

# Study Guide: Sun, Earth and Moon Relationship Assessment

I can...

\_\_\_ 1. Define rotation, revolution, solstice and equinox.

- \*Rotation and Revolution Notes
- \*Rotation and Revolution Review Worksheet

\_\_\_ 2. Describe why we experience days and years due to the rotation and revolution of the Earth around the sun.

- \*Me and My Shadow and Summer Talk Probes
- \*Rotation and Revolution Notes
- \*Rotation and Revolution Review Worksheet
- \*Day, Year and Seasons Quiz

\_\_\_ 3. Recognize that the tilt of the Earth is responsible for the seasons due to direct and indirect sunlight.

- \*Me and My Shadow Probe
- \*Summer Talk Probe
- \*Shadow Lab
- \*Rotation and Revolution Notes
- \*Seasons Lab (Insolation Lab)
- \*Reasons for the Seasons Activity
- \*Earthmallow Lab
- \*Seasons Cut and Paste Activity
- \*Day, Year and Seasons Quiz

\_\_\_ 4. Identify the eight phases of the moon as it revolves around the Earth.

- \*Bill Nye Moon Video
- \*Lunar Phase Lab
- \*Moon Phase Notes
- \*Oreo Cookie Moon Phase Lab
- \*Moon Vocabulary Matching
- \*Moon Phase Flipbook
- \*Moon Phase Quiz
- \*Graphing Moon Phase Worksheet
- \*Lunar Lollipop Lab
- \*Moon Phase, Eclipse & Tides Quiz

\_\_\_ 5. Diagram the positions of the Earth, sun and moon during a solar and lunar eclipse.

- \*Eclipse Gizmo
- \*Lunar Lollipop Lab
- \*Eclipse Worksheet
- \*Eclipse Practice Worksheet
- \*Eclipse Vocabulary Matching
- \*Moon Phase, Eclipse & Tides Quiz

\_\_\_ 6. Describe how neap and spring tides are the result of the moon's gravitational pull on the surface of the Earth.

- \*Tides Gizmo
- \*Tides Worksheet
- \*Tides Practice Worksheet
- \*Moon Phase, Eclipse & Tides Quiz

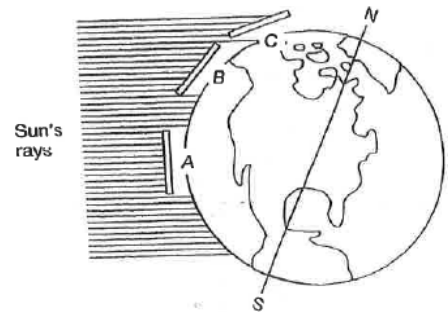
## Study Guide: Sun, Earth and Moon Relationship Assessment

**Indicator — I can describe why we experience days and years due to the rotation and revolution of the Earth around the sun.**

1. What is an axis?
2. What is rotation?
3. What is a day and how long is it?
4. What is revolution?
5. What is a year and how long is it?

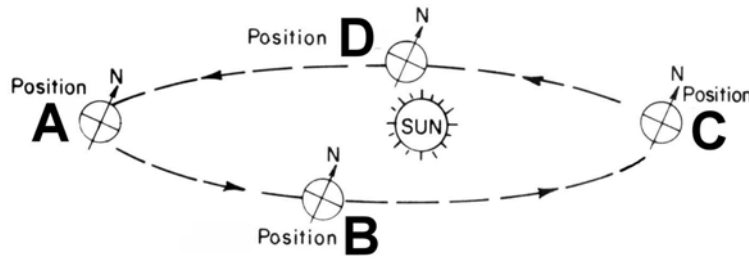
**Indicator — I can recognize that the tilt of the Earth is responsible for the seasons due to direct and indirect sunlight.**

6. What is the tilt of the Earth's axis?
7. How does the angle of the sun's rays make the insolation more intense?
8. Rank the letter for the amount of insolation that hits a square centimeter of the earth's surface. Use the diagram to the right.
9. Where do the direct sun's rays hit during the summer solstice?
10. Where do the direct sun's rays hit during the winter solstice?
11. Where do the direct sun's rays hit during the spring and fall equinox?
12. What season has the shortest day in the Northern Hemisphere?
13. What season has the longest day in the Northern Hemisphere?
14. What seasons have equal days and nights in the Northern Hemisphere?
15. What season and what is the term when Earth is the farthest from the Sun?
16. What season and what is the term when Earth is the closest from the Sun?



