

## Science week 2 (April 13-18th) Paper/pencil Challenge

### Level 1:

Make some observations of the moon. Look into the sky during the days and times listed below. Draw a picture of what the moon looks like on each of these days. Remember: The moon is not just up at night. Sometimes you will have to look in the morning or during the day.

<b>Drawing</b>						
date	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
Moon up	7:00 am	7:00am	7:00 am	7:00 am	7:00 am	7:00 am
Moon set	10:17am	11:15am	12:17pm	1:22pm	2:27pm	3:31pm

### Level 2:

#### Can the Moon cast shadows?

Of course! A **full moon** is very bright. It is bright enough to cast shadows. If you are out away from city lights and the Moon is full you might cast your own Moon shadow.

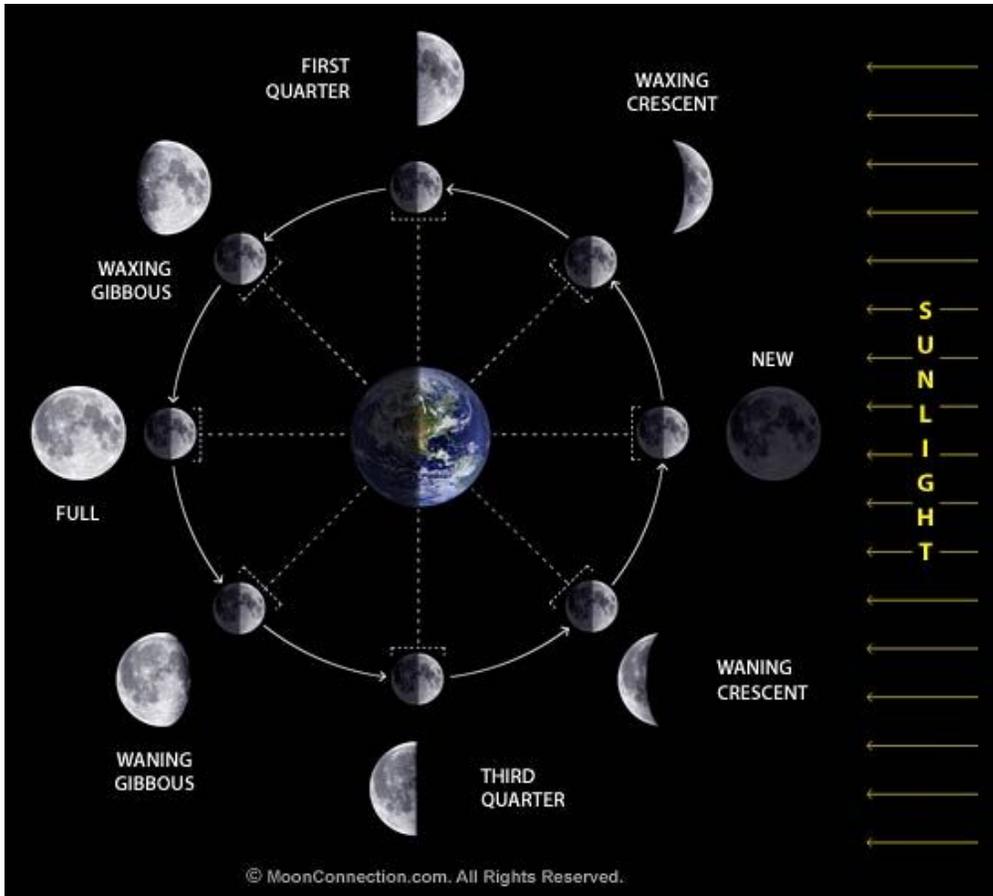
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## The Phases of the Moon

The Moon does not produce any light of its own. It only reflects light from the **Sun**. The Moon has phases because it orbits around Earth. One orbit takes about 28 days. As the moon moves around Earth, different parts of it appear to be lit up by the Sun. The Moon sometimes appears fully lit and

sometimes completely dark. Sometimes it is partially lit. The different appearances of the Moon are referred to as phases of the Moon (**Figure below**).

A **full moon** occurs when the whole side facing Earth is lit. This happens when Earth is between the Moon and the **Sun**.



The moon's phases are a result of the moon's orbit around Earth.[Figure2]

About one week later, the Moon enters the quarter-moon phase. Only half of the Moon's lit surface is visible from Earth, so it appears as a half circle.

Another week later, the Moon moves between Earth and the **Sun**. The side of the Moon facing Earth is completely dark. This is called a **new moon**. Sometimes you can just barely make out the outline of the new moon in the sky. This is because some sunlight reflects off the Earth and hits the Moon.

One week after that, the Moon is in another quarter-moon phase. Finally, in one more week, the Moon is back to full.

Before and after the quarter-moon phases are the **gibbous** and **crescent** phases. During the **crescent** moon phase, the Moon is less than half lit. It is seen as only a sliver or crescent shape. During the **gibbous** moon phase, the Moon is more than half lit. It is not full. The Moon undergoes a complete cycle of phases about every 29.5 days.

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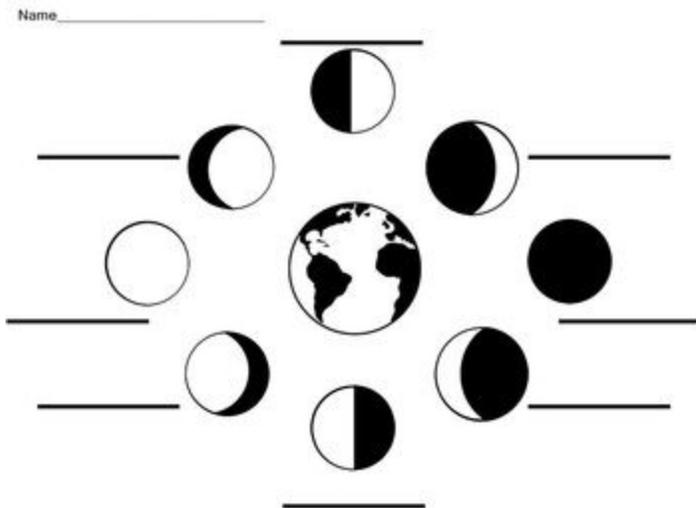
## Summary

- The appearance of the Moon from Earth has distinct phases.
- A full moon is completely lit; a new moon is completely dark.
- A gibbous moon is more than half lit; a crescent moon is less than half lit.

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## Review

1. Describe how the Sun, Moon, and Earth are aligned during a full moon.
2. Describe how the Sun, Moon, and Earth are aligned during a new moon.



Label the phases on the lines.

### Level 3:

For each date tell the name of the phase the moon is in.

Name of the phase						
	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr



What day was the full moon?

\_\_\_\_\_

Predict when you think the next full moon will be.

\_\_\_\_\_ (date)

Predict the next waning crescent moon \_\_\_\_\_ (date)