Mrs. Ford's Class
11 – 20 NTI Assignments

Days 11- 20

My Language Arts Class will combine to meet both your Reading and Science curriculum. I have included topics on the subjects you will be covering in your Science classes. These topics include Sound Waves, Earth, Space, and Gravity. I have given you a time to read each article and answer the questions that go along with each one. This will count for both your Reading and Science classes for that day.

Day 11: "What Is Sound?"
Day 12: "Sound Waves"
Day 13: "Now Hear This!"
Day 14: "Sensing the World around Us"
Day 15: "What's It Like in Space?"
Day 16: "The International Space Station"
Day 17: "Gecko Feet & Space Robots"
Day 18: "What's Up In space?"
Day 19: "Famous Scientists – Sir Isaac Newton"
Day 20: "The Movement of the Earth"

I hope you all are doing well and staying healthy. I look forward to the day we all can be together again. Until that day comes, remember I am just a phone call away. Please let me know if you need anything.

Take care and see you soon!
Love,
Mrs. Ford

What Is Sound?

This text is excerpted from an original work of the Core Knowledge Foundation.

An alarm clock rings, a dog barks, a voice calls, "Time to get up!" Every day is full of familiar sounds, but what exactly is sound?

Sound is caused by a back and forth movement called vibration. Try this. Close your lips and hum. While you are humming, feel your throat under your chin. Do you feel something buzzing or vibrating? What you feel is caused by something moving back and forth very fast. When you hum, the vocal cords in your throat vibrate back and forth. This makes the air around them vibrate, which then creates the sound you hear.

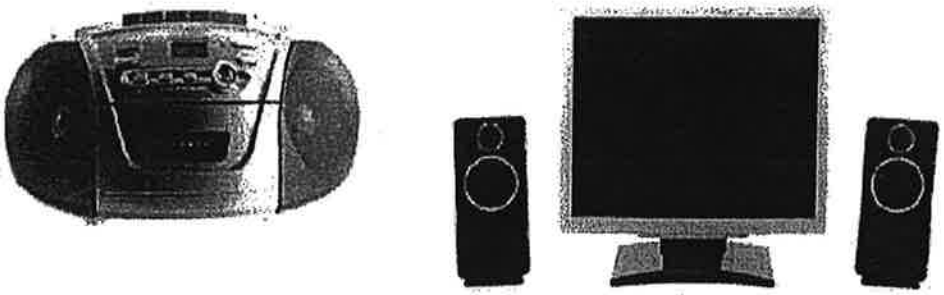
When you hum, your vocal cords vibrate to make sounds.

Sound, like light, is a form of energy. Also like light, sound moves in waves. Sound waves

move out from a vibrating object, making the air move back and forth in a way that we can't see.

Two things must happen to create a sound. First, something needs to vibrate and create sound waves. Then, something like air or another medium needs to carry the sound waves. You hear sounds more clearly if you are close to whatever is vibrating and making the sound waves. The farther away that the sound waves spread out, the weaker they get. That is why you can hear a friend standing right next to you better than if they are calling to you from across the street.

This is what a sound wave might look like if we could see it.



The next time you turn on your radio or TV, lightly put your fingers on the speakers. Do you feel the sound vibrations?

Sound travels not only through air, which is a gas, but through other mediums. In fact, sound can travel through solids, liquids, and gases.

Think about sound traveling through solids, like a window or even a closed door. If you are close enough, you can still hear sounds on the other side of a window or door.

How about liquids? Have you ever been underwater in a swimming pool when you have heard someone's voice or another sound? It probably sounded different than it would if you were not under water, but you were still able to hear it. This is an example of sound traveling through a liquid-the water in the pool.

One place that sound cannot travel is in outer space. Sound cannot travel through the emptiness, or vacuum, of space. There is no sound in outer space because there is no medium to carry it.

Sound travels through solids, liquids, and gases (air).

Name: _____ **Date:** _____

1. How does sound energy move?

_____

_____

_____

2. What are two things that are needed for sound to travel?

_____

_____

_____

3. What is the main idea of this text?

_____

_____

_____

Sound Waves

This text is adapted from an original work of the Core Knowledge Foundation.

Light and sound can both travel through mediums. A medium is a substance that light or sound can travel through, like a solid, a liquid, or a gas. However, there is a difference. Sound must have a medium to travel through-a solid, liquid, or gas. Light, on the other hand, does not need a medium. Light can travel through the emptiness, or vacuum, of outer space. Sound cannot.

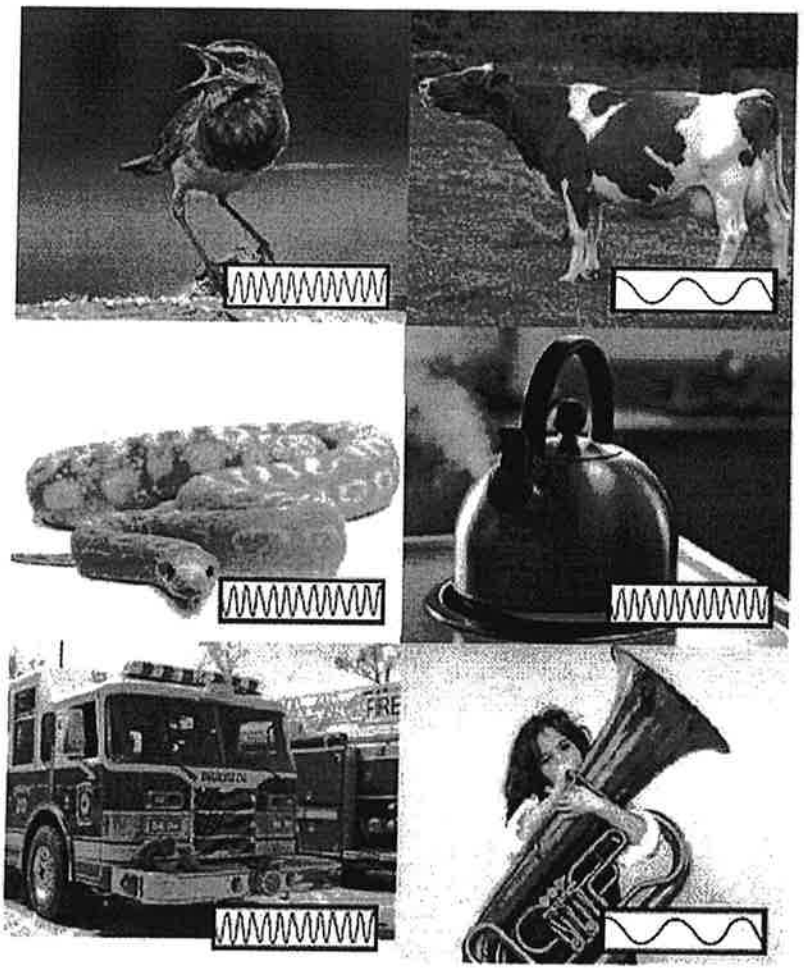
The speed at which light and sound travel is also different. Light travels much faster than sound. There are important ways that light and sound are similar. They are both forms of energy that travel in waves. There are also other similarities.

