Navigators

Introduction to *Navigators Guides*

This new teacher's guide showcases books in the NAVIGATORS Series. Featuring the most up-to-date information and contemporary design, Navigators is aimed squarely at today's sophisticated readers. Every spread is popping with full-bleed 3-D artwork, essential facts, featured quotes from related books and movies, and the latest web links to take the exploration beyond the book. NAVIGATORS is the core reference series for the next generation.

In this guide you'll find reproducible activities to accompany each title in the series. These activities have been developed to accomplish very specific reading goals, including prior to reading, during reading, and after reading.

The pre-reading activities help students think of what they know about the topic and to build upon their background knowledge. Such activities also help them to set a purpose for their reading.

The during-reading activities help students monitor their comprehension and to be engaged in the text.

The after-reading activities help them to apply or extend the information they have learned while reading.

Finally, we believe the activities will help the students enjoy reading and learning with this exciting and inviting series!

Activities for Navigators Guides developed and created by

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Navigators

Anticipation/Reaction Guide for *Ancient Rome*

By **Philip Steele**

Directions: Read each of the following statements and then circle T if you think it is true, F if you believe it is false, or U if you are uncertain. Then discuss your responses with your group. After you have read the book, go back and check your answers. Then re-write the false statements so they are all true. Place the correct answers in the 'after' column.

Before		After
T F U	Geese warned the Romans of approaching Gauls so the Romans were able to take refuge on a hill.	T F U
T F U	About 2,000 years ago, the Romans ruled much of Europe, as well as western Asia and North America.	T F U
T F U	For important events and festivals, animals were sacrificed to please the gods.	T F U
T F U	Thor was known to be the greatest of the Roman gods.	T F U
T F U	Galleys were Roman warships that were powered and steered by oars.	T F U
T F U	The ruler of the Roman Empire was known as the emperor.	T F U
T F U	The Romans were known for building a network of roads throughout their empire.	T F U
T F U	Roman armies were divided into units called legions, each made up of 5,000 men.	T F U
T F U	Wealthy Romans often went to amphitheaters to watch gladiator fights where combatants sometimes fought to the death.	T F U
T F U	Rome retained great political power in the Middle Ages through the Catholic church.	T F U

Jot Chart for *Ancient Rome*

By **Philip Steele**

A civilization is a society that has developed laws, government, arts, science, and technology. While reading *Ancient Rome*, look for evidence that it was a civilization. List the words used to describe those attributes of the Ancient Roman Society in the jot chart below.

Laws	
Government	
Arts	
Science	
Technology	

Magic Square For *Ancient Rome*

By **Philip Steele**

Directions: Put the number of the best definition listed below into the square with the correct term. Check your answers by adding the numbers across each row, down each column, and diagonally. The MAGIC NUMBER is the total you get each time.

civilization _____	**empire** _____	**legion** _____	_____
toga _____	**imperial** _____	**barbarian** _____	_____
aqueduct _____	**sacrifice** _____	**galley** _____	_____
_____	_____	_____	_____

1. Religious ceremonies used in worship
2. Many different lands ruled by a single government
3. A large ship powered by oars, often with a sail as well
4. A heavy robe cut in a semicircle, folded and draped over the body
5. A channel built from brick or stone to carry water
6. Having to do with the empire or the emperor
7. A large fighting unit within the Roman army
8. Roman word for people from outside of the empire
9. A society that has developed laws, arts, science, and technology
10. To kill a living thing as an offering to the gods

The magic number is _____.

Navigators

Anticipation/Reaction Guide for *Animals*

By **Miranda Smith**

Directions: Read each of the following statements and then circle T if you think it is true, F if you believe it is false, or U if you are uncertain. Then discuss your responses with your group. After you have read the book, go back and check your answers. Place the correct answers in the 'after' column.

Before		After
T F U	An African leopard is capable of climbing a 50-foot tree with a large, dead springbok as heavy as itself in its mouth.	T F U
T F U	Monotremes are animals that lay eggs.	T F U
T F U	Bird beaks are the shape that best helps them eat what they need to survive in their environment.	T F U
T F U	Cuckoos often lay their eggs in other birds' nests so those birds actually raise the cuckoo fledglings.	T F U
T F U	Some turtles have worm-like structures on their tongues that wiggle to lure fish into their mouths.	T F U
T F U	Snakes and crocodiles are gentle parents that take good care of their young.	T F U
T F U	Migratory locusts have been known to be carried by the wind for up to 3000 miles.	T F U
T F U	Instead of spinning webs, some spiders use trapdoors to catch their prey.	T F U
T F U	Amphibians may protect themselves by playing dead.	T F U
T F U	Male birds often sing or dance to find their mates.	T F U

Jot Chart For *Animals*

By **Miranda Smith**

Animals are very interesting creatures. While reading *Animals,* look for interesting facts to complete the jot chart below. List two or three facts you find for each topic below. Underline the most surprising fact for each topic.

Attack and Defense	
Finding Food	
Giving Birth	
Avoiding Predators	
Self-Protection	
Your Choice (Choose another area that interests you)	

Magic Square For *Animals*

By **Miranda Smith**

Put the number of the best definition listed below into the square with the correct term. Check your answers by adding the numbers across each row, down each column, and diagonally. The **MAGIC NUMBER** is the total you get each time.

locomotion _____	**toxin** _____	**display** _____	_____
evolved _____	**viviparous** _____	**camouflage** _____	_____
echolocation _____	**predator** _____	**ruminant** _____	_____
_____	_____	_____	_____

1. The power to stay afloat in a liquid
2. A poison made by living cells or organisms
3. A hoofed animal with a specialized digestive system and two stomachs
4. Gradually changed over time to fit a particular way of life
5. A method of locating prey by emitting sounds that echo back
6. Reproducing by giving birth to live young
7. To attract a bird of the same species with color, plumage, or behavior
8. Protective coloring that makes it difficult to see an animal against its habitat
9. The ability to move from place to place
10. An animal that attacks and kills another animal for food

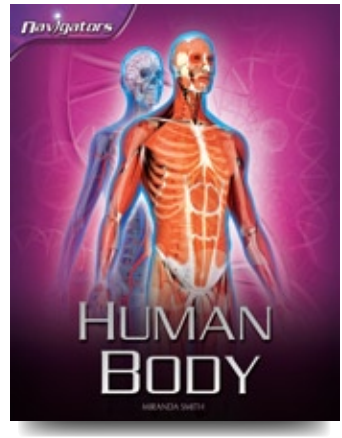
The magic number is _____.

Navigators

"The Skeletal System" from *Human Body*

By **Miranda Smith**

Adapted for Readers Theatre by Terrell Young



Narrator 1: Our readers theatre presentation is "The Skeletal System" from the book, *Human Body,* by Miranda Smith. Our readers include the part of the skeleton read by _____ and the skull read by _____.

Narrator 2: I'm _____. _____ and I are the narrators.

Skeleton: The skeletal system is just one of the ten systems that work in unison to keep the human body functioning.

Narrator 1: The skeletal system is a framework of bones, which forms the skeleton, shapes and protects the body.

Skeleton: I am made up of 206 bones that vary in size and have different functions. More than half of these bones are in the hands and feet.

Narrator 2: Long bones, such as those found in the arms and legs act as levers to change the position of the limbs.

Narrator 1: Flat bones in the skull and ribs and irregular bones such as the vertebrae in the spine, protect the organs.

Skeleton: Without a skeleton, the human body would have no shape or form. It would not be able to move, and its vital organs would have no protection.

Narrator 2: The skeletal system and muscular system work together to help the body move.

Skeleton: A newborn baby has 350 bones, but a fully grown adult has only 206.

Skull: There are 22 bones in the skull. Eight of these bones form the cranium, protecting the brain and forming the forehead.

Narrator 1: The only movable skull bone is the lower jaw.

Skull: The other 14 bones make up the framework for the face, including the nasal cavity and eye sockets.

Skeleton: In the center of a long bone is a cavity that carries bone marrow.

