar and measured the water that spilled into the bowl. He then filled the jar again with the same amount of water and lowered the piece of pure gold into the jar. He measured the amount of water that spilled into the bowl and, to the King's surprise, found that the gold had spilled less water than the crown, proving that the goldsmith had taken some of the gold intended for the crown and replaced it with silver.

Archimedes explained that silver is lighter than gold, so, to make up the correct weight, extra silver was needed to make the crown. This meant that the volume of the crown was slightly larger than the gold, which is why the crown spilled more water.

After conducting more experiments, Archimedes discovered that there is an upward force called buoyancy, produced by liquid, which supports an object. He found that the buoyant force is always equal to the weight of the water or liquid that is displaced by the object. This is known as the Archimedes Principle.



Archimedes could now explain why ships float even though they are heavy. He also found a way to measure the density of solid objects.

Source:
Archimedes, Peter Lafferty (Wayland Limited, 1991)

BUOYANCY

BUOYANCY

Buoyancy is defined as the tendency of something to float or to rise when in a fluid. When an object is placed in water, there are two primary forces acting on it. The force of gravity yields a downward force and a buoyant force yields an upward force. The gravitational force is determined by the object's weight and the buoyant force is determined by the weight of the water displaced by the object when it is placed in water. If the gravitational force is less than the buoyant force the object will float, but if the gravitational force is greater, the object will sink.

SINK OR SWIM?

If you place an ice cube in a glass of water, the ice cube will displace or push away some of the water causing the level in the glass to rise and the ice cube to float partially in and partially out of the water. Gravity is pulling the ice cube down while buoyant force is pushing it up. How far in or out of the water your ice cube rests depends on its density (mass divided by volume).



Like the ice cube, ocean liners float even though they are made of steel. The ability of a boat to float depends on its average density which takes into account not only the weight of the steel hull, but also the air trapped inside. A ship with a large volume of trapped air has a lower density than that of the water it sits in, so it is able to float. When a ship's hull is filled with cargo, it floats lower in the water because there is less trapped air making it denser. If the ship loses enough of its capacity to hold trapped air it will sink.

Gravity, buoyancy and density all work together to determine whether something will float or sink, and thanks to Archimedes, we have a scientific way of explaining why this happens.

TERMS

Archimedes Principle:

A law of physics stating that the apparent upward force (buoyancy) of a body immersed in a fluid is equal to the weight of the displaced fluid.

Buoyancy:

1. The ability to float in a liquid or to rise in a fluid
2. The property of a fluid to exert an upward force (upthrust) on a body that is wholly or partly submerged in it

Density:

1. The quantity of something per unit measure, especially per unit length, area, or volume.
2. The mass per unit volume of a substance under specified conditions of pressure and temperature.

Displacement:

The weight or volume of a fluid displaced by a floating body, used especially as a measurement of the weight or bulk of ships.

Gravity:

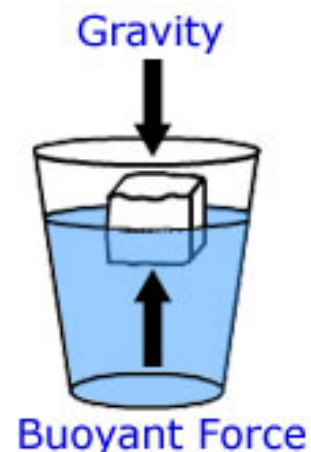
1. The natural force of attraction exerted by a celestial body, such as Earth, upon objects at or near its surface, tending to draw them toward the center of the body.
2. The natural force of attraction between any two massive bodies, which is directly proportional to the product of their masses and inversely proportional to the square of the distance between them.

Hydrometer:

An instrument used for measuring the density of liquids.

Volume:

The amount of space taken up by something.



LIFECYCLE OF A PEACH

The text below includes information about the origins and life cycle of peaches. It can be used as supporting material for the "Exploring the Senses" lesson on page 18 as well as the "Life Cycle of a Peach" lesson on page 21.

ORIGINS

Peaches originated in China where they have been cultivated since at least 1000 B.C. In China, peaches are symbols of immortality and unity and the peach tree is considered to be the tree of life. Because of this, the image of a peach was placed on pottery and received as a gift with great esteem.

Travelers on the silk roads carried the peach seed west to Persia, earning it the botanical name *Purnus persica*. In many languages, the name for peach actually means Persia. In Persia, peaches were discovered by Alexander the Great who introduced them to Greece by the year 322 B.C.

By 50 to 20 B.C., peaches, called Persian apples by the Romans, reached Rome where they were grown and sold for the modern equivalent of \$4.50. Once the Romans cultivated the fruit, they were able to transport it north and west to other countries in their European empire.

Once Europeans had peaches, they brought them overseas to the Americas. In the early 1600s Spanish explorers brought peaches to South America and the French introduced them to Louisiana. The English took them to their Jamestown and Massachusetts colonies and Columbus even brought peach trees to America on his second and third voyages. By 1700, missionaries had established peaches in California.

Still today, China remains the largest world producer of peaches, with Italy as the main exporter of peaches in the European Union. In the US, California produces more than 50% of peaches even though Georgia is known as the Peach State.

LIFECYCLE

Peaches grow on deciduous fruit trees and go through a series of stages similar to apples, pears and plums.

Peach pits contain seeds that once planted, will grow into a new peach tree. In order for the tree to start growing, the pit has to crack open so the seed can be planted in the ground. Sometimes animals like squirrels will eat peaches and if the animal chews on the pit, they may crack it open to reveal the seed.

Most peaches are grown on orchards where farmers use machines to crack the pits open and then plant the seeds. The seed sends roots down into the soil, and soon a stem and leaves appear above the soil. Over time, the stem grows taller and hardens into a tree trunk. After a few years, the peach tree will be large enough to grow flowers and then the tree is ready for peaches.

A peach tree goes through several stages before it can produce fruit. Over winter, peach trees are dormant, meaning the fruit buds are relatively inactive. In the beginning of spring, buds begin to swell on the tree and scales are separated to expose lighter colors. Next, the bud begins to show more green until a pink tip peeks through and finally blossoms. Wind and insects pollinate the blossoms and after about 10 days, once 75% of the flower petals have fallen, the fruit will start to set on the tree. Over the summer, the peaches grow and ripen and are then harvested and sold.

PEACH FACTS

- Nectarines are a variety of peach with a smooth skin.
- The juice from peaches can be found in many moisturizers.
- The peach is a member of the rose family.
- The peach, along with plums and apricots, is classified as a drupe – a fruit with a hard stone.
- The peach is the state fruit of Georgia and South Carolina. The Peach blossom is the state flower of Delaware.
- Some believe that peaches have fuzzy skin to protect them from insects and disease.



LESSONS

Elementary School Language Arts

BEFORE THE SHOW: Exploring Themes – Good vs. Evil

Roald Dahl uses the theme of good versus evil in most of his novels, including *James and the Giant Peach*. Dahl leaves no room for doubt as to who are “good” and “bad” characters. He paints a black and white picture of human morality, allowing readers to draw easy conclusions about how people should behave and what happens to people when they are bad. Dahl’s good vs. evil sensibility is similar to that of many fairytales.

Have your students read pages 3 and 5 of the Student Guide to familiarize themselves with the play they are about to see and to provide base knowledge for the lesson. Have a discussion about your students’ concept of good vs. evil and then contextualize the concept by examining familiar fairytales such as *Cinderella* or *Snow White*.

- ➡ How does a “good” person act and look?
- ➡ How does an “evil” person act and look?
- ➡ How are good people rewarded?
- ➡ How are evil people punished?
- ➡ Explore the stereotypes of good and evil characters such as a mother or a step mother. How are these perpetuated despite their inaccuracies?
- ➡ Do you think anyone is completely good or completely evil? Why or why not?
- ➡ Which characters in [fairytale] are good? Why? How are they rewarded?
- ➡ Which characters in [fairytale] are evil? Why? How are they punished?
- ➡ From the summary you read, which characters do you think are good and which are evil? Why?

UNDERSTANDING THROUGH EXPLORATION: Personification

Throughout *James and the Giant Peach* Roald Dahl uses personification to bring the insect characters to life. After attending the musical, have your students read pages 11-12 in the Student Guide. As a class, create a T-chart to document the descriptions of the actual insect versus the insect character from the musical using [page 11 of the TIG](#) as a reference. Next, discuss the concept of personification.

- ➡ How were the actual insect’s features used to create the insect character? What are the similarities and differences between the two?
- ➡ Was the character an accurate portrayal of the insect in terms of behavior and physical traits?
- ➡ What would you have changed about the character to make it more like the actual insect?

Have your students choose an insect not portrayed in the musical. They should find and write down 5 to 10 descriptive facts about the insect and based on that information, create another insect character that might be included in *James and the Giant Peach*. After listing the facts about the real insect, students should write a short story describing their character using the responses to these questions:

- ➡ How does your character act?
- ➡ How does your character look?
- ➡ How does your character sound?
- ➡ What does your character do?

AFTER THE SHOW: Poetry

Roald Dahl often uses narrative poetry in his novels to describe the characters. The poem on the following page is an excerpt from *James and the Giant Peach* (p. 134-139) in which James describes each of his insect friends to the New York City police officers. (Portions containing characters that aren’t in the musical have been omitted.)

Print out a copy of the poem for each of your students and read aloud as a class. Discuss the descriptions Dahl uses to characterize each of the insects. Next have your students choose a character from the musical and use his or her name to create an acrostic poem that describes their physical and personality traits. Students should draw a picture of their character to accompany the poem and then take turns reciting their poems for the class.

Poem from *James and the Giant Peach*

by Roald Dahl



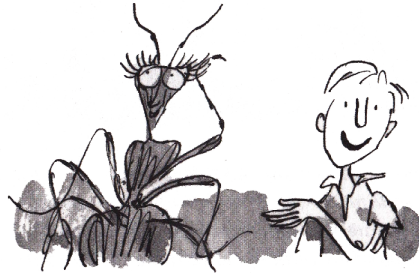
"My friends, this is the Centipede, and let me make it known
He is so sweet and gentle that (although he's overgrown)
The Queen of Spain, again and again, has summoned him by phone
To baby-sit and sing and knit and be a chaperone
When nurse is off and all the royal children are alone."
("Small wonder," said a Fireman, "they're no longer on the throne.")



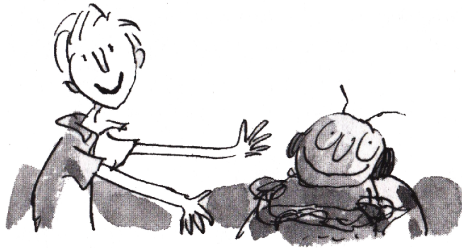
"The Earthworm, on the other hand,"
Said James, beginning to expand,
Is great for digging up the land
And making old soils newer.
Moreover, you should understand
He would be absolutely grand
For digging subway tunnels and
For making you a sewer."
(The Earthworm blushed and beamed with pride.
Miss Spider clapped and cheered and cried,
"Could any words be truer?")



And the Grasshopper, ladies and gents, is a boon
In millions and millions of ways.
You have only to ask him to give you a tune
And he plays and he plays and he plays.
As a toy for your children he's perfectly sweet;
There's nothing so good in the shops –
You've only to tickle the soles of his feet
and he hops and he hops and he hops."
("He can't be very fierce!" exclaimed
The Head of all the Cops.)



“And here we have Miss Spider
With a mile of thread inside her
Who has personally requested me to say
That she's never met Miss Muffet
On her charming little tuffet –
If she had she'd not have frightened her away.
Should her looks sometimes alarm you
Then I don't think it would harm you
To repeat at least a hundred times a day:
‘I must never kill a spider
I must only help and guide her
And invite her in the nursery to play.’”
(The Police all nodded slightly,
And the Firemen smiled politely,
And about a dozen people cried, “Hooray!”)



“And here's my darling Ladybug, so beautiful, so kind,
My greatest comfort since this trip began.
She has four hundred children and she's left them all behind,
But they're coming on the next peach if they can.”
(The Cops cried, “She's entrancing!”
All the Firemen started dancing,
And the crowds all started cheering to a man!)

LESSONS

Elementary School Science

BEFORE THE SHOW: Insects

Aboard the giant peach, James befriends five giant insects; Green Grasshopper, Ladybug, Spider, Earthworm and Centipede. Before attending the musical, teach your students about these insects using [pages 10-11 of the TIG](#) as a reference. First, have students write down some descriptive words or sentences describing what they already know about insects in general and each of the specific insects in the musical. Next, discuss as a class what the students wrote down and transfer their ideas to the chalkboard. Following the open discussion, teach your students about each of the five insects' habitat, physical traits and behavioral traits while comparing these facts to what the students already came up with.

UNDERSTANDING THROUGH EXPLORATION: Floating

The giant peach floats across the Atlantic Ocean from England, just as a ship would. Teach your students about why and how things float using [pages 12-13 of the TIG](#) as a reference. First conduct an experiment.

What You'll Need:

Clay (can be substituted with Aluminum Foil)
Tub or Bowl
Water

Have students form groups of two. Each pair will receive a tub/bowl filled halfway with water and 2 pieces of clay of approximately the same size. Before beginning, point out to your students that each person has received a piece of clay that is the same size and weight. One student in each pair will form a ball out of their clay and the other will make a boat-like shape. Ask your students what they think will happen when they put each in the water. Will they float or sink? Students should then place the clay ball and boat into the water.

Have a discussion about what happened asking student why they think the ball sank and the boat floated. After students have hypothesized, discuss the concept of buoyancy by introducing Archimedes' revelation as well as some basics on gravity and buoyant force.

AFTER THE SHOW: Exploring the Senses

After attending *James and the Giant Peach* students might be curious about how peaches grow, what they really look like and how they taste. This lesson should encompass the five senses as well as explain how peaches grow. Use [page 14 of the TIG](#) as a reference. First, have an open conversation about what your students noticed about the peach in the musical.

- ➔ How did the peach grow?
- ➔ Do you think a peach could grow this big in real life? Why?
- ➔ What did the peach look like?
- ➔ What do you think it tasted and smelled like?

Next, teach your students about the life cycle of a peach tree. You may want to have them refer to page 14 of the Student Guide for a visual aid. After this lesson, pass around whole peaches for students to examine as well as peach slices for each student to taste. On a sheet of paper, have students describe the peach using the five senses as a guideline and then discuss as a class.

- ➔ What does the peach look like?
- ➔ How does the peach feel?
- ➔ How does the peach smell?
- ➔ How does the peach taste?
- ➔ What does the peach sound like (when chewing)?
- ➔ How did your expectations about taste, scent, feel, etc. change after the experiment?
- ➔ How did the way the peach grows in the musical differ from how it actually grows?
- ➔ Did the real peach and the musical's peach look the same? Why or why not?

LESSONS

Middle School Language Arts

BEFORE THE SHOW: Exploring Themes – Orphans in Literature

Roald Dahl often uses orphans as the main characters in his books. Sophie in *The BFG*, the narrator in *The Witches*, and of course, James in *James and the Giant Peach* are all left without parents. Discussing James in the framework of an orphan tale is very useful when trying to understand the themes set out by the author.

Have your students read pages 9-10 of the Student Guide and then discuss the elements of orphan tales. You may want to use [pages 8-9 of the TIG](#) as a reference.

- ➔ What are some recurring character types in orphan tales?
- ➔ What are the plot elements of an orphan tale?
- ➔ What are some familiar orphan tales that you may have read or watched? How are they all similar? How are they different?

Next, have your students pair up and choose an orphan tale such as *Cinderella* or *Snow White* that can be discussed in the terms described in the Student Guide. They should dissect the plot by describing and documenting the five common patterns found in orphan tales (Mistreatment, Quests, Obstacles, Rewards and Punishment) as they apply to their chosen story.

Follow Up: After attending the musical, have students compare *James and the Giant Peach* to their chosen orphan tale. They should write a short paragraph explaining how the character types and plot elements are similar and different and then share their results with the class.

