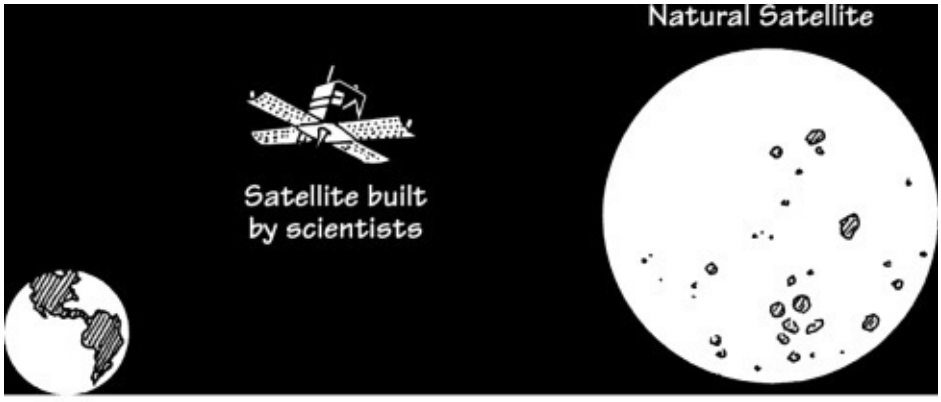
Read the article "Watching Earth from Space" before answering Numbers 1 through 5.



Watching Earth from Space

We are learning about life on Earth from a large satellite in space. Scientists built the satellite and used a rocket to launch it into space in 1998. It is the International Space Station, or ISS. Fifteen countries cooperated to build and operate it. The space station is about 250 miles above Earth and orbits, or circles, Earth sixteen times a day. It is a little longer than a United States football field and weighs almost one million pounds.

Since 2000, people have lived and been active on the space station. One purpose of the ISS is to learn about living in space. Another is to conduct experiments. The findings should make life better for people on Earth. Crews live on the ISS to gather information about space and Earth. A part that is like a big sunroom was attached to the space station in 2010. From here, astronauts can view Earth from space. They can observe lights of cities on Earth. They can watch other astronauts walking in space and study objects like asteroids in space. It is like having an eye on the universe.

In 2011, a new camera was placed on the space station that records happenings on Earth. The camera gives scientists a better tool to research natural events on Earth, such as lightning. It also gives information about the effects of human activities on our planet.

Space exploration began more than fifty years ago when Russia sent the first human-made satellite into orbit. In 1962, John Glenn, an American, orbited Earth. Then in 1969, people around the world watched Neil Armstrong's walk on the surface of the moon.

GO ON →

The Skylab space station was launched in 1973. It had no human passengers. Later, a crew went to live on Skylab for a month. Three crews of astronauts lived on Skylab over the following nine months. Skylab proved it was possible for people to survive in space, but more importantly, they could work in orbit.

Scientists also figured out how to make a vehicle that could go back and forth between Earth and space. The next step was building such a space shuttle. Having such a vehicle would greatly simplify space exploration. *Columbia*, launched in 1981, was the first shuttle that carried astronauts. The space shuttles were larger than the earlier spaceships and they carried both pilots and scientists. *Challenger*, *Discovery*, *Atlantis*, and *Endeavour* later joined the fleet of shuttles.

The shuttle was important in building the International Space Station. At first, shuttle flights brought construction parts into space. Later, flights brought crews to live on the space station. Shuttles continue to serve as transportation for crews and supplies.

For more than ten years, the ISS's space laboratory has given new information that will improve our future on Earth. Studies about infectious diseases have opened new ways to prevent those diseases. The benefits of ultrasound have increased due to its use on the space station. Ultrasound has deepened understanding about gravity's effects on the human body. It also has helped to discover the health problems of people living on the space station.

We have learned new ways to treat heart disease, cancer, and bone disease as a result of research on the ISS. Experiments with plants have shown they can grow and be used as food on space expeditions. Moreover, they are a way to make air and water clean. We have already seen many good things come from experiments on the ISS. Scientists believe we will continue to benefit from work done in space.

GO ON →

Name: _____ Date: _____

Now answer Numbers 1 through 5. Base your answers on "Watching Earth from Space."

