

Study Guide – The Solar System

Ch. 3 Sections 1, 2, 3, 4

How to study:

1. Go over homework, labs
2. Go over notes, Do Now's
3. Reread sections in the textbook
4. Use online text resources – active art, read-aloud text and terms, reading checkpoints, and “Go Online” resources
5. Read through this study guide, review terms, check for understanding.

Chapter 3 Section 1 – Observing the Solar System

Major Concepts to Understand:

- People used to think that the Earth was the center of the solar system
- Early Greek astronomer Ptolemy thought Earth was in the center, but the planets and stars moved around it with individual small circular orbits of their own
- Copernicus (1543), Tycho Brahe (late 1500's), Johannes Kepler (1601) and Galileo (1610) made observations about other planets that changed that perspective to the heliocentric model, with planets following elliptical orbits.
- Know the NAMES and ORDER of the planets in our solar system

Terms:

Geocentric

Heliocentric

Elliptical (ellipse)

Planet order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune (Pluto)

Chapter 3 Section 2 – The Sun

Major Concepts to Understand:

- The sun has an INTERIOR and an ATMOSPHERE
- The sun's interior consists of the core, radiation zone, and convection zone
- In the CORE, nuclear fusion takes place, squishing hydrogen atoms together so tightly that they *join*, forming helium. This releases energy!
- The RADIATION ZONE is where the energy starts to move outward. It takes 100,000 years for the energy to move through this layer.
- The CONVECTION ZONE is where the heat nears the surface, and a boiling effect takes place. Cooling gasses sink back into the radiation zone, and hot gas rises up out of it. This swirling effect is known as convection.
- The sun's Atmosphere consists of the photosphere, chromosphere and corona.
- The PHOTOSPHERE is considered the sun's surface, because you can see it as light.
- The CHROMOSPHERE surrounds the photosphere, and has a reddish yellow color to it.
- The CORONA is the wispy “crown” of light that sprays out away from the sun. It extends a long way as solar wind, but its hard to see.
- Solar wind, sunspots, prominence and solar flares are all features on the sun.

Terms: Core, Nuclear fusion, radiation zone, convection zone, photosphere, chromosphere, corona, solar wind, sunspots, prominence, solar flare.

Chapter 3 Section 3 – The Inner Planets (Mercury, Venus, Earth, Mars)

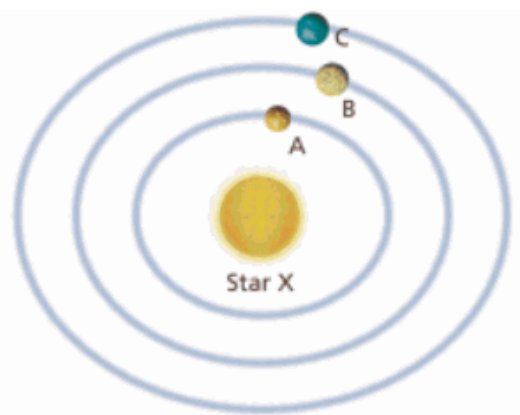
- Figure 10 (pg. 85) shows important information about the inner, rocky planets. You should have this information in your foldable notes. If not, put them in your SNB
- Have the main characteristics of each planet (not including Earth) in your notebook. You will be able to use your SNB during the test.
- Have at least one mission for each planet recorded.

Chapter 3 Section 4 – The Outer Planets (Jupiter, Saturn, Uranus, Neptune, Pluto)

- Figure 17 (pg. 95) shows important information about the outer, gas giants, and Pluto. Make sure the major characteristics are in your SNB.
- Know the name of a mission to each planet.
- Know what the rings are made of.

Answer these on a separate piece of paper:

1. The shape of the orbit of the planets is a(n) _____
2. Large numbers of sunspot occur in a pattern of _____ years
3. The transformation of hydrogen to helium is called _____.
4. The _____ planets are surrounded by rings.
5. Describe the contributions of Tycho Brehe, Kepler, and Galileo.
6. What is solar wind?
7. Why does Mercury have such a thin atmosphere?
8. Why is Venus hotter than Mercury, even though it is farther from the sun?
9. Why can astronomers see the surface of Mars clearly, but not the surface of Venus?
10. What evidence is there that water flowed on the surface of Mars?
11. Why do we know so little about the outer planets?
12. Which planet is located approximately between the sun and Pluto?
13. Why is looking for water so important to us?
14. Compare the size of Earth with Mars
15. Use the diagram below: Which planet has the shortest period of revolution? Which the longest? Why?



STUDY and REVIEW your work, have your SNB with you, and be ready for the test.