UNDERSTANDING THROUGH EXPLORATION: Personification

Throughout *James and the Giant Peach* Roald Dahl uses personification to bring the insect characters to life. After attending the musical, have your students read pages 11-12 of the Student Guide. As a class, create a T-chart to document descriptions of the actual insect versus the insect character from the musical. You can use [page 11 of the TIG](#) as a reference.

Next, discuss the concept of personification.

- ➔ What is personification?
- ➔ How is personification used in *James and the Giant Peach*?
- ➔ How were the actual insect's features used to create the insect character? What are the similarities and differences between the two?
- ➔ Was the character an accurate portrayal of the insect?
- ➔ What would you have changed about the character to make it more like the actual insect?

Have your students choose an insect not portrayed in the musical. They should research their insect and using the descriptions in the Student Guide as a model, write 1-2 paragraphs describing their insect. From the information they have gathered, students should invent a character out of their insect that might be included in *James and the Giant Peach*. They will create an artistic representation of their character (drawing, puppet, clay model, etc.) and write a short monologue to present to the class addressing these questions:

- ➔ How does your character act?
- ➔ How does your character look?
- ➔ How does your character sound?
- ➔ What does your character do?
- ➔ How is your character similar and different from the actual insect?

LESSONS

Middle School Language Arts

AFTER THE SHOW: Poetry

Roald Dahl often uses narrative poetry in his novels to describe the characters. The poem below is an excerpt from *James and the Giant Peach* (p. 93-94) in which Centipede describes Sponge and Spiker in limerick form.

Print out a copy of the poem for each of your students and read aloud as a class. Discuss the descriptions Dahl uses to characterize the aunts, then teach your students about the limerick form. (Limerick: a humorous 5-line poem with a rhyme scheme of a-a-b-b-a. Lines 1, 2, and 5 have seven to ten syllables and lines 3 and 4 have five to seven syllables.) Next have your students choose a character from the musical and create a limerick poem following Dahl's model that describes the character. Students should recite their poems for the class.

POEM FROM *JAMES AND THE GIANT PEACH* by Roald Dahl

Aunt Sponge was terrifically fat,
And tremendously flabby at that.
Her tummy and waist
Were as soggy as paste –
It was worse on the place where she sat!

So she said, "I must make myself flat.
I must make myself sleek as a cat.
I shall do without dinner
To make myself thinner."
But along came the peach!
Oh, the beautiful peach!
And made her far thinner than that!

Aunt Spiker was thin as a wire
And as dry as a bone, only drier.
She was so long and thin
If you carried her in
You could use her for poking the fire!

"I must do something quickly," she frowned.
"I want FAT. I want pound upon pound!
I must eat lots and lots
Of marshmallows and chocs
Till I start bulging out all around."

"Ah, yes," she announced, "I have sworn
That I'll alter my figure by dawn!"
Cried the peach with a snigger,
"I'll alter your figure – "
And ironed her out on the lawn!

LESSONS

Middle School Science

BEFORE THE SHOW: Insects

Aboard the giant peach, James befriends five giant insects; Green Grasshopper, Ladybug, Spider, Earthworm and Centipede. Before attending the musical, teach your students about these insects using [pages 10-11 of the TIG](#) as a general reference. Discuss classifications such as arthropods, invertebrates, arachnids, etc. as well as anatomical features of each of the five insects in the musical. For a more in-depth lesson, you may want to do further investigation on simple anatomy by discussing specifics about earthworms or even performing a dissection lab. More information can be found at these websites:

- ➡ <http://www.naturewatch.ca/english/wormwatch/about/anatomy.html>
- ➡ <http://www.middleschoolscience.com/earthworm2.htm>

Next, students can conduct their own research on one of the other four animals in the musical, mirroring the earthworm lesson. They should write a 1-2 page report outlining classification, environment, behavioral and physical features as well as providing a diagram of their animal's anatomy.

UNDERSTANDING THROUGH EXPLORATION: Buoyancy

The giant peach floats across the Atlantic Ocean from England, just as a ship would. Teach your students about why and how things float using [pages 12-13 in the TIG](#) as a reference. First, have your students read page 13 of the Student Guide and have a discussion about buoyant force, gravity and density.

