

Study Guide**Chapter 19 Earth, Moon and Sun**

Answer the following questions on loose-leaf paper in your binder.

Earth in Space

1. **Name and describe** the two major ways in which Earth moves through space.
2. How long does it take for the Earth to rotate once? Revolve once?
3. What causes day and night?
4. What causes seasons? Be specific
5. When the south end of Earth's axis is tilted toward the sun, what season is it in the Southern Hemisphere? What season are we having in the Northern Hemisphere? Be able to reverse this question as well.
6. The phase of the moon you see depends on how much of the _____ side of the moon faces _____.
7. Why is the equator warmer than the poles?
8. An equinox occurs when neither end of Earth's axis is _____.

Gravity and Motion

9. What does Newton's law of universal gravitation state?
10. On what two things does the strength of the force of gravity between two objects depend?
11. The force of gravity between two objects would increase if mass _____ or the distance between the two objects _____.
12. The force of gravity between two objects would decrease if mass _____ or the distance between the two objects _____.
13. What two factors combine to keep objects in orbit around other objects in space?
14. The tendency of a moving object to continue moving in a straight line or a stationary object to remain in place is called _____.

Phases, Eclipses, and Tides

15. Draw each of the moon phases. **You need to be able to identify the moon phase pictures out of order.** New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, Waning Crescent
16. Draw and label the arrangement of the Earth, sun and moon for a lunar eclipse.
17. Draw and label the arrangement of the Earth, sun and moon for a solar eclipse.
18. The darkest part of the moon's shadow is called the _____.
19. Draw and label the possible positions of the sun, moon (both positions with the names of the phases), and the Earth for a spring tide. **Draw the high and low tides.**
20. A spring tide has the (greatest/least) difference in the high and low tide.
21. Draw and label the possible positions of the sun, moon (both positions with the names of the phases), and the Earth for a neap tide. **Draw the high and low tides.**

Earth's Moon

22. Any object that revolves around another object in space is called a _____.
23. How long does it take the moon to rotate once? Revolve once?
24. Galileo called the dark, flat parts of the moon _____ because they looked like seas.
25. The round pits on the moon are called _____.

Traveling into Space

26. The reaction force that propels a rocket forward is called _____.
27. What **event** began the space race?
28. What two countries were involved in the space race?
29. Who was the first American man launched into space?
30. Who was the **first** person to walk on the moon?
31. What is the **main** difference between space shuttles and the rockets that were used in the past?