Narrator 2: Bone marrow stores fat and produces red blood cells.

Skeleton: Bone marrow in long bones changes color from red in children to yellow in adults.

Narrator 1: Spongy bone forms the center of a bone. It is a lightweight honeycomb of spikes of bone called trabeculae (tr-bĕk'y-l), which are only a few cells thick.

Skeleton: Marrow fills the spaces between the traebeculae.

Narrator 2: So the center of the bone is the marrow which is surrounded by the spongy bone.

Skeleton: Then a thin membrane, the periosteum (pĕr'ĕ-ŏs'tĕ-m), covers the hard outer layer.

Narrator 1: The periosteum contains blood vessels, nerve cells, and living bone cells.

Narrator 2: These make the bone, maintain it and store minerals until they are needed.

Skull: To learn more fascinating facts about the other nine body systems, you will want to read *Human Body* by Miranda Smith. It is just one of the captivating books in the Navigators Series.

Body Systems Jot Chart for *Human Body*

By **Miranda Smith**

Directions: Choose four of the body systems and complete the jot chart below as you read from Miranda Smith's *Human Body*.

System	Function	Major Organs	Interesting Facts

Create a Readers Theatre Script for a *Human Body System*

By **Miranda Smith**

With your team, you will create a human body system readers theatre script. In addition to developing the script, your group will also practice reading it and then perform the script for an audience.

Here are the steps for creating your readers theatre script.

1. Choose the body system you wish to represent in your script. Get your teacher's approval (your audience will not want to hear four presentations on the muscular system!).

2. Re-read the section of the book that you will adapt for your script. Think about what you want your audience to understand about that body system.

3. Review the Skeletal System Readers Theatre Script as a model for your script.

4. Think of creative ways to adapt the information so your script will be memorable for the audience. Remember that readers theatre strives to weave a coherent whole—a narrative, a sequence of events—told in many voices. Some information can be omitted.

5. Decide how to divide the parts for the readers. Think of creative possibilities for dividing the text. Make sure your choices are appropriate for a school audience.

6. Add an introduction that introduces the script and the readers.

7. Word process your script with hanging indentation (as in the model script).

8. As a team, read your script orally to proofread and edit it so it reads smoothly and makes sense.

9. Finally, ask your teacher to review it to see if she or he has any suggestions.

10. Practice reading so your performance reflects well on both the information from the book and your abilities to present the material.

Navigators

Anticipation/Reaction Guide for *Killer Creatures*

By **Claire Llewellyn**

Directions: Read each of the following statements and then go to the before column to circle T if you think it is true, F if you believe it is false, or U if you are undecided. After you have finished reading the book, go back and check your answers. Place the correct answers in the after column.

Before		After
T F U	Sometimes polar bears catch whales.	T F U
T F U	A cobra can spit venom into an enemy's eyes from as far away as 8 feet.	T F U
T F U	A golden poison-arrow frog contains enough venom to kill ten humans or 25,000 mice.	T F U
T F U	Some poisonous lizards weigh as much as 440 pounds.	T F U
T F U	Crocodiles cannot chew their food.	T F U
T F U	The female black widow spider's venom is 10 times deadlier than a rattlesnake's.	T F U
T F U	A boa usually swallows prey rear-first so that the legs do not get stuck in its throat.	T F U
T F U	A caiman is no match for a piranha.	T F U
T F U	Army ants release a chemical that "calls out" to other ants to come help kill and dismember their prey.	T F U
T F U	Hyenas are solitary hunters that share their kills with their packs.	T F U

Jot Chart for *Killer Creatures*

By **Claire Llewellyn**

While reading *Killer Creatures,* complete this jot chart by filling in the information for the most interesting killer from each continent. Be prepared to explain why your choices are the most interesting.

Continent	Killer Creature	Description	Habitat	Food	How it kills its prey
Africa					
Asia					
Australia Oceana					
Europe					
North America					
South America					

Discussion Questions and Activities for *Killer Creatures*

By **Claire Llewellyn**

After you have read *Killer Creatures,* research the killer creatures that live in your area. Choose the one that people are most likely to encounter and learn as much about it as possible. Design a tri-fold brochure that accomplishes the following.

