

THE SUN AND SOLAR SYSTEM STUDY GUIDE – USE FOR QUEST PREPARATION

1. What process does the sun use to produce energy?

Nuclear fusion

2. What layer are you looking at when you look at an image of the sun?

Photosphere

3. Define solar wind.

particles from solar storms that extend outward from the corona into the sun's atmosphere—the particles move by the solar wind and the particles strike gas molecules in Earth's upper atmosphere

4. List the three layers of the sun's interior.

Core, radiation zone, convection zone

5. List the three layers of the sun's atmosphere.

Photosphere, chromosphere, corona

6. List the three features located on the sun's surface.

Solar flare, prominence, sunspot

7. Where does nuclear fusion occur on the sun?

In the core

8. Which layer of the sun's atmosphere means "color?"

Chromosphere

9. Which layer of the sun's atmosphere gives off visible light?

Photosphere

10. Which layer of the sun's atmosphere has a reddish glow?

Chromosphere

11. Define prominence.

Huge, reddish loops of gas in sunspot regions that connect that can be seen extending over the edge of the sun

12. Define solar flare.

a gaseous eruption

13. Which layer of the sun that resembles a halo or a crown?

corona

14. The _____ is the layer of the sun's interior where energy is transferred mainly by electromagnetic radiation.

Radiation zone

15. Define sunspot.

dark spots that are generally cooler than the gases around them

16. Define aurora. Where do they occur?

A beautiful array of colors in the atmosphere – normally occurring near the poles
- Auroras can occur near Earth's poles when particles of the solar wind strike gas molecules in Earth's upper atmosphere

17. The sun is mainly composed of which two gases?

Hydrogen and helium

18. What is the name of the satellite that reached the sun in February 2011? Why is it important to NASA scientists and astronomers?

STEREO (A and B) - they are important to scientists because for the first time they can monitor the sun closely – record and document occurrences of solar storms – visibly see both sides of the sun at the same time – constantly sending up to date images back to NASA

19. Which object is located in the center of our solar system?

sun

20. What do all of the inner planets have in common?

They are small and made up of rocky material – have a solid surface

21. List the four inner planets.

Mercury, Venus, Earth, Mars

22. List the four outer planets.

Jupiter, Saturn, Uranus, Neptune

23. What do all of the outer planets have in common?

They are large and gaseous – lack a solid surface

24. What are the primary gases that make up the atmosphere for the gas giants? (list two)

Hydrogen, methane, helium

25. What is the asteroid belt? What is it composed of? Where is it located?

- a. A ring of rocky objects traveling in an ellipse around the sun
- b. Rocky material believed to be left over material when the solar system formed
- c. Located between Mars and Jupiter

26. Where is the Kuiper Belt located?
Between Neptune and Pluto
27. Which planet is known as the rust planet?
Mars
28. How are Neptune and Uranus similar?
Similar in color and gaseous components and the blue color of the planet is due to the absorption of red light by methane in the atmosphere.
29. Which planet suffers tremendously from the greenhouse effect and has volcanic activity?
Venus
30. Compare and contrast Earth and Venus. How are they similar? How are they different?
 - a. Similar in presence of quake faults and volcanoes – revolution is comparable – iron core
 - b. Different composition in atmospheres, color, Venus lacks water,
31. Which planet has the most rings? What is the composition of the rings?
 - a. Saturn has the most rings
 - b. Rings are made up of large chunks of ice and snow
32. What is the “great red spot?” Where is it located?
 - a. The great red spot is a hurricane storm
 - b. It is located on Jupiter
33. Which planet is less dense than water?
Saturn
34. Which planet rotates on its side?
Uranus
35. Which inner planet is the smallest with many craters?
 - a. Mercury
36. What gas primarily makes up the atmosphere on Mars?
Carbon dioxide
37. List the 9 planets in order from the sun outward.
Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto