

# Critical Thinking Skills

## Space

The Solar System – Galaxies & The Universe – Space Travel & Technology – All three

Skills For Critical Thinking		Reading Comprehension							Hands-on Activities
		Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	
LEVEL 1 Knowledge	<ul style="list-style-type: none"> <li>List Details/Facts</li> <li>Recall Information</li> <li>Match Vocab. to Definitions</li> <li>Define Vocabulary</li> <li>Label Diagrams</li> <li>Recognize Validity (T/F)</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 2 Comprehension	<ul style="list-style-type: none"> <li>Demonstrate Understanding</li> <li>Explain Scientific Causation</li> <li>Rephrasing Vocab. Meaning</li> <li>Describe</li> <li>Classify into Scientific Groups</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 3 Application	<ul style="list-style-type: none"> <li>Application to Own Life</li> <li>Model Scientific Process</li> <li>Organize and Classify Facts</li> <li>Utilize Alternative Research Tools</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 4 Analysis	<ul style="list-style-type: none"> <li>Distinguish Roles/Meanings</li> <li>Make Inferences</li> <li>Draw Conclusions Based on Facts Provided</li> <li>Classify Based on Facts Researched</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 5 Synthesis	<ul style="list-style-type: none"> <li>Compile Research Information</li> <li>Design and Application</li> <li>Create and Construct</li> <li>Imagine Self in Scientific Role</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓
LEVEL 6 Evaluation	<ul style="list-style-type: none"> <li>State and Defend an Opinion</li> <li>Justify Choices for Research &amp; Topics</li> <li>Defend Selections and Reasoning</li> </ul>	✓	✓	✓	✓	✓	✓	✓	✓

Based on Bloom's Taxonomy



# The Outer Planets

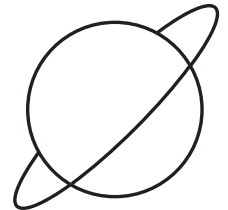
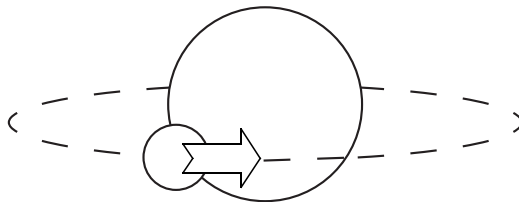
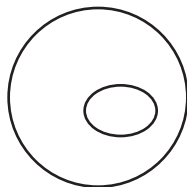
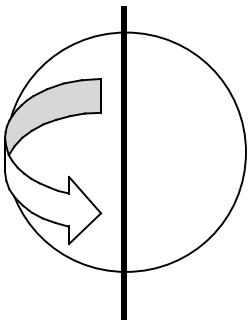
1. Pluto used to be considered an outside planet but had lost its status. What do you know about this? Do you have an opinion on it? Write a response in your notebook that answers these questions. Make some predictions about the reason why Pluto is not a real planet any more.
2. For each of the words listed below, find a synonym from the word bank. Remember that a synonym is a word that has the same meaning.

- a) zone \_\_\_\_\_
- b) belt \_\_\_\_\_
- c) giant \_\_\_\_\_
- d) gas \_\_\_\_\_
- e) dwarf \_\_\_\_\_
- f) orbit \_\_\_\_\_
- g) rotate \_\_\_\_\_
- h) geyser \_\_\_\_\_
- i) spot \_\_\_\_\_

## Word Bank

little	area
band	spin
hoop	encircle
vapor	mark
huge	spring

3. Label the diagrams below with terms from the following list:

**rotate****orbit****ring****spot**

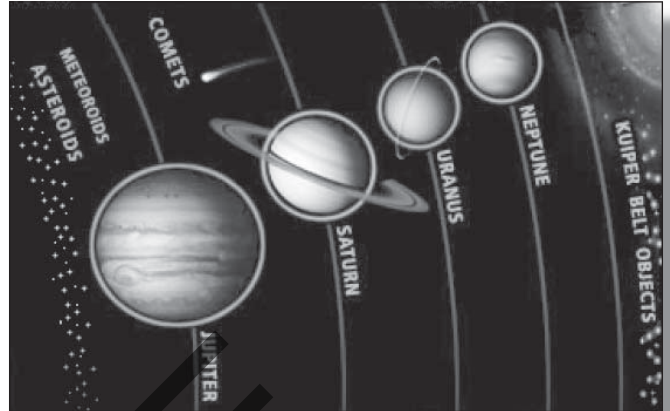
a) \_\_\_\_\_ b) \_\_\_\_\_ c) \_\_\_\_\_ d) \_\_\_\_\_



# The Outer Planets

**U**nlike the inner planets, the outer planets are made of gas. They are lighter, they move fast and most of them are larger than the inner planets. The outer planets are: **Jupiter, Saturn, Uranus, and Neptune.**

If you were traveling from the Sun to the other end of the solar system, you would first pass the four inner planets. Then, you would go through the **asteroid belt** in the large space that divides the inner and outer planets. The first of the outer planets that you would come across is Jupiter.



**Jupiter** is the fifth planet from the Sun and the largest planet in the solar system. It is so big that more than one thousand Earths could fit inside it! You would not be able to land on Jupiter because it is a **gas giant**, which means it is almost entirely made of gas. You may recognize Jupiter because of its large **red spot** and the wide bands around it. Fast-moving clouds surround Jupiter to form the wide bands called **zones** and the narrow bands called **belts**. Scientists think that the red spot in one of the zones is probably a huge gas storm that has lasted for hundreds of years. This storm is three times the size of our planet Earth. Jupiter has rings, active volcanoes, lightning bolts and at least seventeen moons.



**Visualize: Based on what you have just read about Jupiter, draw a sketch of this planet in your notebook. Include as much detail as possible and neat labels. You may need to re-read the paragraph for more detail.**

**Saturn** is the sixth planet from the Sun. It is also a gas giant, but it is best known for its brilliant **rings**. The rings around Saturn are made of chunks of rock, ice and dust. Scientists think that rings form around a planet when objects get too close. The planet's gravity pulls it into **orbit** around the planet. The actual planet also has a striped appearance like Jupiter. The stripes are swirling clouds. Saturn also has at least twenty-two moons! One of the moons, Titan, is the largest moon in the solar system.



# The Outer Planets

1. Put a check mark (✓) next to the answer that is most correct.

a) Which planet has the most known moons orbiting it?

- ☐ A Neptune
- ☐ B Saturn
- ☐ C Jupiter
- ☐ D Earth

b) Which of the outer planets is the largest?

- ☐ A Neptune
- ☐ B Uranus
- ☐ C Jupiter
- ☐ D Saturn

c) What are Saturn's rings made of?

- ☐ A rock and ice
- ☐ B dust
- ☐ C meteorites
- ☐ D 'a' and 'b'

d) Why would Pluto be colder than all of the other planets?

- ☐ A It is so small.
- ☐ B It is made out of ice.
- ☐ C It is not a real planet.
- ☐ D It is farthest from the Sun.

e) Which of the following is a true comparison of Pluto and the other outer planets?

- ☐ A Pluto is not made of gas like the other giants.
- ☐ B Pluto has rings like Uranus.
- ☐ C Pluto around the same size as the other giants.
- ☐ D Pluto is warmer than Jupiter.

f) Why are the Earth and Luna known as "double planets"?

- ☐ A They are both made of rocky material.
- ☐ B They both orbit the Sun.
- ☐ C They are of similar size.
- ☐ D Earth's moon is actually a planet.