Light waves can be different lengths. Some are long and some are short. It is the length of a light wave that makes it appear to be a particular color.

Perhaps you are wondering whether sound waves differ from one another. Imagine these two sounds-a baby crying for its mother and an adult yelling. Both of these are sounds. The sound waves of each travel through the same medium, air, so they are alike in that way. But a baby crying surely sounds different than an adult yelling! The baby makes a high-pitched, "screeching" sound. When an adult yells, it is a low- pitched, deep tone. Could this difference in pitch, or how high or how low a sound is, come from different kinds of sound waves?

Both of these sounds travel through air. How are they different?

The answer is yes and it has to do with the length of the sound waves! It helps if we first understand how vibrations affect sound waves. Faster vibrations produce shorter sound waves, which make sounds with a higher pitch. The baby's screeching sound vibrates very rapidly, making shorter, but more, sound waves. Can you think of some other sounds that have a high pitch? Slower vibrations produce longer waves, which make sounds with a lower pitch. A yelling voice makes longer, fewer waves so you hear a lower pitch. Pitch describes the highness or lowness of a sound. Can you think of some sounds that have a low pitch? Try changing your voice pitch. Can you speak in a high, squeaky voice? Can you speak in a low, rumbling voice?



Which sounds are high-pitched? Which are low-pitched?

Name: _____ **Date:** _____

1. Sound and light are both forms of energy that travel in what?

2. Describe how vibrations affect the length of sound waves.

3. How does the length of a sound wave affect the way it sounds? Support your answer with details from the text.

4. What is the main idea of this text?

Now Hear This!

Each year, a few serious scientists are awarded Nobel Prizes. And each year, some other scientists get much sillier awards: the Ig Nobel Prizes. The Ig Nobels award scientists whose research first makes people laugh-and then makes them think. Back in 2006, Howard Stapleton won the Ig Nobel Peace Prize. What did he do to win? He invented a machine to repel kids!

photos.com

Adults use sound to repel kids, but some teens find a way to bite back

He calls his invention the Mosquito. It makes an irritating, high-pitched noise. Kids can hear the annoying sound, but adults cannot. Stapleton hoped store owners could use the device to keep unwelcome kids from hanging around their shops.

When something-such as a barking dog, a ringing phone, or the Mosquito-makes a noise, it creates tiny vibrations. Those vibrations make the air around the object move. The vibration travels through the air as a **sound wave.**

Low-pitched sounds like a foghorn's have a low **frequency.** That means the noise travels in few waves per second. High-frequency noises travel in many waves per second. Those noises sound high-pitched-like the shrill Mosquito.

The reason that older people can't hear the high-pitched Mosquito is because they have older ears. As a person ages, special cells inside the ear called hair cells start to die. As a person's hair cells die, it becomes harder to hear high-frequency sounds.

Frequency is measured in units called **Hertz (Hz).** The Mosquito tone measures up at 17,000 Hz. Hardly anyone older than 30 is able to hear frequencies that high, but kids can!

Howard Stapleton's invention may have won him a prize, but some smart kids have found a way to turn the tables on adults. Many kids are now using a similar high-pitched buzz as a cell phone ring tone, known as the "Mosquito tone" or "Teen Buzz." If the phone rings when it shouldn't-like in the middle of science class-only kids can hear it. Teachers and parents are deaf to the Mosquito tone.

Now you know the secret of the Mosquito tone. But beware: that's the kind of fact you just might miss if you're talking on the phone during science class!

Name: _____ **Date:** _____

1. The Mosquito repels kids. What causes the Mosquito to repel kids?

A. It releases a sour smell that only kids can sense.

B. It makes a low-pitched sound that only kids can hear.

C. It makes a sound that only adults can hear.

D. It makes an annoying sound that only kids can hear.

2. How does noise travel?

A. through the ground

B. in sound waves

C. in light waves

D. in light years

3. Why does the Mosquito make a high-pitched sound?

A. The sound waves it creates move at a high frequency.

B. The sound waves it creates move at a moderate frequency.

C. The sound waves it creates move at a low frequency.

D. The sound waves it creates change frequencies.

4. As a person ages, special cells inside the ear called hair cells start to die. What is an effect of this?

A. The person is able to hear low-pitched sounds better.

B. The person is unable to hear neither high-pitched sounds nor low-pitched sounds.

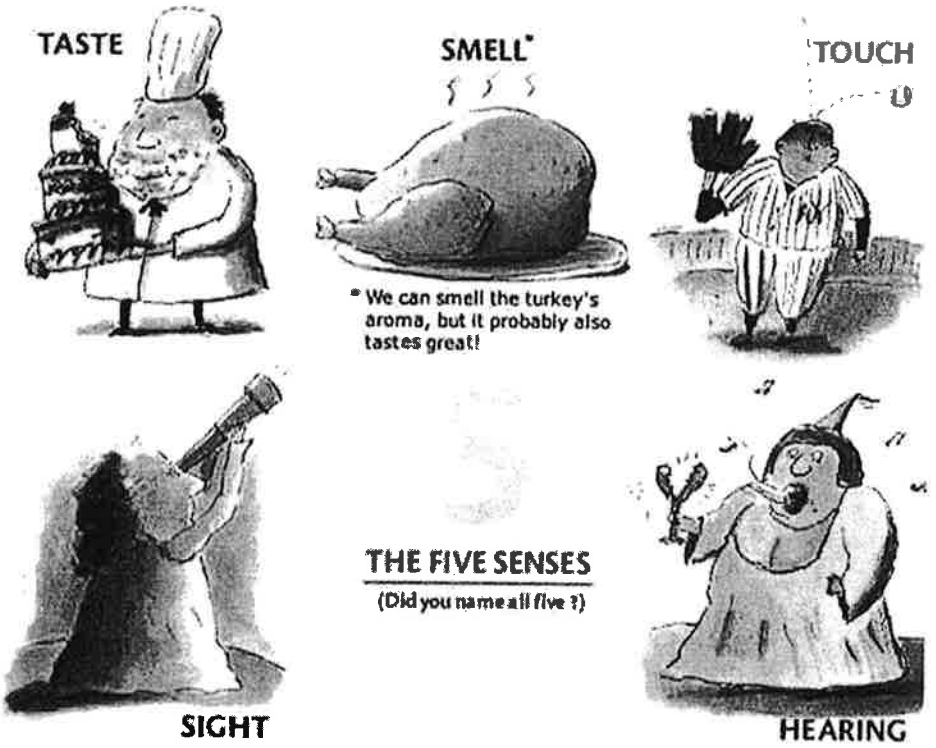
C. The person is unable to hear high-pitched sounds.