Describes the creature (include a digital image from the computer);

Explains the creature's habitat and where people are most likely to encounter it;

Instructs the readers about what to do should they find themselves in close proximity to the creature;

Instructs the readers about what they should do if they are bitten or stung by the creature;

Explains the creature's role in its habitat and how it contributes to the environment;

Lists your research sources on the last panel.

Navigators

Anticipation/Reaction Guide for *KNIGHTS & CASTLES*

By **Philip Steele**

Directions: Read each of the following statements and then go to the before column to circle T if you think it is true, F if you believe it is false, or U if you are undecided. After you have finished reading the book, go back and check your answers. Place the correct answers in the after column. Discuss with a classmate, friend or parent your reasons for changing your answers.

Before		After
T F U	Europe is the only continent where castles may be found.	T F U
T F U	The job of the medieval knights was to protect the honor of the women around them.	T F U
T F U	The great age of the European knights ranged from the 1000s to the 1400s.	T F U
T F U	Castles have always been built from stone and used to defend lands.	T F U
T F U	The loyalty of knights was always rewarded with gifts of new weaponry.	T F U
T F U	Knights often wore a hauberk, a coat made of mail which was placed over a protected tunic.	T F U
T F U	Sometimes in order to defend the castle, inhabitants dropped rocks, boiling water, and heated sand through holes aptly called murder holes.	T F U
T F U	Crossbows were faster to use than longbows.	T F U
T F U	Under the early feudal system, knights pledged their allegiance to nations and families.	T F U
T F U	No one knows why the age of knights and chivalry came to an end in the seventeenth century.	T F U

Jot Chart For *KNIGHTS & CASTLES*

By **Philip Steele**

On the chart below, fill in the information on weapons used by knights during the medieval period.

Weapon or Armor	Brief Sketch	How Was It Used	Size and Weight
Crossbow and Bolt			
Sword			
Mace			
Battle Axe			
Catapult			
Gauntlet			
Sallet			

Extended Activities

Create a replica of an Anglo-Saxon helmet complete with battle scenes. Use any sort of material that you wish.

Decorate a manuscript describing a battle scene from the medieval period. You will want to refer to the book in order to be as accurate as you possibly can.

Referring to pages 36-37, devise a coat of arms for your family. Be able to defend your color choices and the symbols you choose. Paint your code of arms on a shield that you might carry into battle.

Using sealing wax, devise your own charter for a medieval town.

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Discussion Questions For *KNIGHTS & CASTLES*

By **Philip Steele**

Would you have wanted to be a peasant, a merchant, a priest or a knight during the medieval times? Why? What advantages and disadvantages would you have as a member of each group?

How and why did the invention of the stirrup change how wars were fought? Explain how and why the ages of knights and castles came to an end.

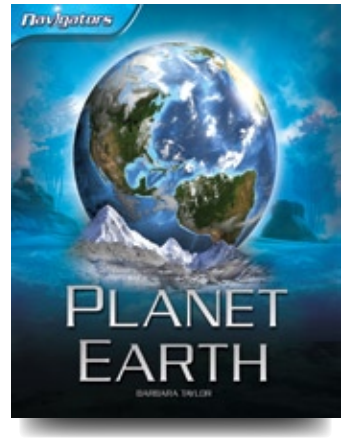
What steps would you take in preparing a castle for a siege? Why? If you were among the knights preparing to besiege a castle, what steps would you take? How do you think the winner would be determined?

Given the weight of some of the weapons and equipment knights carried and wore, how important do you think it was that they be in excellent physical condition?

Navigators

Anticipation/Reaction Guide for *PLANET EARTH*

By **Barbara Taylor**



Directions: Read each of the following statements and then go to the before column to circle T if you think it is true, F if you believe it is false, or U if you are undecided. After you have finished reading the book, go back and check your answers. Place the correct answers in the after column. Discuss with a classmate, friend or parent your reasons for changing your answers.