Next, have students form groups of 2 to conduct the buoyancy experiment outlined on [page 22](#).

AFTER THE SHOW: Life Cycle of a Peach

After attending *James and the Giant Peach* teach a lesson on peaches. Discuss the life cycle and historical facts about peaches using [page 14 of the TIG](#) as a reference. After students have read page 14 of the Student Guide, have an in-depth discussion about the stages of a peach tree's growth, from pit to fruit. Next, students should form pairs to research a different fruit or plant and track its life cycle by creating a visual representation such as a drawing or a chart. Each group can share their work with the class.

Buoyancy Experiment

In this experiment you will explore the concepts of buoyancy and displacement.

Materials:

- 2 sheets of aluminum foil (same size)
- 1 piece of clay
- 1 tub or bowl
- Water

Set Up:

1. Fill your tub halfway with water
2. Form a tight ball out of one sheet of aluminum foil
3. Form a ball out of your piece of clay, equal in size to the aluminum ball
4. Form a boat shape from one sheet of aluminum foil with a flat bottom and upturned sides.

Hypothesis: (Answer on a separate sheet of paper)

1. Which objects will sink?
2. Which objects will float?

Procedure:

1. a) With a ruler, measure and record the depth of your water: _____cm
b) Place foil ball in the water and measure the depth of the water: _____cm
2. a) Remove foil ball and measure the depth of the water: _____cm
b) Place foil boat in water and measure the depth: _____cm
3. a) Remove foil boat from water and measure the depth of the water: _____cm
b) Place clay ball in water and measure the depth: _____cm

Outcomes: (Answer questions on a separate sheet of paper)

1. Which objects sank?
2. Which objects floated?
3. What caused some objects to float and some to sink?
3. How much water did each object displace? (ex: 1a. minus 1b.)
Foil Ball _____
Foil Boat _____
Clay Ball _____
4. Compare the foil ball and foil boat results from Question 3. Why did this happen?
5. Compare the foil ball and clay ball results from Question 3. Why did this happen?

LESSONS

Discussion Topics and Prompts

The questions below related to *James and the Giant Peach* can be used as discussion starters or prompts for further exploration of plot and themes.

1. Describe James' character traits and compare and contrast your character traits with his. How are you alike and different from James?
2. Describe a time when you had to be brave and overcome difficult circumstances.
3. Describe your perfectly perfect day.
4. If James was mistreated by his aunts why did he stay with them? What are the advantages and disadvantages to his decision?
5. If you were James would you choose a life with your aunts or a life on your own? Why?
6. Describe the differences and similarities between the musical and the book (or movie).
7. Pretend you are James and have just left your home and all your friends. Write a letter to your friends about your adventure on the giant peach. Be sure to describe your insect friends and retell some important events.
8. Write a paragraph describing Aunt Spiker or Aunt Sponge. Using the characteristics listed, draw a picture to accompany the paragraph.
9. If you had a Magic Green Worm potion and could use it to enchant anything, what would it be? Why?

VOCABULARY

The following is a list of words and definitions used in the Student Guide to the Theatre.

ABOUT THE SHOW: The Story (page 4)

shrouded: hidden or covered

devoured: destroyed by eating

orphaned: to be left without parents

debt: something owed to someone

devise: to invent, plot, or scheme

botanist: a person who specializes in the study of plant life

divulge: to reveal, tell, or make public

coerce: to cause someone to do something by force or threat

ABOUT THE SHOW: The Characters (page 5)

wretched: miserable or unhappy

triumph: to gain victory

third-rate: inferior or poor quality

paternal: fatherly

nurturing: comforting

maternal: motherly

surrogate: substitute or alternate

pessimist: someone who expects the worst possible outcome

BEHIND THE SCENES: Scenic Design (page 6)

scenic designer: the person responsible for the scenery on stage. He or she designs the background and atmosphere for the entire production.

rendering: a scenic designer's two-dimensional drawing of how he or she wants the set to look.

technical director: the person in charge of all technical aspects of a show including set, lighting, and sound. He or she makes sure everything is safe and that the designers' visions are met.

carpenters: The people who build the set structures.

charge scenic artist: the person who leads and oversees the painting of the scenery for a theatrical production.

set model: a miniature, three-dimensional version of what will become the full set of a show. Set models help the designer visualize how the set will actually look on stage.

