

# Science Fiction Fantasy & Fact



## Goals:

Describe some of the ways people differentiate between science fiction and fantasy. Create a fantasy or science fiction story using an insect theme.

## Grade Level: 9-12

## Subject Areas:

science and language arts

## Materials Needed:

- Reference books
- Classroom set, "Voyage to Hexatron"
- Classroom set, "Hooray for Hoppers"
- Classroom set, "Shrinking Simon and the Very Small Mistake"
- Drawing paper (optional)
- Crayons or markers (optional)

## Time to Complete:

One class period with homework, two 50-minute periods

## Background

In this activity your group can compare fantasy and science fiction and discuss how both types of literature can incorporate scientific fact to make entertaining and thought-provoking reading. They can also use their imaginations to write their own sci-fi or fantasy stories.

## Fact-Based Fiction vs. Magical Make-Believe

Fantasy and science fiction are two very popular types of literature. Although some people think that science fiction is a type of fantasy, many people differentiate between the two. "Real" science fiction, they say, is based on accepted scientific theories and is believable even though it's fictional and often futuristic. (Science fiction makes readers feel that the events in the story could happen if new scientific discoveries were made.) Fantasy, on the other hand, is usually improbable and often is not based on what we know about how the world "works." Even though it can incorporate scientific fact, fantasy often relies on magic, talking animals, and other fantastical events that probably couldn't happen regardless of any scientific discoveries that might be made in the future.

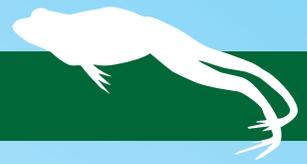
## Preparation

Have a class set of the stories and information listed in the "Materials" section (stories appear below).

## Procedure

1. Write the words science fiction and fantasy on a chalkboard or piece of easel paper and ask the kids to think of stories or books they've read that fall into one or both of the categories. Then ask someone to explain the difference between these two types of literature. (See "Background") Also ask the kids to think about what makes each one special and why an author might choose to write a science fiction or fantasy story. (Science fiction and fantasy stretch the reader's imagination and are sometimes used to comment on society in unusual, exciting, and thought-provoking ways.)
2. Pass out copies of "Voyage to Hexatron" and have the kids read it. Afterward ask the kids if the story was fantasy or science fiction and why. (It's an example of fantasy because dragonflies will never be able to fly through space; insects will never be able to talk, and so on) Then discuss the story, using these discussion points as guidelines:
  - What points was the author trying to make? (Most insects are not pests; we depend on insects for many services and products; JJ was generalizing, based on limited information; and so on)
  - Was fantasy an interesting way to present these points? Why or why not?

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- What parts of the story, if any, are true? (Although there are many insect pests, people depend on insects in many ways. The information about honey bees and carrion beetles is also correct.)
3. Tell the kids they can write their own insect science fiction or fantasy stories. Explain that their stories should reveal some observations or facts about insects. And they will probably have to do some research about their topic before they begin to write. If research is not an option, please use the "Hooray for Hoppers" story below. This has great facts about the common grasshopper that students may use as they work science fact into their science fiction story.

Here are some title suggestions:

- The Day Insects Could Talk
  - The Magic Cocoon
  - The Day the Insects Took Over TV
  - I Was Held Prisoner in an Ant Colony
  - The Caterpillar That Couldn't Stop Growing
  - I Was a Dinosaur Parasite
  - How the Insects Saved the World
4. As an alternative or preliminary assignment to writing original stories, you can have the kids finish the story "Shrinking Simon and the Very small Mistake". (For younger groups, discuss some of the interesting events that might happen to Simon after he shrinks.)

Afterward, have each person read his or her ending to the rest of the group.

## Extension

5. Review these story-writing steps with students if you want them to go through the writing process or would like to work with a language arts teacher on campus (optional).
- Select the main idea of the story
  - Research the topic
  - Briefly describe the characters and setting
  - Outline the sequence of events in the story
  - Write a rough draft, revise, and rewrite
6. Have students research and write their stories. They can also illustrate the most exciting parts.

## Young Adult Literature

- *Southcrop Forest*, by Lorne Rothman
- *The Dreamwalker's Child*, by Steve Voake
- *The Exchange Student*, by Kate Gilmore
- *The Computer Bug*, by Stephen Tucker
- *The Crow Chronicles (The Judgment, The Plague, and The Mob)*, by Clem Martini

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## Voyage to Hexatron

By Judy Braus

JJ picked up a stone from the bank of the stream where he was sitting. He flung it into the water. "That stupid bee!" he said, looking at the sole of his foot. "What a place for a bee sting! How am I going to play softball tomorrow?" But no one except his dog, Sammy, was there to listen.