1 Read the sentence from the article.

Since 2000, people have lived and been active on the space station.

The suffix *-ive*, as in *active*, means "tending to or being likely to." What would someone who is communicative probably enjoy?

(A) eating
(B) playing
(C) reading
(D) talking

2 This question has two parts. First, answer part A. Then, answer part B.

Part A: How does the author organize "Watching Earth from Space"?

(A) by showing causes and effects in space
(B) by comparing and contrasting Earth and space
(C) by explaining sequence of events in exploring space
(D) by discussing problems and solutions in using a camera in space

Part B: Which sentence from the article **best** shows how the text is organized?

(A) "The space station is about 250 miles above Earth and orbits, or circles, Earth sixteen times a day."
(B) "The camera gives scientists a better tool to research natural events on Earth, such as lightning."
(C) "*Columbia,* launched in 1981, was the first shuttle that carried astronauts."
(D) "Shuttles continue to serve as transportation for crews and supplies."

Name: _____ Date: _____

3 Read the sentence from the article.

Having such a vehicle would greatly simplify space exploration.

What does the word simplify mean?

(A) to make something simpler

(B) to make something not simple

(C) to make something less simple

(D) to make something simple again

4 Put the events from the article in the correct sequence by numbering them from 1 to 4. Write the correct number in front of each event.

_____ A camera was placed on the ISS.

_____ People started living on the space station.

_____ The ISS was launched into space.

_____ A part was added to the space station.

GO ON →

Name: _____ Date: _____

5 What are some effects of experiments done on the International Space Station? Select **two** choices.

Ⓐ We have learned how to keep a satellite in orbit.

Ⓑ We have learned new ways to treat some diseases.

Ⓒ Scientists figured out how to make a space vehicle.

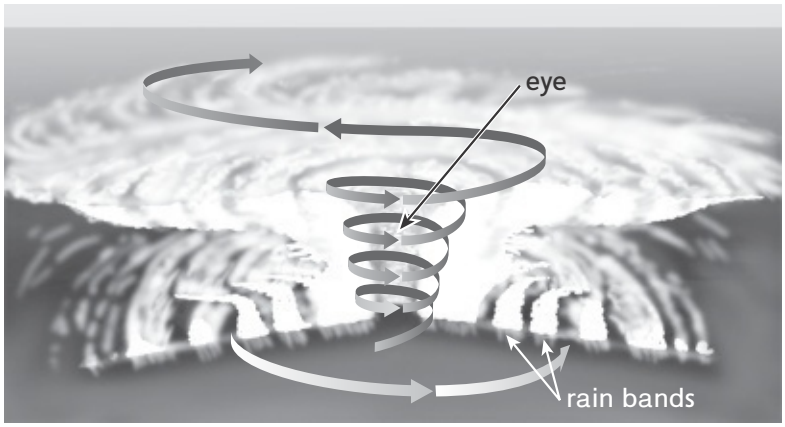
Ⓓ Astronauts have been able to walk on Earth's moon.

Ⓔ We have discovered how to grow and use plants in space.

Ⓕ People from many countries have learned how to cooperate.

GO ON →

Read the article "The Life of a Hurricane" before answering Numbers 6 through 10.



The Life of a Hurricane

What do hurricanes, cyclones, and typhoons have in common? They are all different names for the same severe tropical storm that is known as a tropical cyclone. In this article, the word *hurricane* will be used to discuss this type of storm.

What creates the possibility for a hurricane to develop over ocean water? At least three elements must be present. First, the water must be warm enough to give off heat and moisture into the atmosphere. Second, water already in the air must mix with the heat and moisture from the ocean. Finally, easterly winds must be blowing. Conditions are usually best for hurricanes in the late summer or early fall.

The warm, wet air rises because warm air is lighter than cold air. The wind moves the heat and water high into the atmosphere. Then, Earth's turning begins to work against the easterly winds, twisting the growing storm into a tube shape. The center of this tube is called the eye. The heat and moisture from the ocean's surface come into contact with the cooler air higher up, creating thunderstorms. Then, the cooler air travels back toward the ocean's surface and pulls more moisture from the ocean. Once that moisture rises into the thunderclouds, it is released as heavy rain. This type of rain usually accompanies hurricanes.

