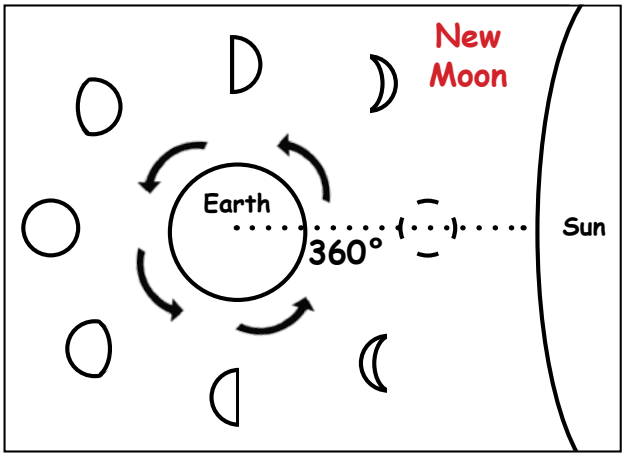
Phases of the Moon - An Illustrated Explanation

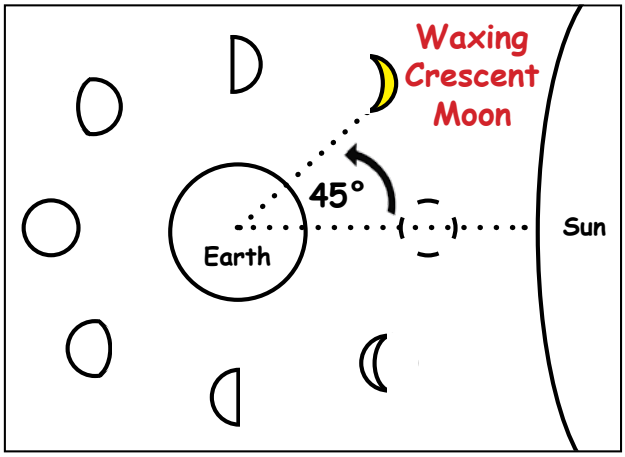
The moon never changes size or shape, but it looks different at different times of the month. Why?

The moon is traveling around the Earth as the Earth travels around the sun. Half the moon is always in sunlight and half is always in darkness. Yet the moon looks different during its month-long trip around the Earth. This is because as the moon travels around the Earth, at each position, we see it from a different angle.

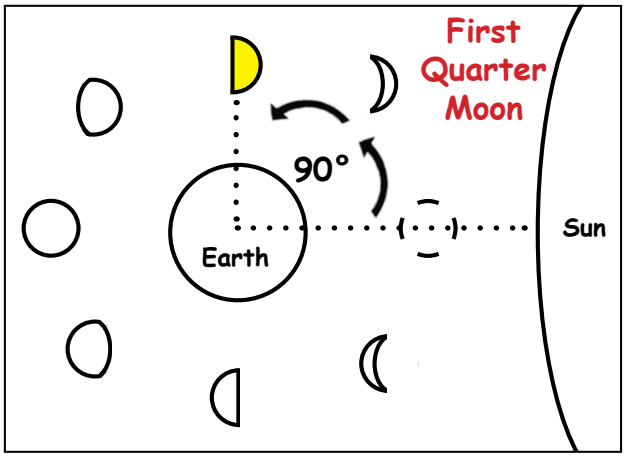
When the moon is between the Earth and the sun, we face the dark side, so we can't see the moon at all. This is called the **new moon**.



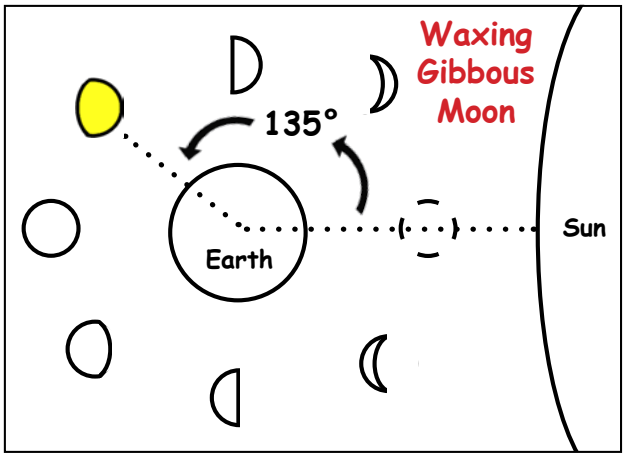
As each day passes, the moon circles the Earth and we begin to see it from a different angle. By day 4, it reaches a 45° angle between the Earth and sun, so we begin to see just a sliver of the lit side of the moon. This is called a **waxing crescen**t.



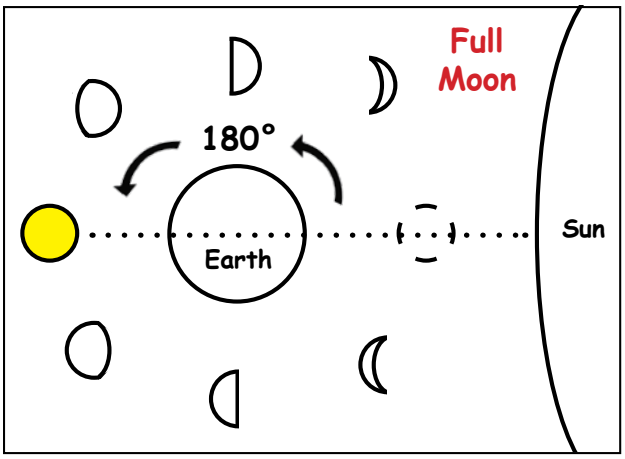
When the moon has circled around the Earth to a 90° angle between the Earth and sun (on about day 7), we can see half the moon, while the other half is still in shadow.- so it has reached its **first quarter**.