"Maybe it'll help if I soak it," he said, dipping his foot in the cold water. Sammy just looked at him and scratched her belly with her hind paw.

"See! Bugs – fleas - are after you too! I tell you, Sammy, I've had it. I wish all insects would die. Who needs them? All they do is bite or sting or sometimes make you sick!"

Suddenly JJ heard a loud hum. "Ouch" he cried and slapped his neck, just in time to squash a big mosquito. He wiped the dead insect off his hand.

"Another one!" he exclaimed as he scratched the itch. JJ sighed and closed his eyes. He laid his head down on the soft moss. "Yeah, wouldn't it be nice ... a world without insects ... without any insects at all..."

Suddenly he woke with a start. Someone was tying him up! JJ struggled to get free, but he couldn't budge. Then he saw that he was wrapped tightly in a cocoon of white silk! JJ rolled over and looked up. There was the biggest caterpillar he had ever seen, spinning silk from its mouth. In no time Sammy too was covered with a silken mummy case.

"Hey, I can't move ... what's going on?" demanded JJ.

Out of This World and into Another

The caterpillar turned its fat green body slowly around. In a deep voice it said, "You are on your way to Hexatron, the planet of the insects. Your trial is scheduled for today."

"Trial? What trial?" asked JJ. "Am I going crazy? Caterpillars can't talk."

"Oh yes, we can. All insects can talk on Hexatron."

Then the caterpillar reared up on its hind legs and signaled to the sky with its front feet.

Within seconds a roar filled the air. Sammy whimpered and JJ looked up nervously. He couldn't believe his eyes. A huge dragonfly zoomed into view.

"Here they are, Anisop. You'd better hurry. You know the judge doesn't like to be kept waiting," the caterpillar said in its deep voice.

The caterpillar quickly tied JJ and Sammy to the dragonfly's back with a thick piece of silk. In the wink of an eye Anisop rose into the air. Up, up, up they sailed through wispy clouds of pink and charcoal. JJ saw the earth get smaller and smaller until it disappeared. "Where are you taking us?" JJ yelled to the dragonfly. But the dragonfly's wings were making so much noise that JJ's voice was lost.

Suddenly a tiny dot of orange appeared in the distance. It grew bigger and bigger until it seemed enormous.

"It's a planet, Sammy," shouted JJ.

But Sammy just whimpered softly and closed her eyes.

Anisop circled around, then zipped in and landed on a path.

JJ gazed around in amazement. The place looked like earth, but there were huge insects everywhere. Lots of crazy noises swirled around his ears - high-pitched chirps, whines, trills, and hums.

Suddenly three huge beetles marched quickly up the path. JJ and Sammy, still strapped to Anisop, trembled.

"The trial's about to begin, "the largest beetle reported. "The judge asked us to bring the prisoners to her immediately."

With sharp jaws, two beetles cut JJ and Sammy from Anisop's back and pulled off

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the cocoons. JJ and Sammy followed the beetles into a huge cave. The air was cold and musty, just like JJ's basement at home. A loud humming filled the air.

Soon JJ was standing in a courtroom. The judge was a huge preying mantis perched behind a low wall at the front of the room. On her right a honey bee guard stood at attention.

"Look, Sammy, an insect jury!" whispered JJ. The jury was made up of flies, beetles, ants, grasshoppers, and some insects JJ had never seen before.

There were hundreds of insect spectators in the courtroom too, buzzing, chirping, and humming away.

"State your name," the stern-faced judge commanded.

"I'm JJ, and this is my dog, Sammy."

Sammy growled a low growl.

"Silence!" the judge shouted. "You are charged with betraying insects! How do you plead?"

"Betraying insects?" asked JJ in amazement.

"The evidence, please," the judge demanded.

Guilty or Not Guilty?

A beetle stepped up to the stand. "Your Honor, the accused said insects don't do any good. He said he hated all of them and wished they'd all die."

The jury began to mumble and buzz.

Then a mosquito said, "I heard him say that the earth would be better off without any of us!"

And a honey bee worker got up and reported, "He said we're no good to people. No good!"

"Enough!" cried the judge. "Jury, have you reached a verdict?"

"Guilty!" the jury cried together.

"You have been declared guilty of betraying insects," stated the judge. "I now sentence you to work at two insect tasks. Now go, but leave your dog here."

"Your first task will be with the pollinators," said the guard bee.

"The what?" asked JJ.

"Never mind- you'll find out. Put on this cloak, "the bee directed.

As soon as JJ touched the cloak, he changed into a bee! There were hairs all over his body and pollen baskets on his hind legs.

