

eMPower™ **ME**

STUDENT TEST BOOKLET

Reading

Grade 7





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Practice Test

Directions

You will now read two related passages and answer the questions that follow. Some of these questions will ask you to compare the two passages.

146693A Passage Common

Selection 1

What Is Pluto?

by Heather R. Smith

- 1 Pluto was discovered in 1930 by an astronomer from the United States. An astronomer is a person who studies stars and other objects in space.
- 2 Pluto was known as the smallest planet in the solar system and the ninth planet from the Sun.
- 3 Today, Pluto is called a “dwarf planet.” A dwarf planet orbits the Sun just like other planets, but it is smaller. A dwarf planet is so small it cannot clear other objects out of its path.
- 4 On average, Pluto is more than 3.6 billion miles (5.8 billion kilometers) away from the Sun. That is about 40 times as far from the Sun as Earth. Pluto orbits the Sun in an oval like a racetrack. Because of its oval orbit, Pluto is sometimes closer to the Sun than at other times. At its closest point to the Sun, Pluto is still billions of miles away.
- 5 Pluto is in a region called the Kuiper (KY-per) Belt. Thousands of small, icy objects like Pluto are in the Kuiper Belt.
- 6 Pluto is only 1,400 miles (2,300 kilometers) wide. That’s about half the width of the United States. Pluto is slightly smaller than Earth’s moon. It takes Pluto 248 years to go around the Sun. One day on Pluto is about 6 1/2 days on Earth.
- 7 Pluto was named by an 11-year-old girl from England. The dwarf planet has three moons. Its largest moon is named Charon (KER-ən). Charon is about half the size of Pluto.

Why Is Pluto Not Called a Planet Anymore?

- 8 In 2003, an astronomer saw a new object beyond Pluto. The astronomer thought he had found a new planet. The object he saw was larger than Pluto. He named the object Eris (EER-is).
- 9 Finding Eris caused other astronomers to talk about what makes a planet a “planet.” There is a group of astronomers that names objects in space. This group decided that Pluto was not really a planet because of its size and location in space. So Pluto and objects like it are now called dwarf planets.
- 10 Pluto is also called a plutoid. A plutoid is a dwarf planet that is farther out in space than the planet Neptune. The three known plutoids are Pluto, Eris and Makemake (MAH-kee-MAH-kee). Astronomers use telescopes to discover new objects like plutoids.
- 11 Scientists are learning more about the universe and Earth’s place in it. What they learn may cause them to think about how objects like planets are grouped. Scientists group objects that are like each other to better understand them. Learning more about faraway objects in the solar system is helping astronomers learn more about what it means to be a planet.

What Is Pluto Like?

- 12 Pluto is very, very cold. The temperature on Pluto is 375 to 400 degrees below zero. Pluto is so far away from Earth that scientists know very little about what it is like. Pluto is probably covered with ice.
- 13 Pluto has about one-fifteenth the gravity of Earth. A person who weighs 100 pounds on Earth would weigh only 7 pounds on Pluto.
- 14 Most planets orbit the Sun in a near-circle. The Sun is in the center of the circle. But Pluto does not orbit in a circle! The orbit of Pluto is shaped like an oval. And the Sun is not in the center. Pluto's orbit is also tilted.

How Is NASA Exploring Pluto Today?

- 15 NASA learns about Pluto from pictures taken with telescopes. Pictures from the Hubble Space Telescope helped scientists find the moons Nix and Hydra. Hubble has also taken pictures of Pluto's surface. The pictures show dark and light areas on Pluto. Pluto is so far away that even pictures taken by telescopes in space are a little fuzzy.
- 16 In 2006, NASA launched the first mission to Pluto. It is called New Horizons. New Horizons is a spacecraft that is going to the edge of the solar system. The spacecraft is about the size of a piano. It will take nine years to reach Pluto. In 2015, New Horizons will arrive at Pluto. The mission will spend more than five months studying Pluto and its moons. New Horizons will then study other objects in the Kuiper Belt.
- 17 New Horizons has cameras that will take pictures of Pluto. The spacecraft also has science tools to gather information about Pluto. These pictures and information will help scientists learn more about the dwarf planet.

