



What Constitutes a Planet?

Generations of school children grew up confident in the knowledge that there are nine planets—Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Pluto. Then, in 2006, scientists announced to a startled world that Pluto was not, in fact, a planet after all. Why the switch?

It began with the discovery of Pluto's largest moon, Charon, in 1978. Though Pluto had once been believed to be bigger than Mercury, a study of Charon indicated that Pluto was not only smaller than Mercury, but smaller than our own moon. Then scientists started to discover other objects at roughly the same distance away from Pluto as Charon; for example, Eris, which is larger than Pluto. Discovery of these other planet-sized celestial objects in the neighborhood of Pluto prompted the International Astronomical Union (IAU) to assemble a committee in 2005 to accomplish something that had not actually been done before: establish a final, all-encompassing set of criteria to determine exactly what is, and what isn't a planet.

The criteria are as follows. First, in order to be a planet, a celestial body must be in orbit around the sun. But thousands of things orbit the sun, so additional criteria was definitely required, the second of which is this: it must have sufficient mass to assume hydrostatic equilibrium. *Hydrostatic equilibrium* means that a celestial body has enough gravity to overcome other forces and form an approximately spherical-shaped body. This second criteria separates Pluto from the thousands of non-spherical asteroids that currently orbit the sun. It is the third and last criteria that rules out Pluto: it must have cleared the neighborhood around its orbit. This means that there mustn't be anything in its orbit of comparable size except its own satellites (i.e., moons). Pluto fails this criteria on several counts. It both shares its orbit with other objects (like Eris) and its own orbit is inside the orbit of Neptune.

So in 2006 Pluto was reclassified by the IAU as a dwarf planet—a celestial body that resembles a planet but that does not meet all of the technical requirements to actually be one—and it remains a dwarf planet, like Eris, rather than a full-fledged planet, even after scientists discovered a new moon in its orbit in 2007.

Name _____ **Organization of Text**

1. What is the author's purpose in this article? _____

2. What is the central idea of the article? _____

3. Describe the two major sections of the body of the article. How does the author develop each section to support the central idea?

MAJOR SECTION #1:

METHOD OF DEVELOPMENT:

MAJOR SECTION #2:

METHOD OF DEVELOPMENT: