

## When Is a Planet Not a Planet? When It Is Pluto!

Members of the International Astronomical Union (IAU) created intense debate among scientists in August 2006 when they officially determined that Pluto was not a planet. Pluto had been considered a planet since it was discovered in 1930. However, as scientists learned more over the years, they increasingly questioned whether Pluto actually met the definition of a planet.

Part of the difficulty came from new information. Pluto is smaller than scientists originally thought. It may not have been formed by the same process that formed the other eight planets. Based on this information, scientists at the IAU meeting decided to write a new definition of the term *planet*. Part of the new definition requires that a planet have no other objects in its orbit. Pluto does not fit the new definition because scientists recently discovered a large number of objects orbiting the sun beyond Neptune in the area of Pluto. Scientists named this area of the solar system the Kuiper Belt. Since Pluto does not fit the new definition of a planet, it is now called a *dwarf planet*. Other dwarf planets include Ceres, the largest asteroid between Mars and Jupiter, and the newly named Eris, which is located in the region beyond Neptune.

Eris was discovered by three scientists: Professor Michael E. Brown of the California Institute of Technology, Chad Trujillo of the Gemini Observatory in Hawaii, and David Rubinowitz of Yale University. Scientists named Eris after the goddess of discord and conflict in Greek mythology. The name turned out to fit well, considering all the disagreement caused by Pluto's change to dwarf planet. Eris is larger in diameter than Pluto. It would have had to become a planet, too, if Pluto remained one. Several other large asteroids might also have been included, possibly increasing overnight the number of planets to twelve.

Because there are no longer nine planets in our solar system, other changes must also be made. Planet trading cards distributed by the North American Space Agency must be changed. New science textbooks will be necessary as well as new astronomy lessons. The phrase *My Very Educated Mother Just Served Us Nine Pizzas* will not work anymore, either. In the past this phrase reminded students of the nine planets in the solar system. Now there are only eight.

Many people protested the change. Some scientists do not like the new definition of a planet. Others disagree with how the voting took place. The IAU has more than nine thousand members worldwide, but only the four hundred members who attended the conference could vote. Therefore, some scientists argue that this new definition of a planet and Pluto's new label do not represent the thinking of all—or even most—scientists today.

24. Members of the International Astronomical Union (IAU) indicate that one requirement for defining a planet is that a planet have no other objects in its orbit. Now read the following inference drawn from lines 31–36.

In order for the definition of "what makes a planet a planet" to be acceptable to most scientists, a majority of scientists need to agree on that definition.

Based upon the inference, what conclusion can the reader draw about what would have made the revised definition acceptable to scientists?

- F. Scientists would have decided to question the need to change Pluto's status.
- G. Many scientists would agree on the process to label new planets.
- H. More than half of IAU members would claim Pluto was deserving of special attention.
- J. Most of the membership of the IAU would have attended the August 2006 meeting.

## Melynda Ross Test Item Deconstruction 6TH Grade LA

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Required Concepts and Vocabulary		Required Skills	
define	comprehend	Read	define
context clues	interpret	comprehend	context clues
gain information from		interpret	gain information from
draw conclusions		draw conclusions	
Required Prior Knowledge		Item Distractors	
Solar System/planets, etc There are 8 planets that were formed by a similar process. Asteroids are smaller than planets. How voting usually takes place.		F. Obviously, some scientists DID question the need to change Pluto's status. G. Many scientists WOULD have to agree-- but it must be a majority. H. Yes, more than half is a majority, but they weren't asking for "special attention"	

41. Jake's teacher has given him an assignment to write a persuasive speech. Read what he has written.

(1) Students should be allowed to chew gum in school. (2) In tests, scientists have found that the ability to memorize information increases when a person chews gum. (3) The act of chewing raises the heart rate and causes more oxygen to be pumped into the brain. (4) Chewing gum could also help raise student test scores. (5) Studies show the act of chewing reduces anxiety.

3e (DOK 2)

Which of the following will Jake add to his speech after sentence 1 for more effective organization?