D. The person is unable to hear low-pitched sounds.

5. What does the word "repel" mean as used in the text? Use evidence in the text to support your answer.

Sensing the World Around Us

by ReadWorks



All animals have sense receptors, which are organs that receive information from the outside world. We human beings perceive our environment through our five senses: vision, hearing, smell, taste, and touch.

Our bodies are covered with skin tissue. Our skin receptors deliver messages to our brains when our skin comes into contact with different surfaces. These receptors allow us to feel things like pain, temperature, pressure, and vibrations. If you stick your bare hand into the snow, for instance, your sense receptors will signal the thing you have just touched is cold! *Very cold!* If you take a walk across the beach on a particularly sunny day without sandals on, your sense receptors may tell you that it is hot! *Very hot!* Once your brain has processed this information, it can store the information and use it later on. The next time you go to the beach, you'll likely remember how much the sand can heat up and bring your flip-flops along with you.

Pain is pretty unpleasant when it happens, but think about it this way: pain protects us. When

we sense pain, we know that we should stop whatever it is we're doing because it hurts. If you rest your hand on the stove while it's turned on, the pain will alert you to move away. Our sense receptors allow us to detect pain and tell our brains about injuries to our bodies. Memories of painful experiences help us avoid these experiences in the future. In other words, the information collected by our receptors can guide our future actions. Beware of the stove, or get burned again!

What kinds of receptors allow us to see the world? The sense receptors involved in vision are called "photoreceptors." Other animals have different types of photoreceptors, but humans have only two kinds: rods and cones. Our rods and cones are located in the retina, the back part of the eye. Our rods are sensitive to changes in light, shape, and movement. They help our eyes adjust to the dark. When you stumble to the bathroom in the middle of the night and, after a few moments, are able to see the door well enough not to bump right into it, those are your rods at work. Our cones allow us to perceive color. They operate best in bright light, which is why it's hard for us to make out colors when the lights are out. Some people are "color blind," which means that they have difficulty distinguishing certain colors from others, like red from green. This is because they're missing a type of cone in the retina, or because a particular cone is weak.

Olfactory receptors are the ones that receive smells, whether the scent of freshly baked cookies or day-old garbage. All that we smell is the result of receptors in our noses-about seven centimeters up our noses, actually!-detecting chemicals in the air and informing our brains. When you have a cold, the chemical molecules have a hard time reaching the receptors in your stuffed-up nose, which is why you have trouble smelling. Human beings have about forty million olfactory receptors, which are covered with small hairs called "cilia." A dog like the German shepherd has about two billion olfactory receptors. That's why police officers often use dogs to sniff out whatever it is they're looking for; their sense of smell is much better developed than ours!

Did you know that, of all our senses, smell is the one most closely related to memories and emotions? When you smell an object that you've smelled before, it will often bring to mind memories associated with that object. Also, a lot of times we think we are tasting food when really we are mainly smelling it. Our olfactory receptors send signals to the brain while we're eating, and the brain registers this information as a part of "taste."

Receptors in the ear, called "auditory receptors" or "hair cells," are responsible for our hearing. Sound waves enter through our outer ear and cause the eardrum to vibrate. The three bones in our middle ear pass these vibrations on to the cochlea. The cochlea is a snail-

shaped structure in the inner ear that is filled with a special fluid. When the vibrations move the hair cells (our receptors) on the cochlea, they send signals to the brain. Another fun fact: the canals in our inner ear are responsible for balance. So the next time you're hopping up and down on one leg, remember that you have your ears to thank!

Humans enjoy five different types of taste: sweet, sour, salty, bitter and umami (savory or meatiness). Any other taste you can think of is made up of a combination of these. A human has approximately 10,000 taste buds. Each taste bud has 50 to 150 receptors. These receptor cells, or gustatory cells, only live for about two weeks and are then replaced by new ones. Your taste buds lie on your tongue, the back of the roof of your mouth and the back of your throat. Not all animals have the same receptors as we do. You'll notice, if you ever try and reward your cat with something sugary, your pet doesn't have much interest in candy. That's because cats can't taste sweets.

Certain animals sense their outside environment in incredible ways. Butterflies have taste receptors on their feet. A rabbit's tongue contains 17,000 taste buds. Crickets hear using a thin membrane on their front legs. The box jellyfish has twenty-four eyes. Elephants can hear (and make) very low-frequency sounds that we humans can't. Whether you taste with your feet or your tongue, hear with your legs or your ears, all of us animals need sense receptors. Without them, we wouldn't know as much about the world around us.

Name: _____ Date: _____

1. What kinds of receptors allow people to see the world?

A. auditory receptors

B. olfactory receptors

C. photoreceptors

D. skin receptors

2. What does the author describe in this passage?

A. how our senses work

B. how to train a dog

C. how police officers catch thieves

D. how to be safe in the kitchen

3. If you rest your hand on the stove while it's turned on, the pain will alert you to move away. Our sense receptors allow us to detect pain and tell our brains about injuries to our bodies. Memories of painful experiences help us avoid these experiences in the future.

Based on this evidence, what conclusion can be made?

A. We need to try to forget our painful memories.

B. We can't always trust our sense receptors.

C. The brain is an important sense receptor.

D. Pain is unpleasant, but it can protect us.

4. Based on information in the text, how do memories form?

A. Olfactory receptors process and store information provided by the brain.

B. Photoreceptors process and store information provided by the brain.

C. Sense receptors process and store information provided by the brain.

D. The brain processes and stores information provided by sense receptors.

5. What is this passage mainly about?

A. the benefits of blindness

B. the habits of animals

C. the five senses

D. the five tastes

6. Read the sentence: "**Olfactory** receptors are the ones that receive smells, whether the scent of freshly baked cookies or day-old garbage."

As used in the passage, what does the word "**olfactory**" mean?

A. connected to the act of storing garbage

B. connected to the act of baking cookies

C. connected to the sense of smell

D. connected to the sense of taste

7. Sound waves enter through our outer ear and cause the eardrum to vibrate. ____, the three bones in our middle ear pass these vibrations on to the cochlea.

Choose the answer that best completes the sentence below.