Before		After
T F U	Dome mountains occur when the earth's crust folds against itself.	T F U
T F U	The eruption of volcanoes releases pressure from inside the planet and cools its core, which is extremely hot.	T F U
T F U	Earth's inner core consists of gigantic plates which often bubble to the surface, causing environmental disasters each year.	T F U
T F U	Some earthquakes may be triggered by the eruptions of volcanoes.	T F U
T F U	Most of the planet's volcanoes are no longer active; in fact, only five volcanoes threaten the lives of people today.	T F U
T F U	Covering one-fifth of the Earth's surface, there are even mountains beneath the ocean waters.	T F U
T F U	The mountains on Earth will grow no larger; instead, they will be flattened by erosion and weathering until the entire planet is flat land.	T F U
T F U	Scientists believe that life on Earth began 2.5 million years ago.	T F U
T F U	Covering one half of the Earth's surface, deserts receive no rainfall during the year.	T F U
T F U	Born in the middle of the arctic winter, polar bear cubs are ready to leave their mother as soon as they emerge from the den.	T F U

Jot Chart For *PLANET EARTH*

By **Barbara Taylor**

On the chart below, fill in the information on our planet Earth.

Physical Aspects of Earth	Characteristics	Mini Sketch	One Cool Fact!
Earthquakes			
Grasslands			
Ice Sheets and Glaciers			
Mountains			
Rivers and Coasts			
Rocks			
Forests			
Deserts			
Oceans			
Atmosphere			

Now try your hand at drawing a full page illustration of earth. Be sure to include as many of the physical characteristics listed above as you can, and be sure to label your drawing. You will want to share at least one cool fact with a friend, teacher or family member. After all, this fascinating Planet Earth is OUR home.

Discussion Questions For *PLANET EARTH*

By **Barbara Taylor**

Planet Earth consists of the perfect combination of water, air, and land. Since scientists know that 70 percent of the planet is covered by water, how do you predict the increased melting of glaciers and polar ice caps will affect the planet's ecosystem? Will those changes have any effect on the seasons or on the length of days and nights? Why or why not? Suppose the Earth consisted of 70 percent land rather than water. How would life on Earth be different then? Be sure to find some evidence to support your conjectures.

Which do you find most interesting: the extremely hot inside of Earth or the outside of the planet? Why?

Find a newspaper, magazine or online article on one of Earth's natural disasters, such as an earthquake, a tsunami, a tornado or a hurricane. Why do earthquakes and tsunamis often occur simultaneously? As the planet's ecosystem begins to change, what effects do you predict these changes will have on volcanoes, earthquakes, weather, the rivers, the coastlines, and the climate?

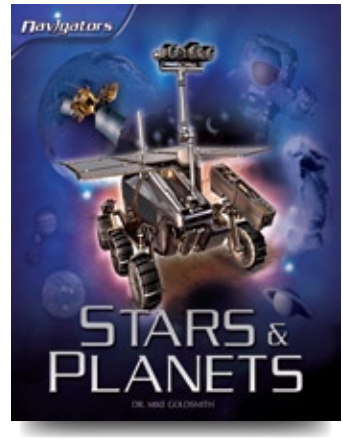
Which aspect of Earth's delicate balance do you consider to be the most important for life as we know it to continue? Why?

As the earth's climate continues to change, what adaptations will its residents have to make in order to survive?

Look on pages 40-41 for influences on the planet's climate. Search through websites, magazines and books to find pictures that depict these influences and how they are changing our home. What are some steps you can take to reduce the effects humankind is having on Earth?

Anticipation/Reaction Guide for *STARS & PLANETS*

By **Mike Goldsmith**



Directions: Read each of the following statements and then go to the before column to circle T if you think it is true, F if you believe it is false, or U if you are undecided. After you have finished reading the book *Stars & Planets,* go back and check your answers. Place the correct answers in the after column. Discuss with a classmate, friend or parent your reasons for changing your answers.