All afternoon he and the other worker bees sucked nectar from flowers and collected pollen.

This is kind of neat, thought JJ. I wouldn't mind having six legs and being able to fly all the time.

But by the time the sun had set, JJ was exhausted. "Why do you need so much?" he asked one of the other bees.

"We take nectar back to the hive and make it into honey. It's food for all of us. We eat most of the pollen too. But some we carry from flower to flower. That helps them make fruit and seeds. Without bees and other insects there wouldn't be any oranges or apples, as well as lots of other fruits and vegetables, for you to eat."

"Gosh, I'd hate to go without fruit," said JJ.

Then suddenly JJ saw a bright flash in the sky.

"It's the signal," said the bee. "It's time to start your second task."

The Final Punishment

JJ and the bees zoomed down to a rotting log and met three brightly colored beetles.

"I'm Cara, leader of the carrion beetles of

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Hexatron. Eat this fungus, JJ, and you too will become a carrion beetle."

As the beetles and JJ flew off, JJ's antennae began to pick up an odor. Soon he and the beetles reached the body of a rabbit. It had been dead a long time. A lot of the meat was already gone. There were beetles, flies, bees, and ants all over the decaying meat. Bit by bit JJ and the other insects cleaned off the meat that was left.

"So this is what happens to all the dead animals in the woods. These insects help keep the woods clean," JJ said aloud.

Just then Anisop landed beside him.

"From what I just heard, my friend, I believe you're learning something," said Anisop, smiling for the first time.

"But many insects help you in ways you haven't even thought about. Take mosquitoes ... they are food for dragonflies and many fish, frogs, and other pond animals. In fact, many animals depend on insects for food. Why, without us, some birds, reptiles, amphibians, and even some mammals would have to change their diets or die."

"I just never thought of that," said JJ.

"Now I think you're ready to see the sacred Insect Gallery of Life. Follow me," said Anisop.

They swooped down into an extinct volcano. Inside the cone was a massive museum.

"I want you to see for yourself how important insects really are," said Anisop. And then he flew quickly out of sight.

JJ looked around. He walked up to one display. It was a picture of a huge cockroach. Underneath it read: "Blatty the Great. Blatty and her offspring were the most famous cockroaches in history. They helped scientists learn how the nerves in humans and other animals work."

JJ walked around to another display. It was filled with things made by insects. There were silk gowns made from the silk of moths, beeswax candles, and lots of other products.

But the display JJ liked best was a photo show. There were pictures of shimmering beetles and glowing fireflies and multicolored butterflies.

"Gosh, I didn't know there are so many beautiful insects, or how much good they do," said JJ in admiration.

Suddenly JJ slipped and fell over a log near one of the displays. Over and over he tumbled in the darkness. In a moment or two he opened his eyes. There he was, back on the stream bank. Sammy was asleep with her head in his lap.

"I'm me! I'm me again! And you're you, Sammy!" shouted JJ.

Just then a beautiful dragonfly zoomed by and snatched a mosquito from the air.

"You know, Sammy, we're pretty lucky to have insects around, aren't we?" JJ said.

Sammy just wagged her tail happily.

THE END

*From Ranger Rick (January 1985, pp 25-29)*

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## Shrinking Simon and the Very Small Mistake

Simon wasn't an ordinary kid. But you probably wouldn't know that just by looking at him. Walking down the sidewalk, for example, Simon looked just like all the other kids. He usually slouched, instead of standing up straight like his parents did. And he usually had half of his T-shirt tucked in and the other half hanging out.

But Simon was different. Unlike the other kids, he could shrink. Simon could make himself smaller just by squinching his eyes closed really tight and thinking about being small. Sometimes he would get smaller in class and his head would barely stick up above the desk. Mr. Pinto, his teacher, would get all upset and rush Simon to the school nurse. But the nurse could never find anything wrong with him. Simon just liked getting smaller.

The more Simon practiced getting smaller, the smaller he could get. When Simon first started shrinking, he could shrink only about an inch or two. But soon he was shrinking to about half his size, which he thought was pretty great. His mother and father, though, didn't think it was funny at all.

"Simon," they would say, "If you keep on shrinking like that you're going to get smaller and smaller until you're as small as an ant. And then one day you'll disappear right before our eyes!" Although Simon didn't like to worry his parents, he wasn't too concerned

about shrinking. At least, he wasn't until the day when he made a very small mistake.

On that day, Simon was out playing baseball. It was very hot, and Simon had been standing in the outfield for what seemed like hours. A ball hadn't come his way in four innings. As the sweat trickled down his neck, Simon wondered if he could shrink down small enough to find some shade under a grass blade. He squeezed his eyes shut and thought about being small. Really small. So small that blades of grass would provide some cool, cool shade.

