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Little Planets: Big Problem

Lesson 130

Paired with *See You around the Solar System*

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Lexile®: 1030L, 586 words



How would you feel if only a few planets had been found in the history of the world—and you had discovered one of them? For many years we knew of nine planets in our solar system. Then, in 2005, astronomer Mike Brown and his team discovered a new planet in the solar system, and suddenly there were ten planets!

If a scientist makes a discovery, people must check to make sure it's true. So astronomers from all around the world looked at the new planet, Eris. They were excited, but they weren't sure that Eris was really a planet because it was not quite like most planets, which made scientists start asking questions about what makes an object in space a planet. Eris was most similar to Pluto, the ninth planet in the solar system. If Eris wasn't a planet, then Pluto might not be a planet either.

Anyone interested in planets went crazy. What was the definition of a planet? Astronomers hadn't needed one before, but now they had to decide. They held a big meeting and voted on the rules an object must follow to be called a planet.

Now, to find out if something is a planet, you have to ask three questions:

1. *Does it orbit the sun?* A planet has to go around the sun instead of around another planet. For example, the moon doesn't go around the sun; it goes around Earth. Eris and Pluto go around the sun, so they're planets so far.
2. *Is it round?* Gravity is a force that pulls inward toward the center of a planet. A planet has enough gravity to pull its mass into a spherical, or round, shape. Both Eris and Pluto are round, just like planets.

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3. *Does it clear its path?* The solar system has many pieces of rock, metal, ice, and other objects floating around. A planet has enough gravity to pull in all of the little pieces floating nearby in the same way that a magnet would pull in little pieces of metal. Then those pieces become part of the planet—just like you would roll a ball of dough to pick up extra pieces and make them part of the ball. When all those little pieces are collected, the planet clears its path.

The third rule is the problem because Eris and Pluto are big, but not big enough. They don't have enough gravity to pull all the little floating pieces to them and make those pieces part of the planet. As a result, neither one of them can clear its path. Since Eris and Pluto follow only two of the three rules, they aren't the same as the big planets of the solar system.

Suddenly, instead of finding planet number ten, Mike Brown and his team took away planet number nine.

A lot of people were sad about losing Pluto, but the truth is that Pluto didn't go away. It's still out there far, far away, circling the sun like it always did. Now, though, it's part of a new group called dwarf planets—they look like planets, but they don't act the same as the big planets do.

Eris wasn't the only new dwarf planet to be discovered, and since then astronomers have found two more, which they named Haumea and Makemake. The great thing is that scientists are pretty sure there are more dwarf planets in the solar system just waiting to be discovered. Will you be the one to find them someday?