The moon reaches the next phase at about day 10. It is at 135° between the Earth and sun and we can see about three quarters of the moon. This is called the **waxing gibbous phase**.



After roughly 2 weeks, the moon is in line with the Earth which sits between it and the Sun at 180.° This is when we can see the fully lit side of the moon, so see it as a **full moon**. It is not an exact alignment though, or the Earth would block the sun from the moon, causing a lunar eclipse.

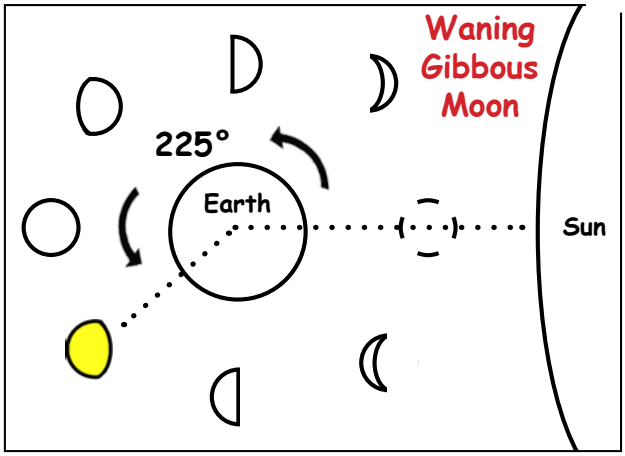


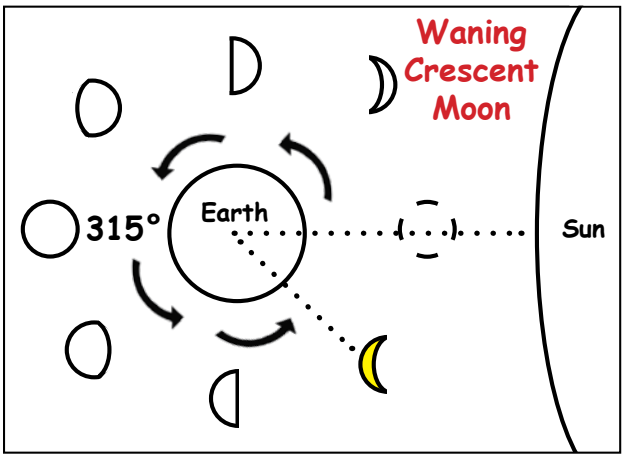
As it continues on in its circle around the Earth, the moon begins to move into shadow. It becomes the **waning gibbous** moon by day 18 (225°).

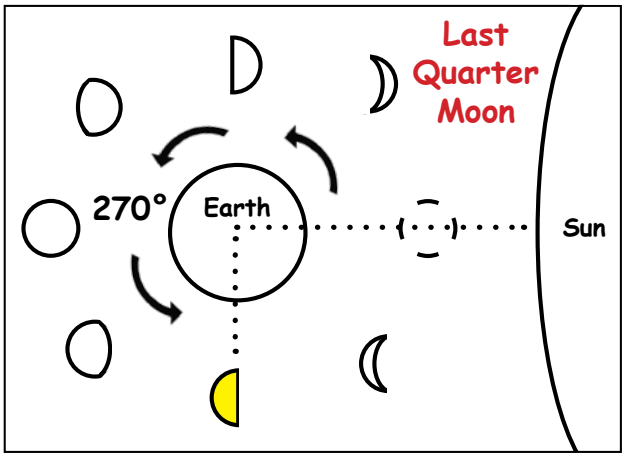
Then the **third quarter** half moon shows at day 22 (270°).

Then the **waning crescent** at day 26 (315°).

The **new moon** is dark again on day 29 (360°).







Phases of the Moon - Fill in the Missing Vocabulary

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The moon is traveling around the Earth as the Earth travels around the sun. Half the moon is always in sunlight and half is always in darkness. Yet the moon looks different during its month-long trip around the Earth. This is because as the moon travels around the Earth, at each position, we see it from a different angle.

When the moon is between the Earth and the sun, we face the dark side, so can't see the moon at all. This is called the _____ **moon**. As each day passes, and the moon moves at an angle out from between the Earth and the sun, we begin the see a sliver of the moon's sunlit side. By day 4, it reaches 45°. This is called a **waxing** _____. When the moon has revolved to a 90° angle from the Earth and sun, on about day 7, it has reached its **first** _____ . We can now see half the moon, while the other half is still in shadow. The moon reaches the next phase at about day 10. It is at 135° and we can see about three quarters of the moon. This is called the **waxing** _____ **phase**. After roughly 2 weeks, the moon is in line with the Earth sitting between it and the Sun at 180°, so we see its fully lit side as a _____ **moon**. It is not an exact alignment though, or the Earth would block the sun from the moon, causing a lunar _____ _____. As it continues on in its circle around the Earth, the moon begins to move into shadow. It becomes the _____ **gibbous** moon by day 18 (225°). Then the **third quarter** half moon shows at day 22 (270°). Then the **waning crescent** shows at day 26 (315°). The **new moon** is dark again on day 29 (360°).

eclipse
crescent
full
gibbous
new
quarter
waning