## 42.1 Our Solar System: Pick a Planet



Summarize main points from each video.

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# Topic Introduction



### Summarize your understanding of each paragraph.

The Solar System is the Sun and all the objects that orbit around it.

| The Sun is orbited by planets, asteroids, comets and other things. It is billions of years old.  |
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| The Sun is a star. It contains 99.9 percent of the Solar System's mass. This means that it has strong gravity. The other objects are pulled into orbit around the Sun. The sun is mostly made out of hydrogen and helium. There are eight planets in the Solar System. |
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| From closest to farthest from the Sun, they are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. The first four planets are called terrestrial planets. They are mostly made of rock and metal, and they are mostly solid.                           |
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| The last four planets are called gas giants. This is because they are much larger than other planets and are mostly made of gas.   |
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# Read/Summarize Text



- 1. Read the passage.
- 2. Underline key expressions in each sentence.
- 3. Re-write each word (or expression) you underlined.
- 4. Summarize the passage.

#### Solar System.

The Solar System also contains other things. There are asteroids, mostly between Mars and Jupiter. Further out than Neptune, there is the Kuiper belt and the scattered disc. These areas have dwarf planets, including Pluto. There are thousands of very small objects in these areas. There are also comets, centaurs, and there is interplanetary dust.

Six of the planets and three of the dwarf planets are orbited by moons. Furthermore, planetary dust orbits the gas giants. Many other systems like the Solar System have been found. Each of the billions of stars in the Milky Way galaxy might have a planetary system.

https://simple.wikipedia.org/wiki/Solar System

| Re-write words you unde  | rlined<br>          |                   | 3 |
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|                          |                     |                   |   |
| Using a complete sentend | e, summarize or rep | hrase the passage | 4 |
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## Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

### **Our Solar System**

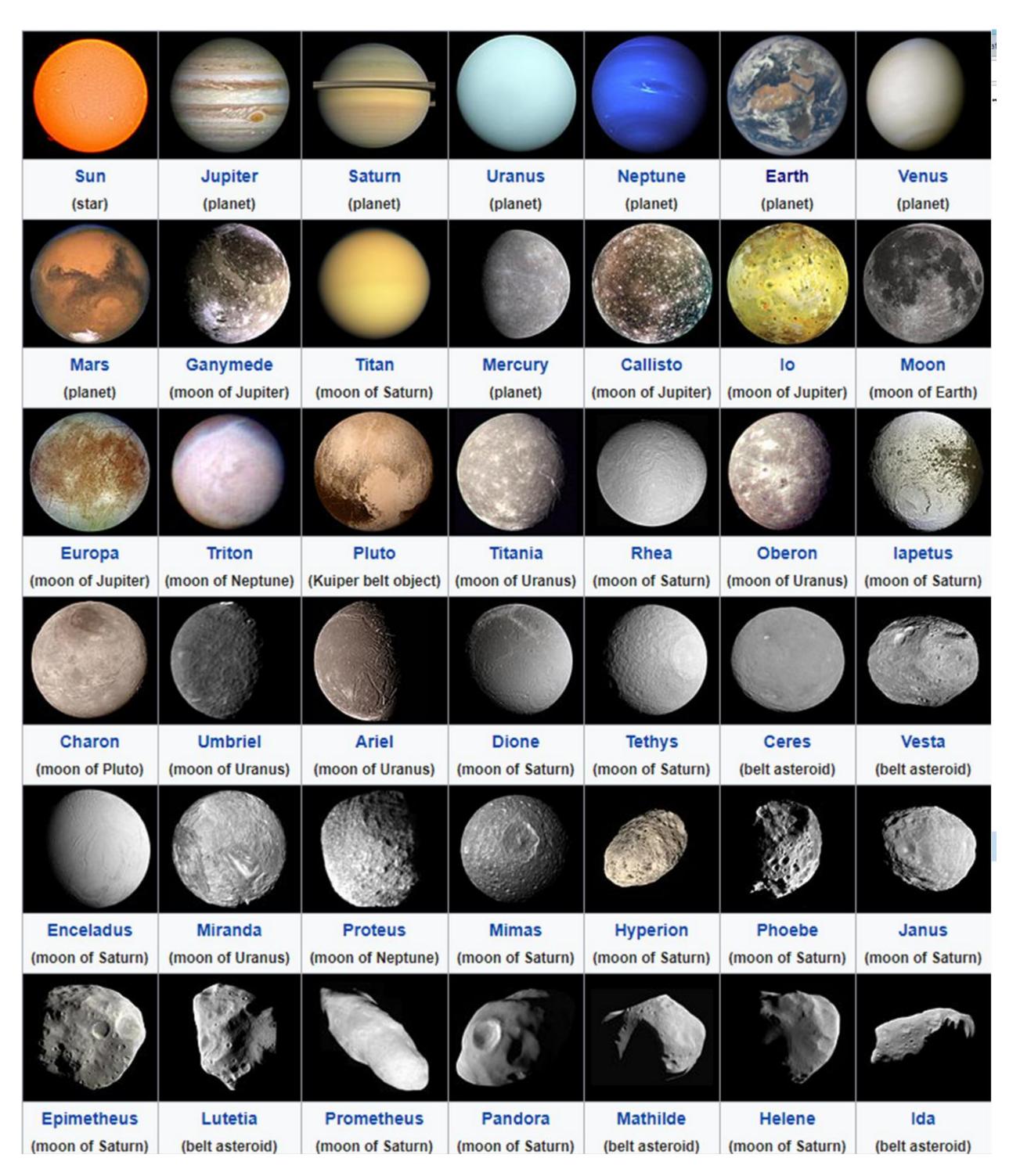
The Solar System is the gravitationally bound system comprising the Sun and the objects that orbit it, either directly or indirectly. Of those objects that orbit the Sun directly, the largest eight are the planets, with the remainder being smaller objects, such as dwarf planets and small Solar System bodies. Of the objects that orbit the Sun indirectly, the moons, two are larger than the smallest planet, Mercury.

