



Name \_\_\_\_\_ Date \_\_\_\_\_

## PLUTO

Pluto used to be considered the planet farthest from the sun in our solar system. A scientist named Clyde W. Tombaugh accidentally discovered Pluto in 1930. At the time, Clyde was working at the Lowell Observatory in Flagstaff, Arizona and discovered Pluto after doing a very thorough search of the night sky. Pluto's moon, Charon, was discovered in 1978. Pluto orbits a star, our sun, every 248 years. It is a round body that is about 1,429 miles (2300 km) wide. There has been controversy over Pluto ever since it was discovered. Many wanted it classified as a comet or asteroid rather than a planet. Pluto was always considered a planet until a vote by astronomers on August 24, 2006 reclassified it as a dwarf planet.

The International Astronomical Union (IAU) defined a planet as "an object that orbits the sun and is large enough to have become round due to the force of its own gravity." It also stated that the object has to have cleared its orbit of other objects, namely, that it is larger than its surrounding objects. Charon, Pluto's one moon, is about half its size, whereas the moons of the traditional planets are much smaller than their planets. Therefore, Pluto does not "dominate" its area of space. It also has an unusual orbit that overlaps the orbit of Neptune, making it closer to Earth than Neptune for 20 years out of its 248-year orbit.

Many astronomers disagree with the new classification of Pluto. Although Pluto is much smaller than any of the other planets in our solar system, it is more like Earth than Jupiter or Saturn. Pluto and Earth have solid surfaces, while Jupiter and Saturn are made of gas. Some astronomers also bring up the point that less than 5% of astronomers worldwide voted on the new definition of a planet that demoted Pluto to a dwarf planet. There are already petitions being made to reinstate Pluto to its previous status. What do you think? Is Pluto a planet?

### STORY QUESTIONS

- Pluto was reclassified as a dwarf planet after a vote by . . .
  - less than 25% of astronomers
  - less than 15% of astronomers
  - less than 35% of astronomers
  - less than 5% of astronomers
- Other words that can be used in place of *accidentally* are . . .
  - by protection.
  - by mistake.
  - by structure.
  - by formation.
- If you wanted to study about the orbit of Pluto, would this passage be helpful?
  - Yes, it is very helpful.
  - No, there is not enough information.
  - Yes, it provides a little information on that topic.
  - No, it is not reliable information.
- Pluto has one moon named . . .
  - Neptune.
  - Io.
  - Charon.
  - Charlie.



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## ON THE MOUNTAIN TOP

It is an exhilarating feeling to stand at the top of a mountain and look down. There are amazing views. You can tell by looking at a mountain which plants can grow at different heights. The higher you go up the mountain, the colder it is. For every 820 feet you climb, the temperature drops one degree. If you look at the very top of a high mountain, there is usually no or very little vegetation or plants there. Icy wind blows and prevents trees from growing. When mountains get higher than 8,200 feet, there is a timberline. Trees cannot grow above the timberline.

The trees along the mountainside help to protect the mountain soil. This prevents the mountain soil from eroding. When there is too much erosion, there are problems with flooding and landslides. In the wintertime, these cleared-off areas can trigger avalanches.

It is very common to see conifer trees growing on mountains. Most conifers are called evergreens, which means they stay green all of the time. They do not lose their leaves like other trees. The leaves on evergreens are needles. When old needles fall off, they are replaced with new ones. Conifers are able to handle the harsh weather conditions of the mountains. They can survive the cold and the elements.

There are also other types of trees that grow on mountains. In lower portions of the mountain, you can find chestnut, oak, and maple trees.

### STORY QUESTIONS

1. What is this passage mainly about?
  - a. how tall mountains can get
  - b. how trees grow below the timberline
  - c. how conifer trees lose their needles and then replace them
  - d. the different types of trees that can grow on mountains
2. Why does the temperature get cooler the higher you go up the mountain?
  - a. The temperature drops as air pressure rises.
  - b. The temperature drops because there are no trees.
  - c. The temperature drops because of the higher elevation.
  - d. The temperature drops because conifer trees can't grow above the timberline.
3. According to the passage, what are the two main factors that create harsh conditions?
  - a. snow and hail
  - b. sleet and snow
  - c. wind and cold temperatures
  - d. cold temperatures and hail



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## ACIDS AND BASES

Have you ever heard the terms *acid* and *base*? Acids and bases play important roles in your life. Acids and bases can be found in just about everything. Almost every liquid you see is either an acid or a base. The only liquid that is not an acid or a base is distilled water.

An acid has more hydrogen ions. The word *acid* comes from the Latin word *acidus*, which means "sharp." Acids usually have a sour taste. Examples of acids are lemon juice and vinegar. Most citrus fruits have a lot of acids, as do teas and yogurt. Not all acids can be eaten. Some of them can be very harmful. Some acids can burn holes in clothing or skin. These strong acids are used to produce dyes, plastic, fertilizers, and more.

A base is a bitter-tasting chemical. Egg whites and ammonia are bases. Soap is also made from a base. Did you know that your blood is a base? There are many bases that can be eaten, but there are many that are very dangerous to touch, taste, or smell.

Acids and bases are opposites. So when you mix them together, they can neutralize each other. Mixing them together takes a bit of potency away and makes them weaker. When there is too much of an acid, a base will be added to counteract the acidity. Gardeners are constantly working to get the right balance in the soil. If there is too much acid, plants won't grow.

### STORY QUESTIONS

- Which of the following statements is true?
  - Acids and bases are both dangerous to your body.
  - Bases are the weakened form of acids.
  - Acids and bases should never be mixed together.
  - Acids and bases can be found in just about everything.
- Which sentence from the passage supports the previous statement?
  - The only liquid that is not an acid or a base is distilled water.
  - Almost every liquid you see is either an acid or a base.
  - Most citrus fruits have a lot of acids, as do teas and yogurt.
  - These strong acids are used to produce dyes, plastic, fertilizers, and more.
- Which question could be answered after reading this passage?
  - What are some examples of acids and bases?
  - Does a banana have acids in it?
  - How do I neutralize the acids and bases in the food I eat?
  - What is the pH scale?
- What is the meaning of word *potency* in this passage?
  - influence
  - strength
  - speed
  - understood