

DAY 14

The phases of the Moon

Build and study your own moon using decals and a Styrofoam ball.

You will need

- Moon decals, Styrofoam ball, skewer
- Flashlight

Here's how

1. Carefully remove the first segment of the moon decal and stick it to the Styrofoam ball. Align the white equator line carefully with the white line on the ball. Then press the tips down toward the poles. Repeat this for each segment, until the whole ball is covered.
2. Stick the skewer into the ball where the points of the decals come together.
3. Darken your room and turn on the flashlight (focus the beam of light as much as possible). Stand with your back to the light source, and hold the moon so that it's illuminated — about 50 cm from the light source. Observe how the light falls on your little moon.
4. Now slowly turn yourself around in a counter-clockwise direction. Make sure your moon always stays in the beam of light.



Do you need help with applying the decals? Follow this QR-code.



TIP

THIS EXPERIMENT IS EASIER WITH TWO PEOPLE. ONE PERSON HOLDS THE FLASHLIGHT WHILE THE OTHER PERSON ROTATES THEMSELVES WHILE HOLDING THE MOON. THEN YOU CAN SWITCH ROLES.



CHECK IT OUT!

In your experiments, you can also simulate a lunar eclipse and a solar eclipse. As before, you will stand in as the Earth between the flashlight and the moon. If you block the spotlight from hitting the moon, you create a lunar eclipse — the Earth (your body) stands between the sun (flashlight) and the moon and casts a shadow. Solar eclipses are a little more complicated. Close one eye and hold the moon directly between the open eye and the flashlight. Now the moon darkens the sun, just like during a real solar eclipse.

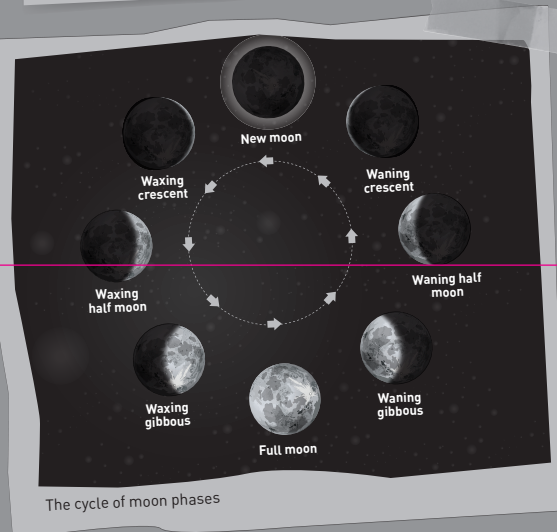
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WHAT'S HAPPENING?

In this experiment you take on the role of the Earth to your moon. The flashlight stands in for the Sun. As you spin around, you simulate the phases of the moon. When your back is to the flashlight, the illuminated side of the moon is facing you — it's a full moon. If your moon is between you and the light source, you only see the side that isn't illuminated — a new moon. In between, you see first the waning and then the waxing phases of the moon.

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The cycle of moon phases