A. Previously

B. Then

C. Obviously

D. Meanwhile

8. Why do police officers use dogs to sniff out whatever it is they're looking for?

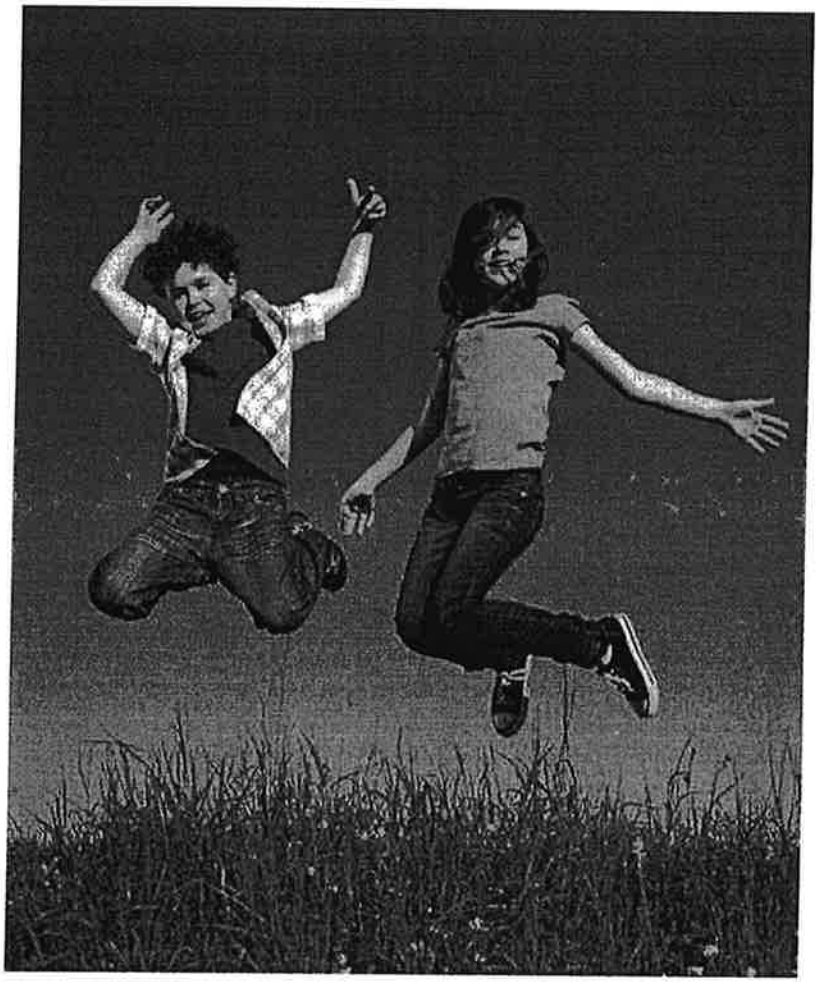
9. Should a cat be rewarded with a sugary treat? Why or why not? Use evidence from the story to support your answer.

10. Human beings see, smell, taste, and hear in ways that are different from other animals. What evidence from the text supports this conclusion?

What's It Like in Space?

This text is adapted from an original work of the Core Knowledge Foundation.

In 1969, a group of American astronauts visited the moon on a rocket ship called Apollo 11. Since then, many more astronauts have traveled in space. Scientists have learned that there are many differences between Earth and space. One of the biggest differences has to do with gravity. Gravity is a force of attraction that pulls things toward one another. The force of gravity on Earth is pretty strong. Even the best jumpers can only jump a few feet off the ground. (Try it and see!)



Want to jump high? You will have to fight against gravity.

Two of the American astronauts who visited the moon were Buzz Aldrin and Neil Armstrong. When they were on the moon, they were easily able to jump up high. They didn't come down quickly either. Instead, they seemed to float down slowly. That was because the force of

gravity on the moon is not as strong as on Earth. The moon is not as big as Earth. So the force of gravity is not as strong on the moon.

If you think that is cool, wait until you read what happens out in space, away from the moon or planets. Out in space, astronauts do not feel the effects of gravity. They and their spaceship are moving freely in space. Since the astronaut and spaceship are moving freely together, the astronauts look and feel as if they are floating!

This astronaut is inside a spaceship in space, where the force of gravity is less.

Up in space, lots of things are different. You can do a flip and not worry about whether you will make it all the way around before you come down!

When you are free of the effects of gravity, it is easier to do flips and cartwheels.

Eating is different in space, too. I'll bet when you eat lunch at school, your food stays where you put it. If you set it on a table, it stays there until you pick it up. The force of gravity holds it down. But if you were up in space, you and your food would be moving freely together. If you let go of it, your food might drift away!

Look, no hands! These astronauts' lunches appear to be floating!

There are other differences in space besides less gravity. Did you know that the astronauts on the moon had to carry tanks of air for breathing? That's because another way outer space is different from Earth is that there is no air or oxygen at all in outer space. Look again at the image of the astronauts inside the spaceship. The astronauts are not carrying tanks of air. That's because oxygen is being pumped inside the spaceship.

Since there is no air in space, you also do not hear sounds in outer space. It is also very cold in space. The astronauts must train many months before going into space so they know what to expect. Do you think you would like to go into space some day?

This is what Earth looks like from the moon. Can you name some ways that being in space is different from being on Earth?

Name: _____ **Date:** _____

1. Where are the effects of gravity stronger, on Earth or in space?

2. Describe an example from the text that shows how gravity is different in space than on Earth.

3. There is no air in outer space. How does this affect people who go to outer space? Support your answer with details from the text.

4. What is the main idea of this text?

The International Space Station

This text is adapted from an original work of the Core Knowledge Foundation.

Would you like to have a bedroom in outer space? Some astronauts do!

The United States and other countries use a reusable spacecraft called a space shuttle to send astronauts to an international space station.

The space station orbits Earth. Three astronauts can live there at one time. They stay for six months at a time. This image shows the space station.

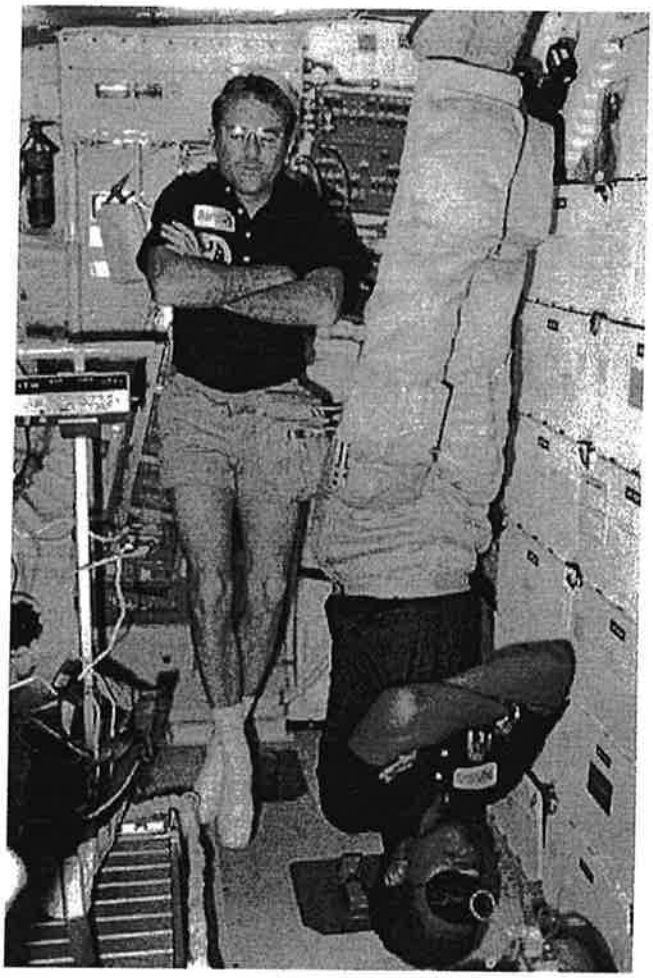
The space station orbits Earth.