Study Guide: Sun, Earth and Moon Relationship Assessment

17. Label and date the diagram below for each of the Earth's positions in the Northern Hemisphere.



18. Using the diagram above, write the letter and date for each of the seasons in the Southern Hemisphere:

Summer solstice

Winter solstice

Fall equinox

Spring equinox

19. Why do we have seasons?

20. If the tilt of the Earth's axis increased, how would that effect seasons?

**Indicator - I can identify the eight phases of the moon as it revolves around the Earth.**

21. Why can we see the moon at night even though it does not produce any light?

22. What is a moon phase?

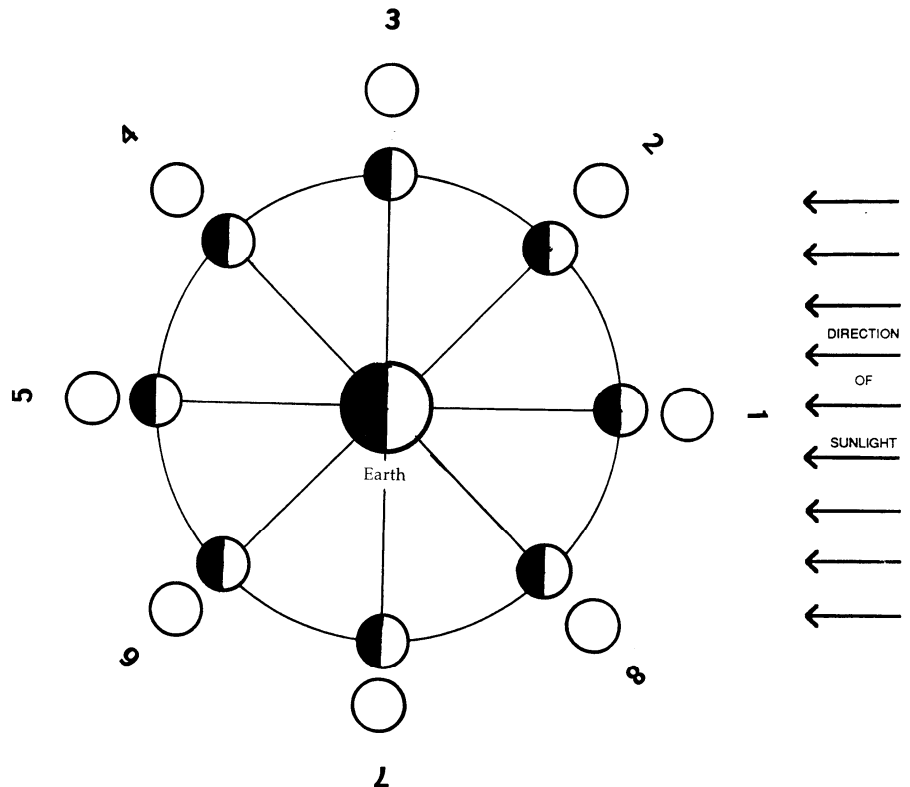
23. What is a month?

24. How many days is a complete moon cycle?

25. What does a waxing moon phase mean?

26. What does a waning moon phase mean?

27. Label the diagram with the correct moon phase name and shade each phase correctly as seen from earth.



## Study Guide: Sun, Earth and Moon Relationship Assessment

**Indicator – I can diagram the positions of the Earth, sun and moon during a solar and lunar eclipse.**

28. What is a shadow?
29. What is an eclipse?
30. What is an umbra?
31. What is a penumbra?
32. What moon phase does a lunar eclipse occur in?
33. What moon phase does a solar eclipse occur in?
34. What occurs when the moon blocks the earth from the sun?
35. What occurs when the earth casts a shadow on the moon?
32. Sketch the correct position of the earth, sun and moon during a lunar eclipse.
  
33. Sketch the correct position of the earth, sun and moon during a solar eclipse.
  
  
34. Why don't we have an eclipse every full or new moon?

**Indicator – I can describe how neap and spring tides are the result of the moon's gravitational pull on the surface of the Earth**

34. How many high and low tides occur in one day?
35. How many hours are between each high tide and low tide?
36. What is a high tide?
37. What is a low tide?
38. What type of tide occurs when the sun and moon's gravity are working together?
39. What type of tide occurs when the sun and moon's gravity are working against each other?
40. What is a spring tide?
41. What moon phase(s) occurs during a spring tide?

# Study Guide: Sun, Earth and Moon Relationship Assessment

42. What is a neap tide?

43. What moon phase(s) occurs during a neap tide?

44. Sketch the correct position of the sun, earth and moon during a neap tide.

45. Sketch the correct position of the sun, earth and moon during a spring tide.

46. **Put it all together.** Fill in the following steps correctly on the diagram below.

A. Label and shade the appropriate moon phases as seen from earth.

B. Lunar and Solar Eclipses

C. Spring and Neap Tides