Why Is NASA Exploring Pluto?

- 18 NASA sends spacecraft to other planets because exploring space is exciting. It helps people learn new things. Spacecraft have visited every major planet in the solar system. Studying places like Pluto may help scientists learn how planets form.

Source: <http://www.nasa.gov/audience/forstudents/k-4/stories/what-is-pluto-k4.html#.VC11pCldUmA>

146694A Passage Common

Read passage 2. Then answer the questions that follow.

Selection 2

Should Pluto Be a Planet? New Finds Drive Debate

by Victoria Jaggard

- 1 Officially, Pluto is still not a planet. But five years after the ruling that demoted the icy object to dwarf planet, people continue struggling with the definition, and the debate over what exactly should be called a planet remains as contentious as any political divide. “Maybe it’s just an argument over semantics, but we ought to be worried about semantics. We learned that lesson when the definition was changed,” said Marc Kuchner, a planetary scientist at NASA’s Goddard Space Flight Center in Maryland.
- 2 “After the ruling, astronomers everywhere were besieged by complaints from everyone big and small. A planet is a very personal thing—we think of the Earth, the moon, and the other planets as part of our home, and maybe that’s why we got so upset about Pluto.”
- 3 Since the 2006 ruling, astronomers have also made a number of scientific advances that further cloud the issue, from discoveries of planets that don’t orbit stars to new models of how our own solar system may have rearranged itself since birth.
- 4 This time next year¹ the International Astronomical Union (IAU)—the organization that originally called for a vote on a planet definition—will hold its general assembly in Beijing, China, and many in the field wonder whether the time is right to revisit the decision.
- #### **Birth of the Dwarf Planet**
- 5 The issue of whether Pluto should be a planet first arose in the 1970s, when scientists were able to refine their estimates for the mass and size of the distant body. With each new measurement, Pluto got lighter and tinier, until astronomers realized that the object is in fact smaller than Earth’s moon and has a very low density.
- 6 Adding to the oddities, in 1978 scientists announced they’d found a moon of Pluto—but one that’s almost half its size, making it the largest moon in relation to its parent body.
- 7 Over the decades scientists continued to find similarly large objects in Pluto’s neighborhood, a region of the solar system beyond the orbit of Neptune called the Kuiper belt.
- 8 The biggest challenge for Pluto came in 2005, when Caltech astronomer Mike Brown announced that he’d found a Kuiper belt object more massive than Pluto—a potential tenth planet provisionally called 2003 UB313.
- 9 The discovery prompted the IAU to convene a committee to decide on an official definition of a planet.
- 10 “It was a bureaucratic problem, as it had to do with naming rights for these kinds of things,” said Owen Gingerich, the Harvard-Smithsonian astronomer who chaired the committee. After all, if 2003 UB313 really was a new planet, it would need a proper name on which everyone could agree.

¹2012

- 11 In drafting a definition, “there were two possible routes to take—one that would deal with the physical nature of these objects, and another that would address dynamically where they fit into the structure of the solar system, with respect to their orbits and so on.”
- 12 The committee initially proposed that there be two categories of planets: the classical planets and the group of planet-like bodies beyond Neptune, to be called plutons, “as a way of tipping our hat to Pluto,” Gingerich said.
- 13 The planet-like object Ceres would have to be in a separate class, because it resides in the main asteroid belt, between the orbits of Mars and Jupiter. So the committee suggested it be called a dwarf planet.
- 14 The draft definition was put to a vote in 2006 at the IAU general assembly in Prague, the Czech Republic. What emerged from the session is that, to be a planet, an object must:
- be in orbit around the sun,
 - have sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape,
 - have cleared the neighborhood around its orbit.
- 15 Instead of plutons, the IAU members present voted that Pluto, Ceres, and 2003 UB313—now known as Eris—would all be called dwarf planets, and that this term is not for a subclass of planets but is for a unique category of solar system objects.