The space station orbits far above Earth. So the astronauts in the space station don't feel the effects of gravity like we do on Earth. When we lift our arms and legs here on Earth, we have

to work against gravity. That is good for us. It helps us stay in shape. But astronauts in space don't have the effects of gravity to work against. They do not get much of a workout from drifting around. They have to run at least once a day to stay in good shape. In this image, you can see an astronaut jogging in space.

Astronauts have to jog in space to stay in shape.

These two men are sleeping in space. They don't feel the effects of gravity so they are moving freely within the spaceship. This means they can sleep right side up or upside down. It is all the same. Do you think you would like sleeping this way?

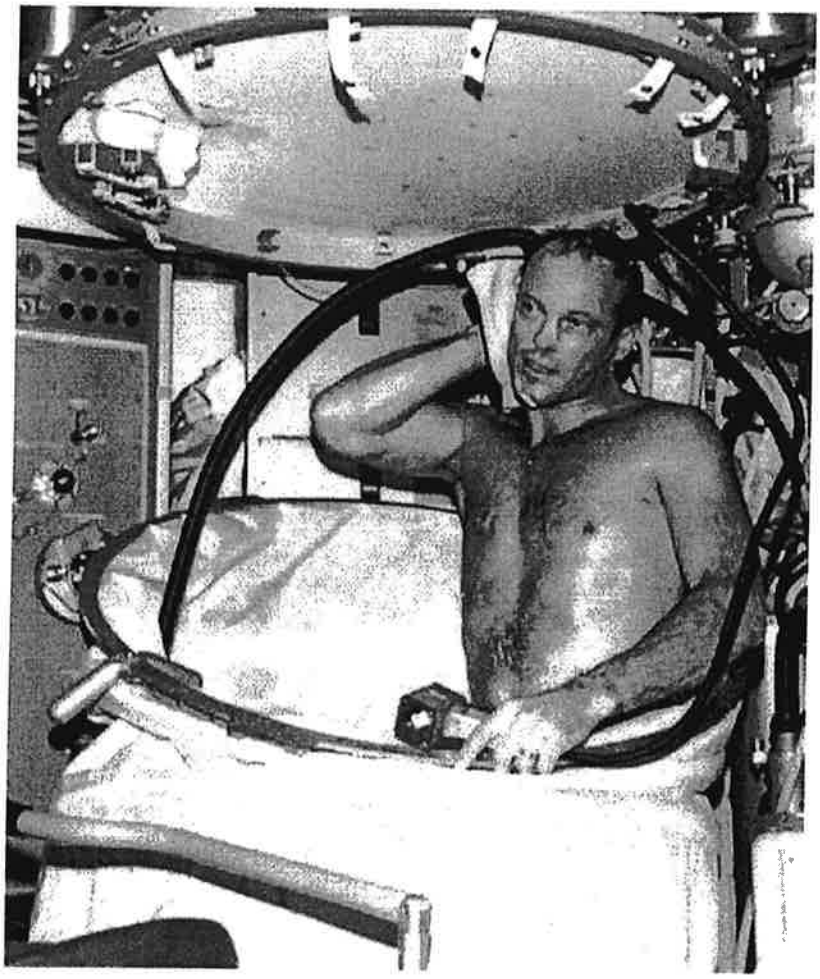


These two astronauts are taking a nap in space.

Taking a shower in space is tricky. On Earth, the water comes out of the spout. It falls down and splashes on your body. Then, it runs off. But this is not what happens in space! In space, you have to rub the water on your skin. Also, it does not just drip off. You have to scrape it off. You have to shower in a little pod. The pod keeps the water you scrape off your skin from drifting off in the air. If it drifted off, it might cause problems. It might mess up the computers and equipment inside the space station.

You can see that lots of things are different when you live in space. That is why leaving the space station and coming back to Earth can be hard. It takes time for the astronauts to get used to Earth again. After months in space, they struggle with the gravity on Earth. Their arms and legs feel heavy. They find it hard to stand up. They feel off balance. But in a few weeks, they begin to feel normal again. Sometimes when they look up at the sky, they even feel a

little homesick for their home in outer space.



An astronaut taking a space shower

Name: _____ **Date:** _____

1. Where can astronauts live in space?

_____

_____

_____

2. Astronauts on the International Space Station do not feel the effects of gravity. Give one example of something astronauts there have to do to make up for not feeling gravity.