The Solar System formed 4.6 billion years ago from the gravitational collapse of a giant interstellar molecular cloud. The vast majority of the system's mass is in the Sun, with the majority of the remaining mass contained in Jupiter. The four smaller inner planets, Mercury, Venus, Earth and Mars, are terrestrial planets, being primarily composed of rock and metal. The four outer planets are giant planets, being substantially more massive than the terrestrials. The two largest, Jupiter and Saturn, are gas giants, being composed mainly of hydrogen and helium; the two outermost planets, Uranus and Neptune, are ice giants, being composed mostly of substances with relatively high melting points compared with hydrogen and helium, called volatiles, such as water, ammonia and methane. All eight planets have almost circular orbits that lie within a nearly flat disc called the ecliptic.

The Solar System also contains smaller objects. The asteroid belt, which lies between the orbits of Mars and Jupiter, mostly contains objects composed, like the terrestrial planets, of rock and metal. Beyond Neptune's orbit lie the Kuiper belt and scattered disc, which are populations of trans-Neptunian objects composed mostly of ices, and beyond them a newly discovered population of sednoids. Within these populations are several dozen to possibly tens of thousands of objects large enough that they have been rounded by their own gravity. Such objects are categorized as dwarf planets. Identified dwarf planets include the asteroid Ceres and the trans-Neptunian objects Pluto and Eris. In addition to these two regions, various other small-body populations, including comets, centaurs and interplanetary dust clouds, freely travel between regions. Six of the planets, at least four of the dwarf planets, and many of the smaller bodies are orbited by natural satellites, usually termed "moons" after the Moon. Each of the outer planets is encircled by planetary rings of dust and other small objects.

### Review this Illustration

This illustration is a sampling of Solar System bodies, selected for size and sorted by volume.



## Create an Illustration

## **Show-Off Your Smarts!**



#### **Instructions**

- Use critical thinking skills to respond to these questions.
- Complete as an individual or small group.
- Q1. How can this information about our Solar System be applied to a young adult's life?
- Q2. How might information about Mars impact decisions made by people around the world?
- Q3. What are 3 jobs that must know about our Solar System? Describe why those jobs need to know the information.

Q4. What would a person from 100 years ago think about this topic?

Q5. How does this topic connect to other science topics or math?

### Make a Poster

In the space provided here, create/draw a poster which conveys the concepts you have learned on this topic. Use a process, hierarchy, relationship diagram, and one additional sketch of any kind.

| Process      | Hierarchy |
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| Relationship | Sketch    |
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