Exoplanets Complicate Matters

- 16 At the time of the ruling, the IAU noted that the new definition does not apply to anything outside the solar system, leaving it unclear how the organization defines the planetary objects found orbiting other stars.
- 17 Since 2006 there’s been an explosion in the number of these extrasolar planets, or exoplanets, known to exist, with the current count at more than 400 and rising. Many are bigger than the gas giant Jupiter, but astronomers have found an increasing number of worlds close to Earth’s mass, some of which may be habitable.
- 18 And in the past few years astronomers have even found rocky planets akin to Earth’s mass that don’t orbit stars at all.
- 19 By the current IAU definition, none of these objects are official planets, because they violate the first rule about orbiting the Sun.
- 20 “I was disappointed when I learned that exoplanets were not included in the definition,” said NASA’s Kuchner.
- 21 But for now, he said, the issue is a moot point, because the definition of a planet was necessary mostly to sort out objects that are much smaller than anything we’ve seen outside our solar system.
- 22 The second part of the definition, that planets must be massive enough to be nearly round, helped draw a line between bodies such as Pluto and large asteroids such as 433 Eros, a 21-mile-long (34-kilometer-long) space rock shaped somewhat like a peanut.
- 23 “For now we’re good at finding exoplanets that are several times bigger than Earth. The smallest planets we’ve seen around other stars are much bigger than the bodies for which element two of the definition matters,” Kuchner said. “And besides, we usually can’t see their shapes to tell if they are round or not.”
- 24 “We’re also good at seeing big clouds of small particles of dust. . . . But in between dust grains up to a millimeter in size and the smallest planets we can see, we’re blind.”

- 25 According to Kuchner, “the revolution that happened in 2006 was about how dwarf planets are not planets. Instead this is another kind of object in the solar system that we have to be aware of.”
- 26 He likens the situation to a child adjusting to a new sibling: “You don’t know how you’re supposed to feel about it at first. I’d like us all to think about the dwarf planets out there as new siblings that we have to get to know and learn to love.”

Jaggard, Victoria. “Should Pluto Be a Planet? New Finds Drive Debate.” *National Geographic News* (August 24, 2011).

148217A Multiple Choice A Common

1. What is the author’s main purpose for writing **Selection 1**?
- A to provide facts about Pluto
 - B to argue for space exploration
 - C to compare two views of Pluto
 - D to defend the decision of the astronomers

148215A Multiple Choice B Common

2. With which of the following statements would the author of **Selection 1 most likely** agree?
- A Dwarf planets are not as important as planets.
 - B Space exploration provides valuable knowledge.
 - C Spacecraft will not be able to reach dwarf planets.
 - D Definitions of scientific terms should remain constant.

148216A Multiple Choice B Common

3. In **Selection 2**, why does the author state, “A planet is a very personal thing”?
- A to describe the current excitement about space exploration
 - B to indicate that people feel an emotional connection to the planets
 - C to motivate readers to pay more attention to news about space
 - D to suggest that the use of the term “planet” is really up to each person

148212A Multiple Choice D Common

4. In paragraph 12 of **Selection 2**, what is the meaning of the phrase tipping our hat?
- A admiring
 - B categorizing
 - C defining
 - D honoring

147963A Evidence-Based Selected Response C;B Common

This question has two parts. Make sure to answer both parts of the question.

5. Which of the following sentences states a central idea of **Selection 2**?
- A The definition of a planet should not have been changed.
 - B Exoplanets should have been included in the definition of planets.
 - C New discoveries make grouping planetary objects more complicated.
 - D Scientists need to agree about how to interpret the evidence they discover.

Which evidence from **Selection 2** **best** supports the answer above?

- A “We learned that lesson when the definition was changed,” said Marc Kuchner, a planetary scientist.”
- B “Astronomers have also made a number of scientific advances that further cloud the issue.”
- C “I was disappointed when I learned that exoplanets were not included in the definition.”
- D “The revolution that happened in 2006 was about how dwarf planets are not planets.”

148219A Constructed Response Common

6. State the central ideas presented in **Selection 1** and analyze how the author develops these ideas in the selection.

Be sure to include

- an introduction and a conclusion.
- details from **Selection 1**.
- precise words and sentences.