

## **Jupiter**

### **What does it look like?**

Jupiter, the fifth planet from the sun, is the largest planet in the solar system. It is the first of the “gas giants” and has no surface, though it may have a rocky core. Although it is only 1/1000th as massive as the sun, it is more than double as massive as all of the other planets in the solar system combined. Jupiter’s atmosphere is separated into different bands and gives the planet the appearance of having whitish and reddish layers with various spots, swirls and bubbles. Jupiter’s most notable feature, other than its size, is the great red spot, a football shaped area of intense storms. Three Earths could fit inside the great red spot. The spot, which is a high pressure, stable storm with winds that gust over 400 miles per hour, is said to be somewhat similar to a hurricane. Recent studies have shown that the spot has actually shrunk and that the storm may be weakening. Scientists still don’t have an explanation for why the spot looks red. In addition, Jupiter also has a faint set of rings (probably made of dust) that wrap around the planet horizontally.

### **What is its atmosphere like?**

The atmosphere of Jupiter is about 86 percent hydrogen and 14 percent helium. Methane, water vapor and ammonia exist in trace amounts. The interior of Jupiter is denser, with about 71 percent hydrogen, 24 percent helium and five percent other elements. Occasionally, flashes of lightning are detected in the atmosphere of Jupiter. These electrical discharges are said to be at least 1,000 times as powerful as the typical lightning strike on Earth.

### **What is the temperature like?**

The average temperature in the cloud tops of planet Jupiter is -234 F, but if you were to descend from the cloud tops, closer to the interior of the planet (where the atmospheric pressure becomes about ten times what it is on Earth) the temperatures would actually be around 55 degrees F. If you were to descend farther, the temperatures would become incredibly hot.

**1. What is Jupiter's surface like?**

- A. It is cold
- B. It is rocky
- C. Scientists are not sure
- D. There is no surface

**2. Jupiter is...**

- A. the largest planet by far.
- B. about the size of the sun.
- C. a little larger than Saturn.
- D. the last of the "Gas Giants."

**3. Which of the following is NOT true about the Great Red Spot?**

- A. It is full of storms that seem to be strengthening
- B. Three Earths could fit inside it
- C. It is shaped like a football
- D. Winds within the storm may gust to over 400 miles per hour

**4. Why is the Great Red Spot red?**

- A. Because of the swirling storms
- B. Because of the high wind gusts
- C. Because of the gas in Jupiter's atmosphere
- D. Scientists aren't sure

**5. What could be a synonym for the word "descend" in the following sentence?**

If you were to descend farther, the temperatures would become incredibly hot.

- A. Rise
- B. Fall
- C. Travel
- D. Race

**6. Which of the following is the best summary of the temperature and atmosphere sections on Jupiter in this story?**

- A. The atmosphere is mostly made of hydrogen and the temperature is very hot.
- B. The atmosphere is made of hydrogen and the temperature varies greatly from the clouds to the core.
- C. The atmosphere is mostly made of hydrogen and the temperature varies a little bit from the clouds to the core.
- D. The atmosphere is made mostly of hydrogen and helium and the temperature varies greatly from the clouds to the core.

**7. Where on Jupiter might the temperature be similar to a temperature on Earth?**

- A. In its atmosphere
- B. Close to its interior
- C. In its core
- D. On one of its moons