

# activity 2 worksheet

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## The Phases of the Moon and the Earth

### Position 1

1. Locate Diagram 1 ("The Moon in orbit as viewed from above") on page S18. Use a pencil to fill in the circle at Position 1, so it shows how the Moon model appears at Position 1, when viewed from above.
2. Locate Diagram 2 ("The Moon as viewed from Earth") on page S18. Use a pencil to fill in the circle at Position 1, so it shows how the Moon model appears at Position 1, when viewed from the perspective of a person on Earth. On the line below the circle at Position 1, write the name of the phase of the Moon in this position.
3. Locate Diagram 3 ("The Earth as viewed from the Moon") on page S18. Use a pencil to fill in the circle at Position 1, so it shows how the Earth model appears at Position 1, when viewed from the perspective of a person on the Moon. On the line below the circle at Position 1, write the name of the phase of the Earth in this position.
4. What is the phase of the Moon in Position 1? \_\_\_\_\_
5. How many days will pass before this phase will be repeated? \_\_\_\_\_
6. The time period in question 5, above, is the length of a \_\_\_\_\_ month.

### Position 2

7. Locate Diagram 1 ("The Moon in orbit as viewed from above") on page S18. Use a pencil to fill in the circle at Position 2, so it shows how the Moon model appears at Position 2, when viewed from above.
8. Locate Diagram 2 ("The Moon as viewed from Earth") on page S18. Use a pencil to fill in the circle at Position 2, so it shows how the Moon model appears at Position 2, when viewed from the perspective of a person on Earth. On the line below the circle at Position 2, write the name of the phase of the Moon in this position.
9. The term used to describe the Moon as the lit portion increases is \_\_\_\_\_.  
The term used to describe the Moon as the lit portion decreases is \_\_\_\_\_.
10. At Position 2 from the Earth's point of view, which side of the Moon is lit — the left or the right?  
\_\_\_\_\_
11. What is the phase of the Moon in Position 2? \_\_\_\_\_

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## Position 3

12. Locate Diagram 1 ("The Moon in orbit as viewed from above") on page S18. Use a pencil to fill in the circle at Position 3, so it shows how the Moon model appears at Position 3, when viewed from above.
13. Locate Diagram 2 ("The Moon as viewed from Earth") on page S18. Use a pencil to fill in the circle at Position 3, so it shows how the Moon model appears at Position 3, when viewed from the perspective of a person on Earth. On the line below the circle at Position 3, write the name of the phase of the Moon in this position.
14. Locate Diagram 3 ("The Earth as viewed from the Moon") on page S18. Use a pencil to fill in the circle at Position 3, so it shows how the Earth model appears at Position 3, when viewed from the perspective of a person on the Moon. On the line below the circle at Position 3, write the name of the phase of the Earth in this position.
15. At Position 3, the Moon has now completed \_\_\_\_\_ percent of its orbit around the Earth.
16. In an actual lunar or synodic month, approximately how long does it take for the Moon to travel from position 1 to position 3? (HINT: How many days make up 25 percent of the lunar cycle?)  
\_\_\_\_\_
17. What is the phase of the Moon in Position 3? \_\_\_\_\_

## Position 4

18. Locate Diagram 1 ("The Moon in orbit as viewed from above") on page S18. Use a pencil to fill in the circle at Position 4, so it shows how the Moon model appears at Position 4, when viewed from above.
19. Locate Diagram 2 ("The Moon as viewed from Earth") on page S18. Use a pencil to fill in the circle at Position 4, so it shows how the Moon model appears at Position 4, when viewed from the perspective of a person on Earth. On the line below the circle at Position 4, write the name of the phase of the Moon in this position.
20. What is the phase of the Moon in Position 4? Be sure to note whether the Moon is waxing or waning.

## Position 5

21. Locate Diagram 1 ("The Moon in orbit as viewed from above") on page S18. Use a pencil to fill in the circle at Position 5, so it shows how the Moon model appears at Position 5, when viewed from above.

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22. Locate Diagram 2 ("The Moon as viewed from Earth") on page S18. Use a pencil to fill in the circle at Position 5, so it shows how the Moon model appears at Position 5, when viewed from the perspective of a person on Earth. On the line below the circle at Position 5, write the name of the phase of the Moon in this position.
23. Locate Diagram 3 ("The Earth as viewed from the Moon") on page S18. Use a pencil to fill in the circle at Position 5, so it shows how the Earth model appears at Position 5, when viewed from the perspective of a person on the Moon. On the line below the circle at Position 5, write the name of the phase of the Earth in this position.
24. The Moon has now completed \_\_\_\_\_ percent of its orbit around the Earth.
25. In an actual lunar or synodic month, approximately how long does it take for the Moon to travel from position 1 to position 5? \_\_\_\_\_
26. What is the phase of the Moon in Position 5? \_\_\_\_\_

## Position 6

27. Locate Diagram 1 ("The Moon in orbit as viewed from above") on page S18. Use a pencil to fill in the circle at Position 6, so it shows how the Moon model appears at Position 6, when viewed from above.
28. Locate Diagram 2 ("The Moon as viewed from Earth") on page S18. Use a pencil to fill in the circle at Position 6, so it shows how the Moon model appears at Position 6, when viewed from the perspective of a person on Earth. On the line below the circle at Position 6, write the name of the phase of the Moon in this position.
29. As the Moon moves from Position 5 to Position 6, does the lit portion appear to increase or decrease? \_\_\_\_\_
30. What is the term used to describe your answer to question 29? \_\_\_\_\_
31. What is the phase of the Moon in Position 6? \_\_\_\_\_

## Position 7

32. Locate Diagram 1 ("The Moon in orbit as viewed from above") on page S18. Use a pencil to fill in the circle at Position 7, so it shows how the Moon model appears at Position 7, when viewed from above.