Before		After
T F U	The Sun's web of gravity affects only the planets that move around it.	T F U
T F U	The planets that are closest to the Sun are farther apart from each other than the planets that are further away from the Sun.	T F U
T F U	The galaxies into which stars are grouped contain millions, billions, and trillions of stars.	T F U
T F U	Every second the Whirlpool Galaxy 3,000 miles away from us.	T F U
T F U	Our universe began around 50,000 years ago.	T F U
T F U	Scientists think that space is filled with dark energy, an unknown force that resists gravity's pull.	T F U
T F U	Scientists have two theories about the universe's future: Either everything will slow down and burn out, causing a big chill or everything will continue to grow and tear apart, causing a big rip.	T F U
T F U	Scientists are convinced that the Sun could contain1,000 Earths.	T F U
T F U	The temperature of Venus is actually hotter than Mercury.	T F U
T F U	Life on Earth exists because of our location in the solar system. We are not so close that all of our water boils; nor are we so far away that all of it freezes.	T F U
T F U	The cores of Jupiter and Saturn are gas and volcanic ash.	T F U
T F U	So massive is it that Planet Jupiter could fit all the other planets in its interior.	T F U
T F U	Scientists theorize that Saturn's rings are remains of objects that came to close to the planet and were changed into dust particles.	T F U
T F U	The solar system consists of one sun, ten planets, and 2,000 small moons.	T F U
T F U	Dependent on hydrogen, stars become super giants once they run out of the element they use to convert helium to other elements.	T F U

Jot Chart for *STARS & PLANETS*

By **Mike Goldsmith**

Using the jot chart below, fill in the columns with information as you read the book *Stars & Planets*. Be sure to share what you are learning with a classmate, a teacher, or a family member. Bet you'll impress them with what you know.

Name of Celestial Body	What Is It?	Three Cool Facts	Sketch
Sun			
Mercury			
Venus			
Earth			
Mars			
Jupiter			
Saturn			
Uranus			
Neptune			
Blue Giant			
Space Clouds			
Space Rubble			
Supernova			

Navigators

Discussion Questions and Activities for *STARS & PLANETS*

By **Mike Goldsmith**

Humans have stared up into the sky for hundreds of years, pondering what lies above them. Imagine that you were one of those early humans looking into the sky and seeing part of the universe that you could never reach. What would your thoughts be?

Despite its vastness and the fact that scientists aren't sure what is at the edge of our known universe, chances are likely that there are other solar systems. What do you think those solar systems may be like? Why? How likely do you think it will be that other solar systems will be similar to ours? Why?

Scientists doubt that life as we know it can exist on the other planets in our solar system. Do you think it is likely that other life forms may exist on the other planets? Why or why not? If they do exist, what adaptations would we have to make in order to survive there?

Choose one of the quotes from scientists such as the one on page 19. Explain what you think is meant by the speaker and how this comment added to what you know about the stars and planets that whirl around you.

Using the information provided in *Stars & Planets* as well as pertinent websites, describe a day on three different planets. Be sure to make note of temperature, length of days and nights, and what you might see and experience during that day.

The footprints of humans on this planet are quite deep already despite the fact that we have only been around for a relatively short period of time. Consider the factors that have contributed to Earth being able to sustain life as we know it. How and why are those factors beginning to change? Which factor do you consider the most important in continuing life as we know it on Earth? Why?

What do you find most fascinating about the birth and death of stars? Why?

Referring to the books and websites suggested in *Stars & Planets,* trace the evolution of the space a programs of the United States and Russia. What mistakes were made? What successes occurred? How costly is space exploration? Do you think the exploration is worth the cost or should money be spent in other ways? Why?

Create a detailed timeline that depicts the space race. What other countries have been involved in space exploration? In what ways? Why have so few nations attempted to explore the world beyond our planet?

How likely do you think it is that space travel will become as commonplace as airplane travel today? Why?

What special considerations must be made as more and more space stations are set up in the skies above us? Why are these so important?

Unsure about whether there is life anywhere other than our planet, scientists continue to monitor the skies and send signals to other planets. What sort of messages of reassurance would you give to these other life forms, if they exist? Write a series of brief messages and postcards that could be sent to aliens.