_____

_____

_____

3. Life in space is very different from life on Earth. What evidence from the text supports this conclusion?

_____

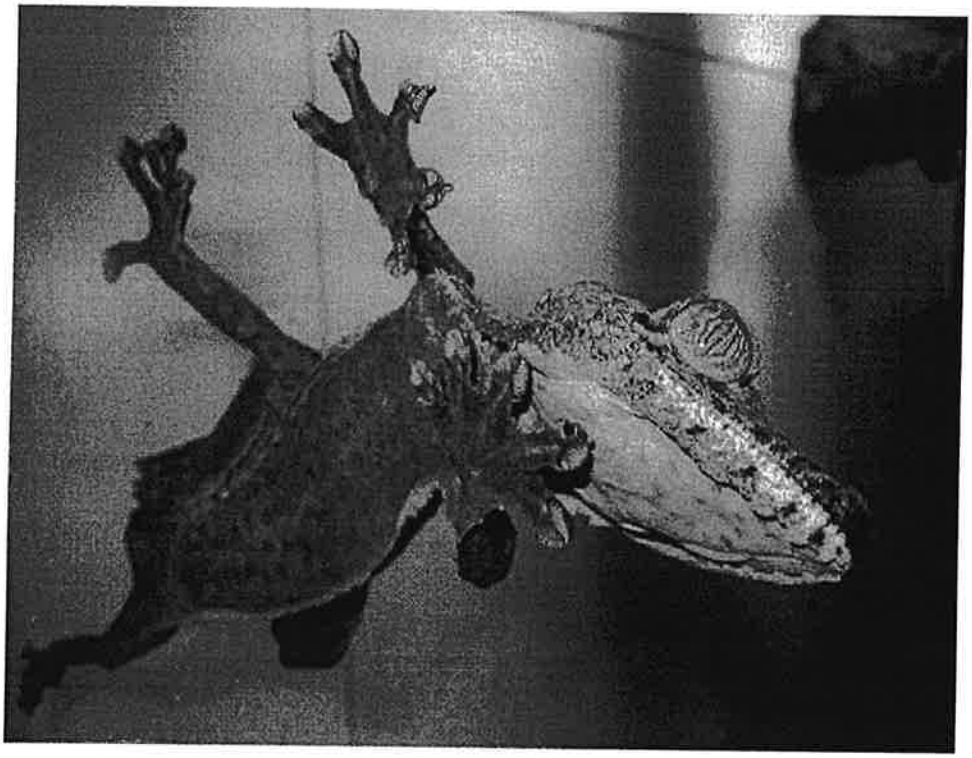
_____

_____

4. What is the main idea of this text?

Gecko Feet & Space Robots

by ReadWorks



Photograph of a gecko clinging to glass

Have you ever seen a gecko climb up a wall? If so, you would know that this little creature has the impressive ability to scuttle across ceilings. It is almost as if the gecko can defy gravity! But, of course, gravity affects geckoes. Their bodies have simply adapted. To avoid falling to the ground, the geckoes have sticky feet. Their feet are covered with millions of microscopic hairs that grip surfaces. When weight is applied to the hairs, they stick to the surface.

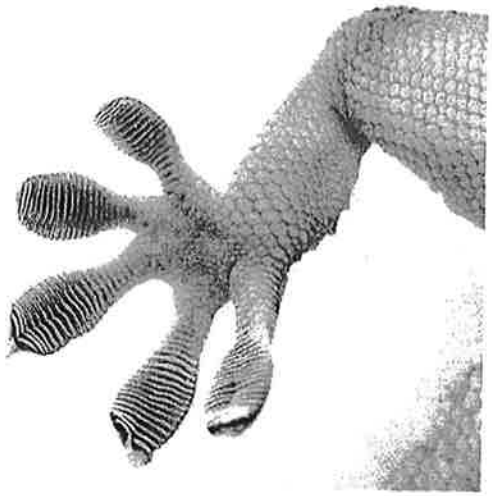
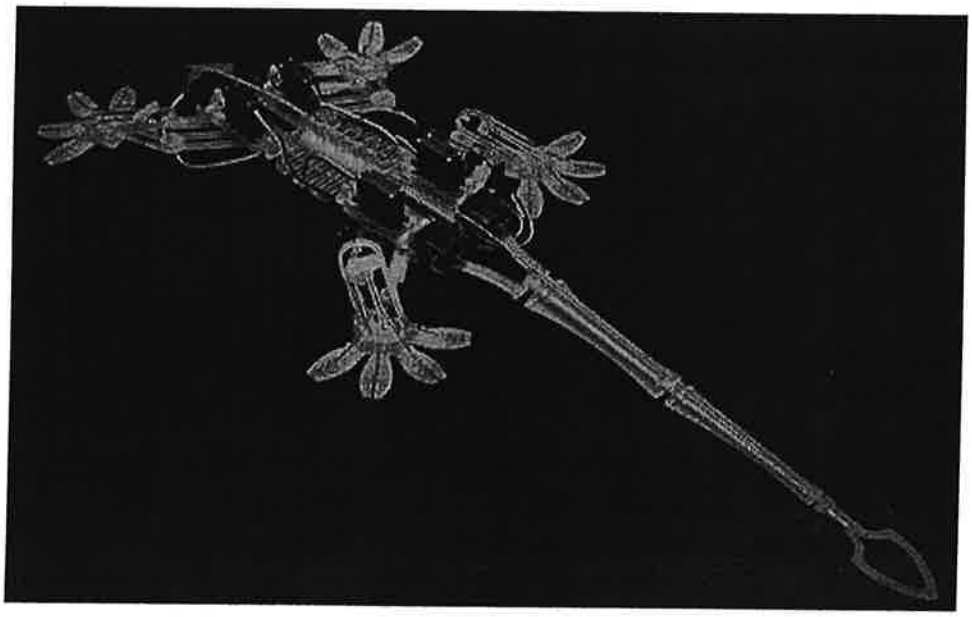


Photo Credit: Matt Reinbold, CC BY-SA 2.0

Photograph of gecko feet

Gecko feet have inspired the invention of a new NASA robot. The International Space Station, a large satellite that houses a research lab, needs to be checked and maintained. Since it is located in space, it is difficult for astronauts to check the outside of the satellite on a regular basis. The new NASA robot was invented to address this problem. Scientists created robots that have "gecko grippers." These grippers basically allow the robots to stick to the outside of the station as they repair it.



Douglasy, CC BY-SA 3.0

Photograph of a sticky robot

Name: _____ **Date:** _____

1. What do geckos have on their feet?

A. millions of microscopic feathers that grip surfaces

B. millions of microscopic scales that grip surfaces

C. millions of microscopic hairs that grip surfaces

D. millions of microscopic wings that grip surfaces

2. What does the text describe?

A. how geckos' feet have evolved over time

B. how NASA built "gecko grippers"

C. different ways scientists are inspired by nature

D. gecko feet and the NASA robot they inspired

3. Nature can help us come up with new ideas for inventions.

What information from the text best supports this statement?

A. The International Space Station, a large satellite that houses a research lab, needs to be checked and maintained.

B. Gecko feet are covered with millions of microscopic hairs that grip surfaces.

C. It is difficult for astronauts to check the outside of the International Space Station on a regular basis.

D. NASA invented a new robot based on the way gecko feet help geckos stick to surfaces.

4. The "gecko grippers" of the new NASA robot are similar to what part of a gecko's body?

A. the gecko's feet

B. the gecko's head

C. the gecko's back

D. the gecko's tail

5. What is the main idea of this text?

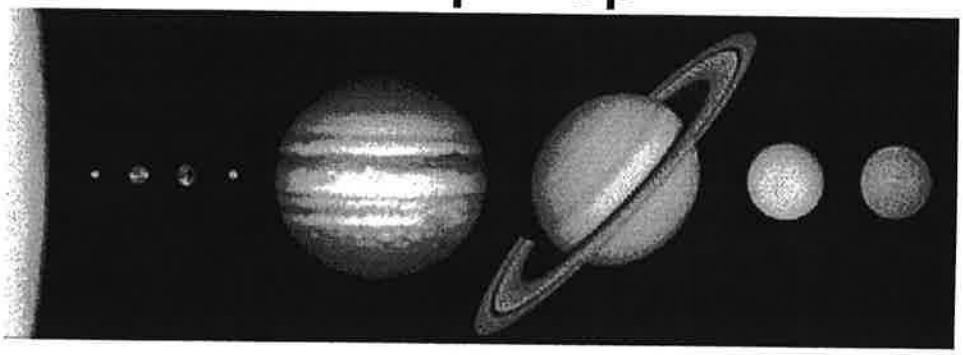
A. It is difficult for astronauts to check the outside of the International Space Station on a regular basis.

B. A new NASA robot was inspired by the feet of geckos which allow the animals to grip surfaces.

C. Geckos can climb up walls and scuttle across ceilings thanks tomillions of microscopic hairs on their feet that grip surfaces.

D. NASA invented a new robot thatsticks to the outside of the International Space Station as they repair it.

What's Up In Space?



Places in Space

Space is an exciting place! Our solar system is in space. It is made up of the sun and the eight planets that travel around the sun. Our solar system also has moons, stars, and other space objects.

In the Center

The **sun** is at the center of our solar system. The sun is a hot, bright **star**. A star is a ball of hot gas. It gives off heat and light. The sun is the star closest to Earth. That is why it looks different from other stars. Most stars look tiny and can be seen only at night because they are so far away.

Around the Sun

A **planet** is a large ball made of rock or gas. Eight planets make up our solar system. You live on one of them-Earth! The others are Mercury, Venus, Mars, Jupiter, Saturn, Uranus, and Neptune. Each planet moves in a path around the sun. The path is called an **orbit**.

Around Earth

Earth has one **moon**. It travels in an orbit around Earth. The moon is made of rock. It is covered with deep holes called craters. The moon may look as though it gives off light, but it does not. It looks bright when it reflects light from the sun.

Space Facts!

- The sun is so large that it could hold a million Earths.
- Earth is called the Blue Planet because it is covered in so much water.
- Some planets have many moons. Jupiter has the most. It has more than 60 moons.

Name: _____ **Date:** _____

1. What is the sun?

A. a planet

B. a star

C. a moon

D. an asteroid

2. What does the author describe in the passage?

A. the objects in our solar system

B. why Earth only has one moon

C. the different stars in the universe

D. how the moon got its craters

3. Our sun does not look tiny like other stars because it is the closest star to Earth. What evidence from the passage supports this conclusion?

A. "The sun is at the center of our solar system. The sun is a hot, bright star."

B. "A star is a ball of hot gas. It gives off heat and light."

C. "The sun is so large that it could hold a million Earths."

D. "The sun is the star closest to Earth. That is why it looks different from other stars."

4. Read the following sentence: "Earth is called the Blue Planet because it is covered in so much water."

Based on this information, what color does most of Earth look like from space?

A. white

B. brown

C. green

D. blue

5. What is this passage mostly about?

A. facts about our solar system

B. facts about planets

C. facts about the sun

D. facts about the moon

6. Read the following sentences: "The moon may look as though it gives off light, but it does not. It looks bright when it reflects light from the sun."

As used in this sentence, what does "**reflects**" most nearly mean?

A. lets light pass through a surface

B. makes light go around an object

C. sends light back from a surface

D. stops light from going through an object

7. Choose the answer that best completes the sentence below.

Our solar system has many different objects, _____ planets, moons, and asteroids.

A. such as

B. but

C. so

D. then

8. What is at the center of our solar system?

_____

_____

_____

9. Explain what an orbit is.

_____

_____

_____

10. Name two objects in the solar system that orbit something else. Do they orbit the same thing or different things?

Famous Scientists - Sir Isaac Newton

by ReadWorks

Gravity is the force that pulls objects towards the earth. There is a story that Sir Isaac Newton discovered gravity one day when he was sitting under a tree. An apple fell from the tree and hit Newton on the head. He realized gravity was the force that kept us on the ground. He also discovered it kept the moon close to the earth. The story of the apple is probably not true. However, it is a good example of how gravity affects things.

Newton was a genius. Unfortunately, people of his time were not ready for his ideas. They were critical of his discoveries. Newton was afraid to publish his findings. They sat on his shelf for over twenty years. Finally, in 1687, his first book was published. Today, it is considered one of the greatest works in the history of science.

Name: _____ **Date:** _____

1. The story of the falling apple describes how Newton might have discovered

A. the moon.

B. apples.

C. gravity.

D. the earth.

2. Why does the author mention the story of the apple?

A. to show how silly old stories are

B. it describes Newton's famous discovery

C. it is the only thing Newton ever published

D. without it, we wouldn't understand gravity

3. Based on the passage, it is likely that Newton's ideas

A. were very popular while he was alive

B. are believed more today than when he was alive

C. have been proven wrong by today's scientists

D. are all made up stories

4. Read the following sentences: "An apple fell from the tree and hit Newton on the head. He realized gravity was the force that kept us on the ground."

The word **realized** means

A. became bruised

B. listened carefully to something

C. completely forgot something

D. started to think something is true

5. This passage is mainly about

A. how different scientists think of gravity.

B. Sir Isaac Newton and his discovery of gravity.

C. myths that people tell about scientific discoveries.

D. Sir Isaac Newton's fame and riches during his life.

6. Based on information in the passage, describe two things that gravity does.

7. Based on the passage, why is Newton's work considered some of the greatest work in the history of science even though people of his time had problems with his ideas?

8. The question below is an incomplete sentence. Choose the answer that best completes the sentence.

People of the time were critical of his discoveries, _____ Newton was afraid to publish his findings.

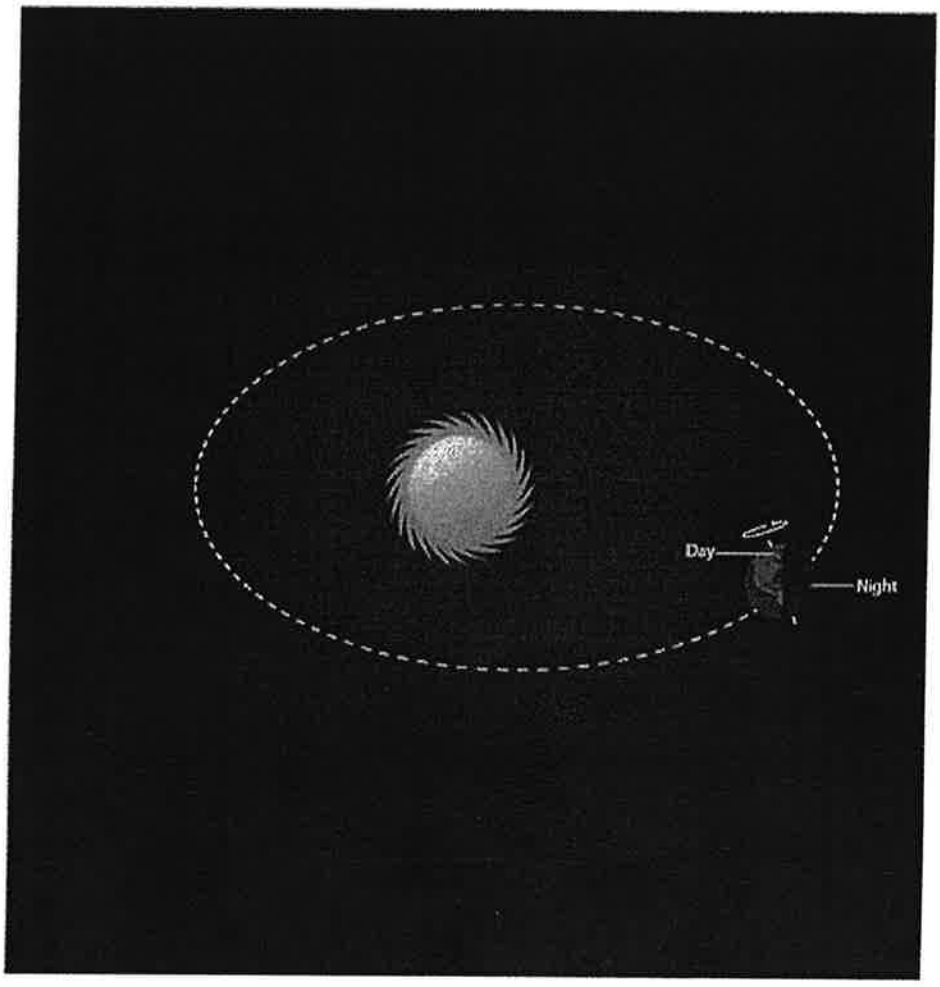
A. despite
B. therefore
C. because
D. even though

The Movement of the Earth

This text is adapted from an original work of the Core Knowledge Foundation.

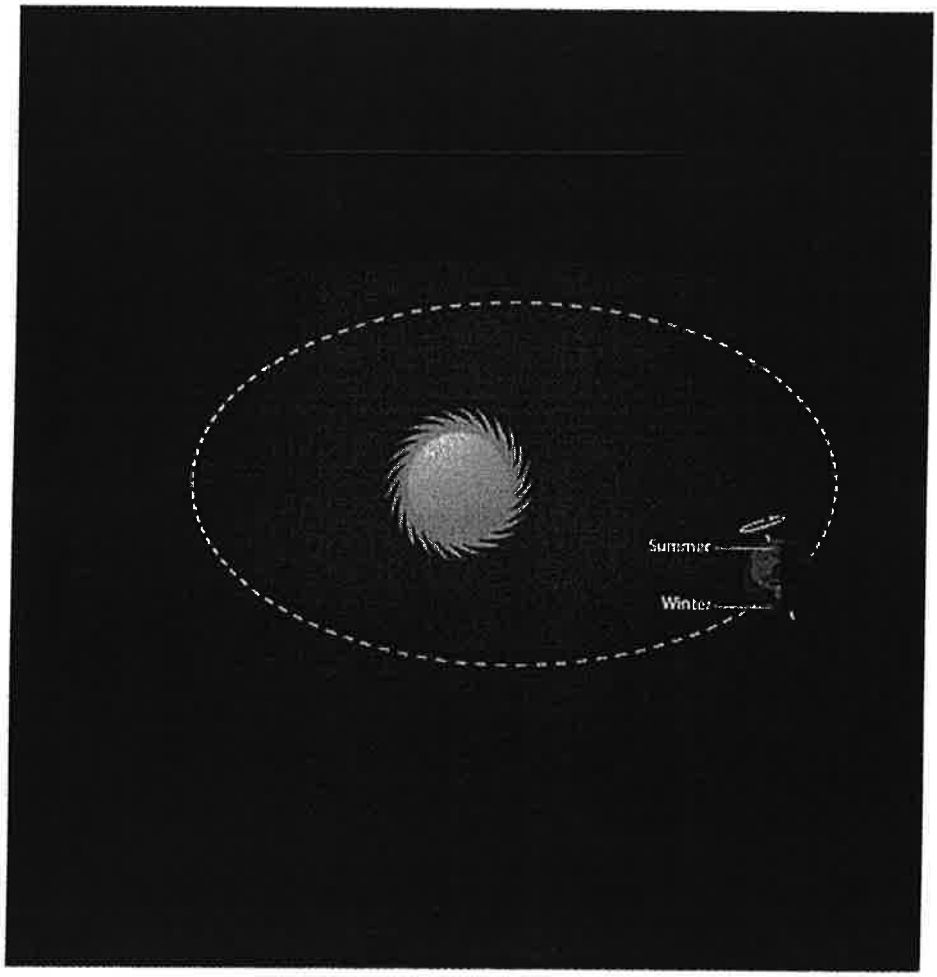
Our planet, Earth, moves in two ways. The Earth circles around the sun. It takes about 365 days, which is one year, for Earth to orbit the sun.

Earth also moves by spinning, or rotating, on its axis. It is this spinning that makes day and night on Earth and the motion of the sun across the sky from sunrise to sunset. It takes one day for Earth to make one complete rotation on its axis. As Earth rotates and spins, different parts of it face the sun. When the part facing the sun gets sunlight, it is daytime on that side of Earth. The part that faces away from the sun gets no sunlight. So, on that side of Earth, it is nighttime. Did you know that when it is daytime where we live, it is nighttime on the other side of Earth?



Earth spins on its axis. On the side of Earth facing the sun, it is daytime. On the side facing away from the sun, it is nighttime.

When Earth rotates on its axis, it is tilted. At certain times of the year, one part of Earth is tilted toward the sun. The sunlight is more direct and it feels hotter. For people living on this part of Earth, it is summer. For people living on the part of Earth tilted away from the sun, there is less sunlight and it is winter. So, when it is summertime for us, there are people living on other parts of Earth where it is winter! So, the fact that Earth is tilted on its axis is what creates the seasons of the year.



When Earth is tilted on its axis towards the sun, it is spring and summer. When Earth is tilted on its axis away from the sun, it is fall and winter.

Name: _____ **Date:** _____

1. What are the two ways that Earth moves?

2. Think of the two ways that Earth moves. Which of those ways is responsible for Earth's seasons? Support your answer with evidence from the text.

3. How does earth's movement cause us to experience daytime and nighttime?

4. What is the main idea of this text?