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33. Locate Diagram 2 ("The Moon as viewed from Earth") on page S18. Use a pencil to fill in the circle at Position 7, so it shows how the Moon model appears at Position 7, when viewed from the perspective of a person on Earth. On the line below the circle at Position 7, write the name of the phase of the Moon in this position.
34. Locate Diagram 3 ("The Earth as viewed from the Moon") on page S18. Use a pencil to fill in the circle at Position 7, so it shows how the Earth model appears at Position 7, when viewed from the perspective of a person on the Moon. On the line below the circle at Position 7, write the name of the phase of the Earth in this position.
35. The Moon has now completed \_\_\_\_\_ percent of its orbit around the Earth.
36. In an actual lunar or synodic month, approximately how long does it take for the Moon to travel from position 1 to position 7? \_\_\_\_\_
37. What is the phase of the Moon in Position 7? \_\_\_\_\_

## Position 8

38. Locate Diagram 1 ("The Moon in orbit as viewed from above") on page S18. Use a pencil to fill in the circle at Position 8, so it shows how the Moon model appears at Position 8, when viewed from above.
39. Locate Diagram 2 ("The Moon as viewed from Earth") on page S18. Use a pencil to fill in the circle at Position 8, so it shows how the Moon model appears at Position 8, when viewed from the perspective of a person on Earth. On the line below the circle at Position 8, write the name of the phase of the Moon in this position.
40. What is the phase of the Moon in Position 8? \_\_\_\_\_

## Position 1 (at completion of orbit)

41. What is the phase of the Moon when it has returned to Position 1? \_\_\_\_\_
42. From new moon to new moon, the Moon has completed one \_\_\_\_\_ month.
43. Explain why the Moon appears to go through a cycle of phases.

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Diagram 1

The Moon in Orbit as Viewed from Above

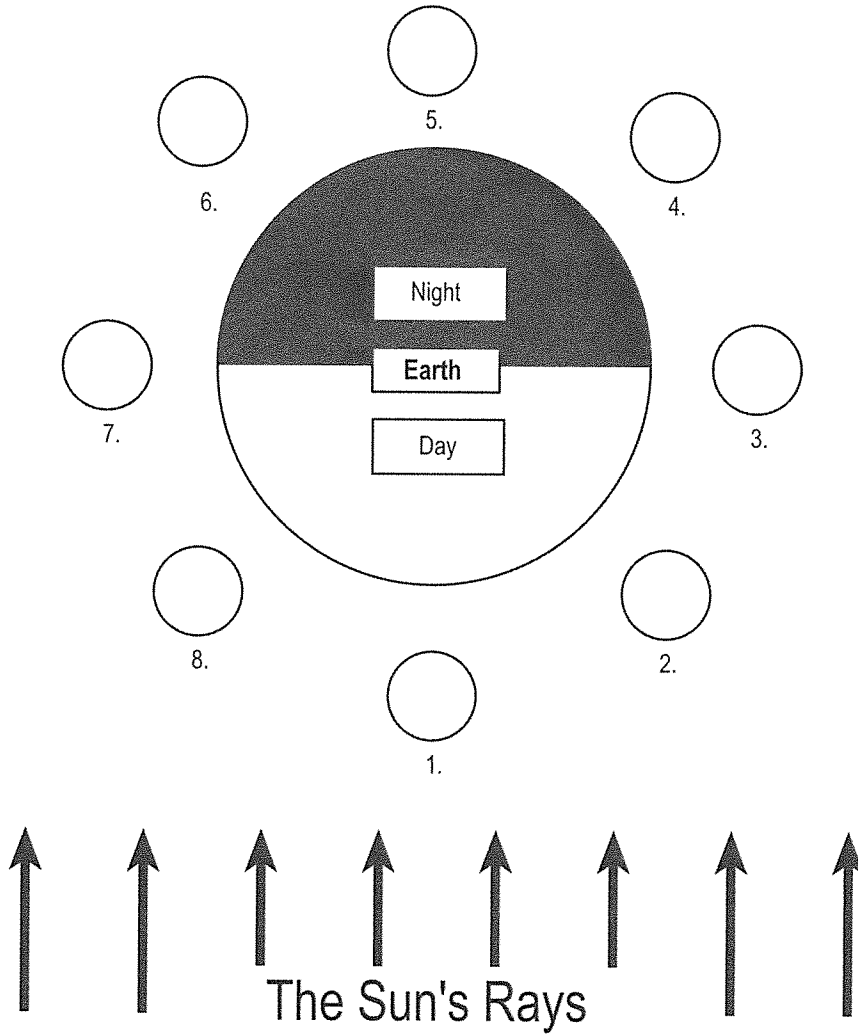


Diagram 2

The Moon Viewed from the Earth

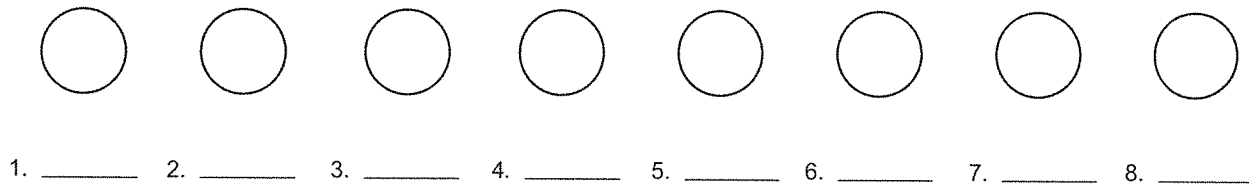


Diagram 3

The Earth Viewed from the Moon

