

Lesson Outline

The Outer Planets

A. The Gas Giants

- 1. The outer planets are made of materials that are usually _____ on Earth.
- 2. Gravitational forces produced by the large sizes of these planets change gases into _____.

B. Jupiter

- 1. _____ is the largest planet in the solar system.
 - a. Although it takes 12 years to revolve around the Sun, Jupiter _____ faster than any other planet.
 - b. Jupiter has a system of _____ around it.
- 2. Jupiter's atmosphere contains helium but is mostly made up of _____.
 - a. Jupiter's rotation stretches its clouds into colorful _____.
 - b. The _____ on Jupiter is a storm that has lasted more than 300 years.
- 3. Jupiter's entire structure is made up of about 80 percent hydrogen, about 20 percent _____, and small amounts of other materials.
- 4. Jupiter has a solid core that is surrounded by _____.
- 5. The four largest moons of Jupiter are called _____. These are Io, _____, Ganymede, and Callisto.

C. Saturn

- 1. Like Jupiter, Saturn rotates _____ and has clouds in bands.
- 2. Saturn is mostly made of _____ and helium.
- 3. Saturn has the largest _____ system in the solar system.
 - a. Saturn has _____ bands of rings, each of which contains thousands of smaller rings.
 - b. The rings are made mainly of _____ particles.
- 4. Most of Saturn's moons are small, but one of them, _____, is larger than the planet Mercury.

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Lesson Outline continued

D. Uranus

1. Uranus's atmosphere contains mostly hydrogen and helium, with small amounts of _____
 - a. Beneath Uranus's atmosphere is a slushy layer of water, _____, and other materials.
 - b. Uranus might have a rocky _____.
2. The rotational axis of Uranus is _____ more than that of other planets.
3. Uranus has at least _____ moons and a small ring system.

E. Neptune

1. The atmosphere and interior of Neptune are similar to _____.
2. Neptune has at least _____ moons and a faint ring system.

Key Concept Builder 

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The Outer Planets

Key Concept How are the outer planets similar?

Directions: Complete the compare-and-contrast chart by writing terms from the list in the correct spaces.

- | | |
|----------------------------|--------------------|
| diameter of planet | mass |
| distance from the Sun | number of moons |
| gases change to liquid | size of rings |
| strong gravitational force | small solid core |
| hydrogen and helium gases | temperature |
| lack a solid surface | tilt of rotation |
| period of revolution | period of rotation |
| mainly liquid interiors | type of rings |

<p>How are the outer planets similar?</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p>6. _____</p>
<p>How are the outer planets different?</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p>6. _____</p> <p>7. _____</p> <p>8. _____</p> <p>9. _____</p> <p>10. _____</p>

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Content Practice A

The Outer Planets

Directions: Use your textbook, including Figure 12, to describe each planet in the space provided.

Jupiter	Saturn
1.	2.
Uranus	Neptune
3.	4.

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