The winds increase in speed and begin to move the enormous storm across the ocean. As long as hurricanes remain over water, they have the ability to keep increasing in size and strength.

GO ON →

Usually the weather is calm in the eye of the hurricane. The eye may range from 2 miles to 200 miles across, and the hurricane itself might be as big as 400 to 500 miles across. Rain bands spin toward the center of the hurricane. They often bring high winds and heavy rainfall. Calmer weather is found between the rain bands.

A tropical storm qualifies as a hurricane when its winds reach 74 miles an hour. Scientists have measured winds in hurricanes that move at more than twice that speed. Hurricanes have been given names since 1950. The names of the worst storms are retired—that is, they are not used again.

Hurricanes are given a number from 1 to 5. Hurricanes with the number 1 are the least dangerous. Those given a 5 are the most dangerous. The strongest hurricane ever to hit the United States struck Florida in 1935. The second strongest was Hurricane Katrina, which struck Louisiana in 2005.

What causes the storm to end? Sometimes the power of a hurricane diminishes, or fades, when it travels into the path of strong westerly winds. This disturbs its course, and can cause the storm to move over cooler northern waters. The storm no longer gets power from the warm ocean water, and it finally dies out.

At other times, a hurricane travels until it hits land. Once it is over land, it causes almost unbelievable damage. Tornadoes may form in the rain bands. High winds knock over structures. The ocean can flood towns. These floods are responsible for a great deal of damage. Cars, houses, and businesses are often destroyed. But a hurricane over land doesn't have the warm ocean water to help it grow. It will quickly lose power. At last, it ends up as nothing more than rain showers.

Scientists study hurricanes to understand them and predict them better. They use weather satellites to find out more about the storms. Sometimes, they fly planes right into the eye of the hurricane to get information! What they learn will help people when these terrible storms threaten.

GO ON →

Name: _____ Date: _____

Now answer Numbers 6 through 10. Base your answers on "The Life of a Hurricane."

6 Read the sentence from the article.

What creates the possibility for a hurricane to develop over ocean water?

The suffix *-ity,* as in *possibility,* means "state or quality of." What are you told to do if you are told to show civility?

(A) be brave
(B) be polite
(C) be funny
(D) be careful

7 This question has two parts. First, answer part A. Then, answer part B.

Part A: Why does the author of "The Life of a Hurricane" consider the blowing of easterly winds to be an important occurrence?

(A) It contributes to flooding.
(B) It causes hurricanes to end.
(C) It creates the eye of the hurricane.
(D) It contributes to hurricane formation.

Part B: Which sentence from the article **best** supports your answer in part A?

(A) "At least three elements must be present."
(B) "The center of this tube is called the eye."
(C) "This type of rain usually accompanies hurricanes."
(D) "Calmer weather is found between the rain bands."

GO ON →

Name: _____ Date: _____

8 What happens before a growing storm twists into a tube shape? Select **two** options.

- (A) Warm air rises.
- (B) Heavy rain falls.
- (C) The storm is named.
- (D) The storm gets a number.
- (E) Wind moves the heat and water up.
- (F) Cooler air travels back to the ocean surface.

9 What happens after the warm air and moisture meet cooler air? Underline the sentence that states what happens next.

The warm, wet air rises because warm air is lighter than cold air. The wind moves the heat and water high into the atmosphere. Then, Earth's turning begins to work against the easterly winds, twisting the growing storm into a tube shape. The center of this tube is called the eye. The heat and moisture from the ocean's surface come into contact with the cooler air higher up, creating thunderstorms. Then, the cooler air travels back toward the ocean's surface and pulls more moisture from the ocean. Once that moisture rises into the thunderclouds, it is released as heavy rain. This type of rain usually accompanies hurricanes.

GO ON →

Name: _____ Date: _____

10 Read the sentence from the passage.

Hurricanes with the number 1 are the least dangerous.

Based on the suffix *-ous,* what does the word dangerous mean?

(A) after danger

(B) before danger

(C) marked by danger

(D) without any danger

Name: _____ Date: _____

Now answer Number 11. Base your answer on "Watching Earth from Space" and "The Life of a Hurricane."

11 Compare and contrast how the authors use sequence in the articles. Support your answer with details from both texts.