Anticipation/Reaction Guide for *TECHNOLOGY*

By **Peter Kent**

Directions: Read each of the following statements and then go to the before column to circle T if you think it is true, F if you believe it is false, or U if you are undecided. After you have finished reading the book *Technology,* go back and check your answers. Place the correct answers in the after column. Discuss with a classmate, friend or parent your reasons for changing your answers.

Before		After
T F U	Soldiers use unmanned aerial vehicles to survey, map, and spy on areas from above.	T F U
T F U	Czech for "forced labor," robots are fairly commonly parts of today's work force with nearly 1.5 million of them assisting humans in some way.	T F U
T F U	Binary code arises from the letters from sampled sound waves and helps us switch on and off our appliances.	T F U
T F U	Digital music files can store many hours of music in extremely small spaces.	T F U
T F U	Technology is even changing how vehicles move through mountain tunnels, the result of rotating disks that cut into the rock to make the route deeper and straighter than the older routes through mountain passes.	T F U
T F U	Today's technology allows engineers to build superbridges that cross seas.	T F U
T F U	Costing $390 million, the Milau Viaduct is the tallest bridge built, to date.	T F U
T F U	Someday scientists hope to use nanobots to inject only the diseased cells of humans, avoiding damage to the healthy cells.	T F U
T F U	Working with nanomachines involves manipulating huge pieces of plastic, each consisting of fifteen different atoms.	T F U
T F U	Today's moviegoers are able to enjoy films relying on computer graphics to create creatures that look, move and behave quite naturally.	T F U
T F U	When creating graphic games, animators never rely on actors to perform the actions of one of the characters.	T F U
T F U	Centrifugal force is the force that overcomes gravity and allows passengers and roller coasters to stay in place when they make a loop in the air.	T F U
T F U	The world's tallest roller coaster can be found at Six Flags Over Georgia.	T F U
T F U	Some spacecraft rely on ion engines, which are powered by xenon gas.	T F U
T F U	It is essential that all the machinery in nuclear power plants is built to high standards.	T F U

Magic Square For *TECHNOLOGY*

By **Peter Kent**

Read the sentences in each box, filling in the blank with the correct word from the list below the square. When you have completed the square correctly, the numbers in each row, each column, and each diagonal will add up to the same number.

Spacecraft that fly long distances require very little or light _____ so that they are not too heavy for rockets to carry.	Material that is strong and light will be used to create a wire that could support a _____, making it easier for passengers to climb into orbit.	Power generated from _____ will never run out, leaving the ocean to become the perfect provider of energy resources in the future.
There are three basic units in a _____ —the reactor, the turbine, and the generator.	_____ helps a submarine to navigate by sending out sounds that bounce back when they encounter an object.	A submarine takes _____ into its ballast tanks when its crew needs to dive.
Scientists are trying to create a craft that will be powered by _____ from the Sun.	The United States Air Force currently operates more than 24 GPS _____ that aid in navigation.	_____ music files are so compressed that they are able to hold many hours of music while using a small amount of memory on a digital hard drive.

1. water **2.** radiation **3.** space elevator
4. fuel **5.** sonar **6.** digital
7. satellites **8.** waves **9.** nuclear power plant

Discussion Questions And Activities For *TECHNOLOGY*

By **Peter Kent**

Which of the technological innovations described in the book *Technology* is the most intriguing to you? Why?

Using your own creativity and science knowledge, design some form of technology that you think might be particularly useful in tomorrow's world.

Referring to additional books, websites, and your own observations, create a timeline of technology complete with dates and costs. Go as far back as you can and find photographs illustrating these cutting edge innovations.

Using whatever materials you have available, design and build a model of a solar panel and a wave-powered device.

Investigate how roads and railroad tracks were built through mountains decades ago. Compare how they are being built today. What are some advantages and disadvantages to both techniques?

Since it is centrifugal force that keeps the riders in a roller coaster safe, is it possible for the coaster to go too fast or too slow for the safety of its passengers, somehow bypassing centrifugal force? Why or why not?