VOCABULARY

FOCUS: Insects (page 11)

arthropod: any animal without a backbone that has a segmented body, jointed limbs, and a hard shell that is shed periodically.

insect: any type of arthropods with the body clearly divided into a head, thorax, and abdomen, with three pairs of jointed legs, and usually with one or two pairs of wings.

arachnid: any type of arthropods, including spiders, that have a segmented body divided into two regions, four pairs of legs, and no antennae.

bug: an insect or other creeping or crawling invertebrate animal.

pest: an organism that may cause illness or damage or consume food crops and other materials important to humans.

FOCUS: What Floats Your Peach? (page 13)

buoyancy: the tendency of something to float or rise when in a liquid.

gravity: the attraction of two objects such as the Earth and something on its surface.

Archimedes: a Greek mathematician, physicist, and inventor who is best known for his work on hydrostatics, mechanics, and geometry.

FOCUS: How Peaches Grow (page 14)

pit: the hard stone that holds a seed inside some kinds of fruits

orchards: farms where fruit trees are grown.

roots: the parts of plants that grow underground and absorb water and minerals, store food, and hold the plant in place.

pollen: a fine yellow dust in the center of a flower produced by certain plants when they reproduce.

harvest: to gather crops.

cultivate: to raise or grow by labor and care.

FUN AND GAMES: Word Search (page 15)

composer: the person who writes the melodies and music of the songs.

lyricist: the person who writes the words that go with the composer's music.

playwright or librettist: the person who writes the story and the dialogue of a play, as well as many of the stage directions that the actors and director follow, to tell a story for the stage.

director: the person in charge of everything that happens onstage. The director provides the vision of how a show should be presented, works with the actors on their roles, develops the blocking, and is in charge of the rehearsals.

choreographer: the person who creates dances and arranges movements for a musical.

RESOURCES

Roald Dahl:

- Dahl, Roald. *Boy: Tales from Childhood*. Puffin Books, 2009.
- Dahl, Roald. *James and the Giant Peach*. Puffin Books, 2007.
- Roald Dahl's Official Website: <http://www.roalddahl.com/>
Includes biographical information, book descriptions and interactive games including the "Flying Peach Game" to accompany JAMES AND THE GIANT PEACH.
- Roald Dahl Fan Site: <http://roalddahlfans.com/>
A fan website dedicated to Roald Dahl and his writing. It contains links to Dahl's short stories and rare writings as well as articles, interviews, trivia and other Dahl facts.
- Roald Dahl Day Website: <http://www.randomhouse.co.uk/childrens/roalddahl/day/home.html>
A website created for Roald Dahl Day in 2006 featuring teacher resources and activities.
- *The Gremlins*: <http://roalddahlfans.com/books/gremtext.php>
A web version of Dahl's out-of-print first children's book, THE GREMLINS.
- "Shot Down Over Libya": <http://roalddahlfans.com/shortstories/shottext.php>
A web version of Dahl's first published short story, "Shot Down Over Libya."

Orphans in Literature:

- Donahue, Deirdre. "Orphans in Literature Empower Children"
http://www.usatoday.com/life/books/2003-07-02-bchat_x.htm
- Kimball, Melanie A. "From Folktales to Fiction: Orphan Characters in Children's Literature"
http://findarticles.com/p/articles/mi_m1387/is_3_47/ai_54836352/
- Windling, Terri. "Lost and Found: The Orphaned Hero in Myth, Folklore, and Fantasy"
<http://www.endicott-studio.com/rdrm/rrOrphans.html>
- "History of Orphanages"
<http://www.legends.ca/orphanages/orphanHistory.html>

Insects:

- Hall, Margaret. *Centipedes (Bugs, Bugs, Bugs)*. Capstone Press, 2006.
A vivid picture book that describes the physical characteristics, behavior, and habits of centipedes.
- Johnson, Jenny. *Children's Guide to Insects and Spiders*. Simon & Schuster Children's Publishing, 1997.
(Grades 3-6) This book identifies families of insects in short paragraphs of text accompanied by large-scale, full-color paintings and photographs. Well-labeled diagrams identify the body types and parts common to many insects and spiders. The book also offers a closer look at stages of development, habits, and special characteristics of specific insects.
- Llewellyn, Claire and Barrie Watts. *Ladybugs (Minibeasts)*. Children's Press, 2002.
This children's book features information on the ladybug's growth cycle and feeding habits, discusses why ladybugs are important, and other behavioral and physical traits.
- Miller, Sara Swan. *Grasshoppers and Crickets of North America (Animals in Order)*. Children's Press, 2003.
The books in the "Animals in Order" series will help you make sense of the animal kingdom. Each book focuses on a particular scientific grouping called an "order." You will discover that it is easier to learn about the traits and behaviors of animals if you first know which ones are most closely related.
- "Worm Watch": <http://www.naturewatch.ca/english/wormwatch/about/anatomy.html>
This website provides in-depth information about the earthworm including topics such as identifying earthworms, anatomy, ecology, and reproduction.
- "Spider Fact Index": <http://www.kidzone.ws/lw/spiders/facts.htm>
A kid-friendly website describing interesting facts about spiders including anatomy, silk, venom, webs and predatory habits.

RESOURCES

Buoyancy:

- Cole, Joanna. *The Magic School Bus: Ups and Downs*. Scholastic Inc., 1997.
Ms. Frizzle transforms the Magic School Bus into the Magic Bus-Boat and takes the class to the bottom of the lake where they learn about floating and sinking.
- Glover, David. *Flying and Floating*. Kingfisher Books, 2002.
How do hot-air balloons float? What is air made of? How is water power used? How does pollution affect our air and water supply? This book answers these questions and many more.
- Lafferty, Peter. *Archimedes*. The Bookwright Press, 1991.
This book examines the life of the mathematician and inventor Archimedes and his inventions, including the Archimedian screw and Archimedes Principle of buoyancy.
- “Buoyancy Basics”: <http://www.pbs.org/wgbh/nova/lasalle/buoybasics.html>
- “Why Do Boats Float and Rocks Sink?": <http://www.cs.dartmouth.edu/farid/sciencekids/float.html>

Peaches:

- Weiss, Ellen. *From Pit to Peach Tree*. Scholastic Inc., 2002.
This easy reader explains the life cycle of a peach, describing the stages of growth.
- “All About Peaches”: <http://www.thenibble.com/reviews/main/fruits/peach-facts.asp>

Learn more from behind-the-scenes at Goodspeed Musicals on our Facebook page.

<http://www.facebook.com/#!/pages/East-Haddam-CT/Goodspeed-Musicals/40716767792>

THEATRE ETIQUETTE

Seeing a musical at the Goodspeed Opera House is a unique and exciting experience. All the members of the production, both cast and crew, work hard to give you a great show. As an audience member, you also have an important job. You must help the performers give their best performance possible. You can do this by practicing these rules of theater etiquette:

- Do laugh when the performance is funny.
- Do applaud when the performance is over. Applause is how you say “Thank you” to the performer. The actors will bow as you applaud. That is how they say “Thank you for coming.”
- Do stand and applaud if you thought the show was outstanding.
- Don't forget to turn off your cell phone. A ringing or buzzing phone can be very distracting. It can also be embarrassing for you if it is your phone that is disrupting the show!
- Don't text during the performance.
- Make sure to visit the restroom before the production begins.
- Don't speak or whisper during the performance...whispering is still speaking, so only in an emergency should whispering occur.
- Remember that the Overture (introductory music) in musical theatre is part of the performance, so remain silent when the show begins.
- Don't take pictures during the performance. It can be very distracting to the actors and it can result in an accident.
- Don't put your feet up on the seats or kick the seat in front of you.
- Do remain in your seat for the entire performance. If you must leave, exit during intermission. In an emergency, calmly walk toward the nearest exit.

The Student Guide to the Theatre for *James and the Giant Peach* was prepared by **Joshua S. Ritter**, M.F.A, Education Director/Librarian and **Katherine Griswold**, Education Assistant