When Simon opened his eyes, he was staring right into the face of an enormous grasshopper. The grasshopper's eyes were bigger than Simon's head. And its jaws looked very sharp. Simon started trembling and opened his eyes wide and thought BIG, BIG thoughts. But nothing happened. He tried again. Nothing.

Oh no, thought Simon. This is it. My parents were right. I'm in big- oops- I mean little trouble.

"Don't be frightened," the grasshopper said, as if grasshoppers had always been able to talk. "I don't eat people. I eat plants. Come on; let me show you my world." Since he didn't know what else to do, Simon climbed onto the grasshopper's back and they took off- hopping right over the foot of the girl playing center field.

***Now you finish the story...***

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## Hooray for Hoppers

By Diane Swanson

Your yard may be a "gymnasium" for some of the world's greatest athletes... grasshoppers! They can easily out hop humans and most other animals. And they're amazing in other ways too. But how much do you know about these leggy long jumpers?

### What Makes Grasshoppers Such Great Jumpers?

If you look at the size of a grasshopper's hind leg, you can see what makes it a whopper of a hopper. Hundreds of tiny, strong muscles in their legs help grasshoppers shoot themselves forward in surprisingly long leaps. An average grasshopper can jump a distance 20 times its length. Humans can jump only about 5 times their height - and that's with a running start.

### Do Hoppers Fly Too?

Most kinds of hoppers are able to fly. They have a broad back pair of wings and a narrow front pair. When the hopper's not flying, its tough front wings cover its delicate back ones.

### How Many Kinds of Hoppers Are There?

There are about 5000 different kinds of grasshoppers living around the world. And you can find them almost everywhere except in the Arctic and Antarctic. They live in marshes, deserts, rain forests, and fields.

### Do Hoppers Lay Eggs?

They sure do! Grasshoppers mate in late summer or early fall. After mating, the female digs a hole in the soil using tiny hooks at the tip of her abdomen (AB-doh-mun). She lays 20 to 100 eggs in the burrow (see below). Then she squirts thick, sticky foam over them. The foam hardens and keeps the eggs from getting moldy. Finally the female covers the burrow with dirt, leaving the eggs to hatch the next spring.

### How Do Hoppers Grow?

When a hopper hatches it looks like a little, wingless adult. Like all insects, it has a hard, shell-like skin that protects its soft insides.

As it grows, the hopper molts by splitting its skin and crawling out of it. The new skin hardens, and the

crumpled old skin's left behind.

Most grasshoppers molt six times before they reach their full adult size and develop wings. That usually takes forty to sixty days. A hopper's full size depends on what kind of hopper it is. The largest species is about six inches long. The smallest species is less than one-quarter of an inch long.

### How Do Hoppers Hear?

Grasshoppers hear sounds with their eardrums, as you do. But their ears aren't on their heads. They're on the sides of their abdomens and look like small spots.

### Do Grasshoppers Make Sounds?

Many kinds of hoppers never make any sounds. But some species do, and each has its own buzzy "song." The song is used by male hoppers to call for a mate. Most grasshoppers "sing" by scraping their back legs along their front wings as if they were fiddling. Other species try to attract females by making a loud, crackling noise with their wings when they fly.

### What Do Grasshoppers Eat?

Grasshoppers eat grasses and other plants. They have strong jaws that are great for chomping. And hoppers eat a lot too. Sometimes they become a problem to farmers by eating their crops.

### What Eats Them?

Many creatures, including other insects, snakes, spiders, owls, skunks, monkeys, and lizards will eagerly gobble grasshoppers. And believe it or not, in some countries there are people who think that hoppers make delicious and crunchy snacks!

### Do Hoppers Ever Get Out of Control?

In some parts of the world there are grasshoppers called locusts. During times when they have plenty of food, the locusts multiply rapidly. Then their numbers grow very large. When this happens they form a swarm - a group of millions or billions of locusts.

Swarms often take to the sky, and some have been large enough to block out the sun. They fly great distances, eating crops and other plants along the way.

A swarm of locusts can destroy a field of crops in just a few hours.

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## How Do Hoppers Protect Themselves?

If you've ever tried to hold a hopper, you may have ended up with brown liquid on your fingers. This liquid is bad-tasting stuff that hopper enemies usually don't like.

Some hoppers have another trick to keep from being eaten. They keep out of sight. Many blend in with

their surroundings so well, it's almost impossible to spot them.

But most hoppers stay out of trouble by relying on their strong legs to carry them to safety. After all, hopping is what hoppers do best!

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