- A. They enjoy the sweet flavor of gum.
- B. They try to chew gum in school anyway.
- C. Chewing gum has many benefits.
- D. Some chewing gum is sugar-free.

Required Concepts and Vocabulary	Required Skills
persuasive memorize anxiety	Read organize persuade sequence
Required Prior Knowledge	Item Distractors
Heart pumps blood which carries oxygen-- a good thing. Raising test scores is a good thing. To do well on a test you must remember information. Anxiety is a bad thing. Students are usually not allowed to chew gum in school.	A. Students enjoy gum, but this would not be an appropriate argument here (or help organization). B. Students do try to chew gum in school anyway, but that is irrelevant. D. Sugar-free gum is likely to appeal to adults, but this does not help organize the paper.

47. Danielle is writing a speech to persuade the school to add dance to the P.E. program. She started by writing an outline. Read the following draft of her outline.

Reasons for Adding Dance in P.E.

- I. Good exercise
  - A. Move more gracefully
  - B. Build strong muscles
- II. Additional benefits
  - A. Cooperate with others
  - B. Use it outside of school

3a (DOK 2)

Which of the following reasons belongs under "II. Additional benefits"?

- A. Get an active workout
- B. Develop strong legs
- C. Learn social skills
- D. Improve balance

Required Concepts and Vocabulary	Required Skills
persuade	Read organize Justify
Required Prior Knowledge	Item Distractors
Draft comes before the final. An outline organizes a draft. Supporting statements come after the major heading in an outline.	A. This is a rewording of the first heading B. This is true, but will go under the first heading D. This is a re-wording of "A. Move more gracefully"

Read the following draft that Alex has written for class. Then answer questions 57–58 based upon the draft.

“Well, Benji,” said Dr. Osburn. “These x-rays show that your arm is broken. I’m going to put a cast on your arm. The cast will hold your bone in place while it grows back together.”

Dr. Osburn held up what looked like a long thin sock. “This is called a stockinet,” Dr. Osburn explained. “The stockinet goes on first to protect your skin from the rough cast.” Dr. Osburn was quick but careful, and soon the stockinet rested around Benji’s arm like a sleeve. Next, she put soft cotton around his arm so that it looked like a pillow. “This is for extra softness,” she explained.

“Last, we roll on strips of wet fiberglass to make the cast.” Dr. Osburn explained that casts are made out of either plaster or fiberglass. She chose fiberglass because it comes in different colors. Benji asked Dr. Osburn if she could match the color of his skateboard. She could, and she did.

The cast started to feel hard after about fifteen minutes; but Dr. Osburn warned, “Be careful for the next two days. It will take that long for your cast to become completely dry and hard. And after that, young man, no skateboards until this cast comes off!”

58. Alex’s teacher asks him to revise the end of the third paragraph to include descriptive details.

Which of the following revisions adds descriptive details to the third paragraph?

- F. Benji asked Dr. Osburn to show him some of the various colors available for the cast. Benji decided on some of the brightest colors that were on his skateboard, and the colors made his cast look like a rainbow.
- G. Benji asked for a special color for his cast. Dr. Osburn showed him the colors she could use. Benji happily pointed to a bright shiny silver.
- H. Benji asked Dr. Osburn if she could match the bright color of his skateboard. She chose a vivid color that made Benji happy. Benji smiled proudly as he gazed at his colorful cast.
- J. Benji asked Dr. Osburn whether his cast could match the shiny metallic trim on his skateboard. The fiberglass of the cast had a shimmering glaze that now matched the reflective finish of his skateboard.

Required Concepts and Vocabulary	Required Skills
cast x-ray fiberglass skateboard reflective trim (noun) glaze (noun)	Read organize using quotations in paragraphs descriptive language
Required Prior Knowledge	Item Distractors
X-rays show the inside of the body. Strips are wound around the arm to form a cast.	G-H. Give more adjectives and adverbs that are more descriptive than the original. J (correct) actually gives more information.