

# Dwarf Planets

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## Vocabulary

Repeat each vocabulary word and definition after the teacher.

- **Dwarf planet** A planetary-mass object that is neither a planet nor a moon
- **Is neither a \_\_\_\_ nor a \_\_\_\_** It's not \_\_\_\_\_ or \_\_\_\_\_
- **Planetary-mass** Something that has the same mass as a planet
- **Object** Something which can be seen and touched; a thing
- **Categorization** To put something into groups for study or record-keeping
- **Orbit** The circle a planet or a spaceship makes around a planet or sun
- **To clear something** To get rid of everything around something
- **Massive** Something which has a lot of mass
- **Currently** Now has
- **To precipitate** To cause something to happen suddenly
- **Neptune** The 8<sup>th</sup> planet of the Solar System
- **Pluto** The former 9<sup>th</sup> planet of the Solar System, now one dwarf planet of many in its area of the Kuiper Belt
- **The Kuiper Belt** An area of the Solar System outside the orbit of Neptune, believed to contain many comets, asteroids and dwarf planets
- **t'be** "To be" (pronounced quickly)
- **An dat da** "And that the" (pronounced quickly)

## Passage

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Read the passage with the teacher, asking questions about content, and then answer the questions on the next page.

A **dwarf planet** is a **planetary-mass object** that **is neither a planet nor a moon**. That means, it is:

- 1) in direct **orbit** of the Sun
- 2) is massive enough for its gravity to crush it into the shape of a sphere
- 3) it has not **cleared** the neighborhood of other material around its **orbit**.

The term **dwarf planet** was adopted in 2006 as part of a three-way **categorization** of bodies **orbiting** the Sun, brought about by an increase in discoveries of **objects** farther away than **Neptune** that were as big as **Pluto**, and finally **precipitated** by the discovery of an even more massive **object**, Eris. The International Astronomical Union (IAU) currently recognizes five **dwarf planets**: Ceres, **Pluto**, Haumea, Makemake, and Eris. Another hundred or so known **objects** in the Solar System are suspected **to be dwarf planets**. Astronomers estimate that there are that up to 200 **dwarf planets** will be identified when the entire region known as the **Kuiper Belt** is explored, **and that the** number may exceed 10,000 when **objects** scattered outside the **Kuiper Belt** are considered.

Courtesy of Wikipedia: [https://en.wikipedia.org/Dwarf\\_planet](https://en.wikipedia.org/Dwarf_planet)

## Checking Understanding

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1. What is a dwarf planet?
2. What are the 3 requirements to be a dwarf planet?
3. When was the term dwarf planet adopted?
4. How many dwarf planets are currently recognized? What are their names?
5. How many dwarf planets do astronomers think there are in the Kuiper Belt?
6. How many dwarf planets do astronomers think there are outside of the Kuiper Belt?
7. How to pronounce “To be” quickly?
8. How to pronounce “And that the” quickly?

## Conversation Questions

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*Take turns asking the questions with your teacher, and if there's any time left over you can free chat*

- Can you name all the planets in English?
- Do you remember when it was announced that Pluto isn't a planet anymore?
- Would you like to go visit some of the dwarf planets?
- What do you think of the fact that Pluto has a big heart on it?
- Do you know anything about New Horizons, the spacecraft that explored Pluto?
- Are you interested about space?
- Do you like to watch Discovery Channel or National Geographic Channel about space?
- If you could go anywhere in the universe where would you go?
- Do you know what's beyond the Kuiper Belt?
- Can you name any famous astronomers?
- Do you know who the Hubble Space Telescope was named after? What was he famous for?
- Did you hear about Ceres before this lesson? Did you know that for 50 years scientists thought it was a planet?