

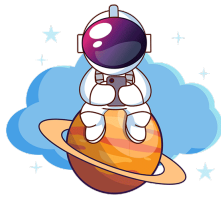
Name: _____

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Solar System: Outer Planets

Exploring Jupiter



Link: <https://science.nasa.gov/jupiter/>

Directions: This worksheet will help us travel past the asteroid belt towards the last 4 planets of our Solar System and end this unit. These planets are commonly referred to as the Jovian planets, or *Gas Giants*. All gas giants are failed stars, as they're composed mostly of the same basic elements as stars but didn't gain enough mass during planet formation! More on this soon... (You will work in pairs. As you work on the questions, make sure you can trust the information; no Wikipedia or non-scientific based websites.)

- 1) Jupiter is composed primarily of two elements found on the periodic table. Which two elements primarily make up this gas giant, and which element is more abundant than the other? State the percentage value.

- 2) Jupiter is the _____ planet in the entire solar system.
 - a) Jupiter has a well-known feature on its outer surface that is wider than Earth (~16,350 km). State the characteristic's name and what exactly causes it.

- 3) How long is Jupiter's revolution around the Sun? What about its rotation? Compare the revolution and orbit time of Jupiter to that of Earth.

- 4) Galileo first confirmed Jupiter as a planet, however he was not able to discover the incredible things that happen on its outer and inner surfaces. The immense amount of pressure in Jupiter causes electrons to become so close together within the liquid hydrogen layer. What effect does this have?
- 5) How would you describe Jupiter's magnetic field? What is its name? (Cite the source.)
- 6) Jupiter has _____ moons.
- a) From the multiple confirmed moons, there are some that certainly stand out. Tell me a few characteristics from one of the moons, and include a screenshot of it using the [Eyes on the Solar System 3-D simulation](#)! (It cannot be the same one as #7. If working with a group, none should have the same moon. For reference: The slides give a few characteristic examples and moons.)
- 7) Jupiter has the biggest moon in the entire Solar System. State the name of this moon and why it is uniquely important. (What does this moon have that our Moon does not.)

8) Robotic spacecraft have become the eyes for astronomers and the ~8 billion humans down here on Earth to discover the wonders of space. ESA (European Space Agency) and NASA respectively have launched or will be launching spacecraft for moon exploration.

- a) Find the space probes that NASA and ESA are primarily in charge of. Choose one of the spacecraft and state its mission purpose. Take a screenshot of its current feed using the [Eyes of the Universe 3-D simulation](#). (Hint: First, find the names of the spacecraft, then use the search bar to load in its 3-D modeled location.)

9) Sketch a cross-sectioned image of Jupiter's layers and compositions.

10) Tell me an interesting fact you find of Jupiter, its moons, or the missions that have been done! (Be sure to cite the reference. You can include an image as a reference too.)