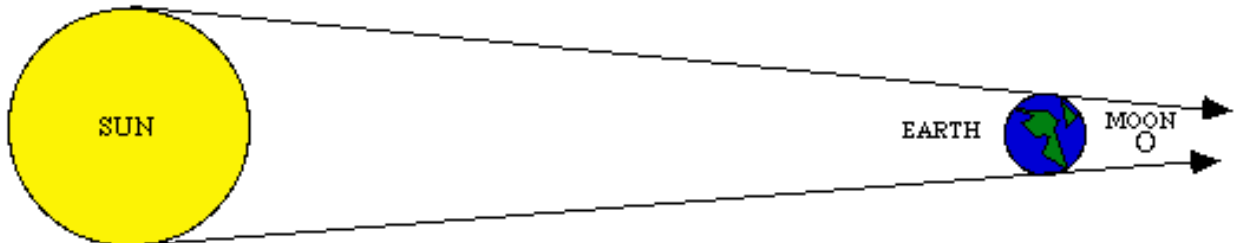


1. How Big and How Far

Important Concepts

- The Sun is much larger than the Moon and much farther away from Earth than the Moon is.
- The Moon is much closer to the Earth.

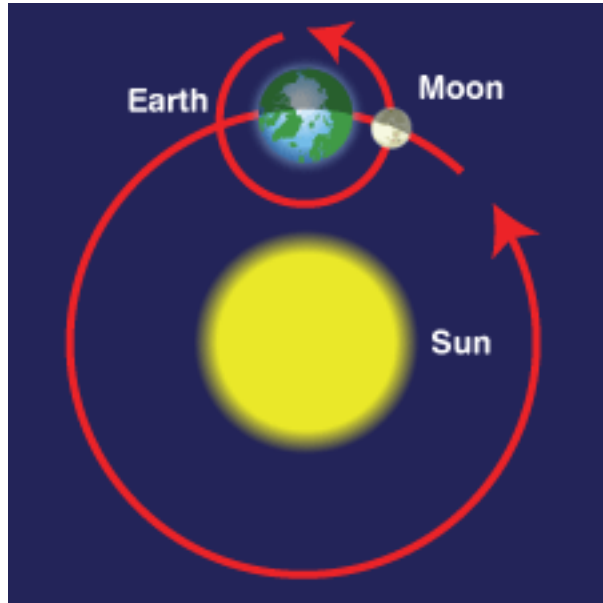


- The different distances to the Sun and Moon cause them to appear to be similar in size when viewed on Earth. The sun and moon appear the same size in Earth's sky because the sun's diameter is about 400 times greater – but the sun is also about 400 times farther away.
- The Sun appears to be much larger than the other stars because it is much closer to the Earth.
- The Moon is less than half the size of the Earth.



2. How Does the Earth Move?

- The Earth revolves around the Sun in an orbit with the Sun in the center.



- The Earth rotates once every 24 hours. This spinning or rotating of the Earth causes day and night on Earth. Sunlight shining on the Earth causes day and the side of Earth that is not lit by the sun has night.

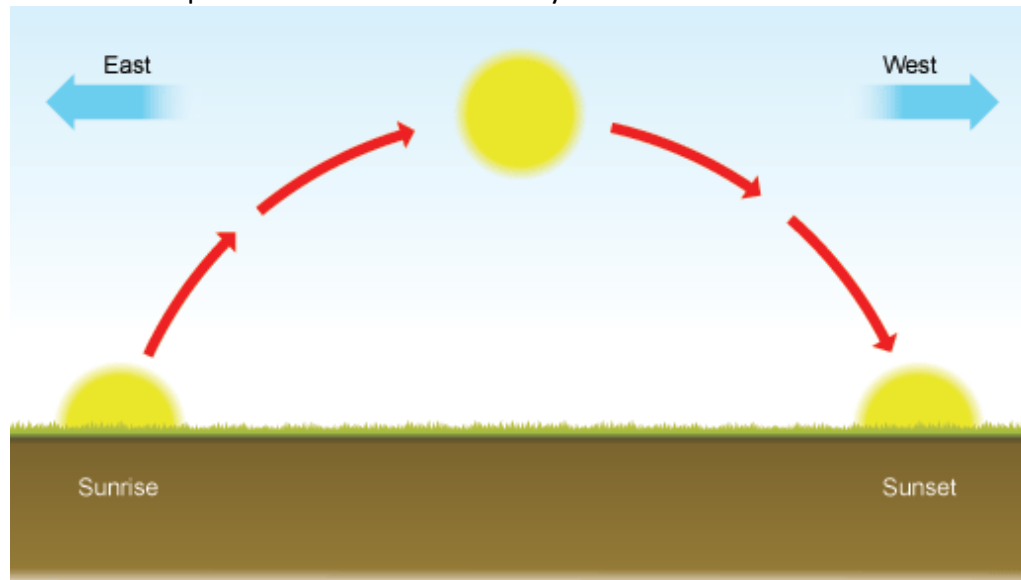
A diagram of the Earth showing its rotation on its axis. The Earth is a blue and orange sphere. A red line represents the axis, with 'North Pole' at the top and 'South Pole' at the bottom. Green curved arrows indicate the direction of rotation. The word 'Rotation' is written in large, colorful letters to the right of the Earth. Below it, text explains that Earth rotates once every 24 hours, causing day and night.

Rotation

Earth rotates on its axis once every 24 hours. We call this one day.

When your part of the earth faces the sun, you experience day. What happens to cause night?

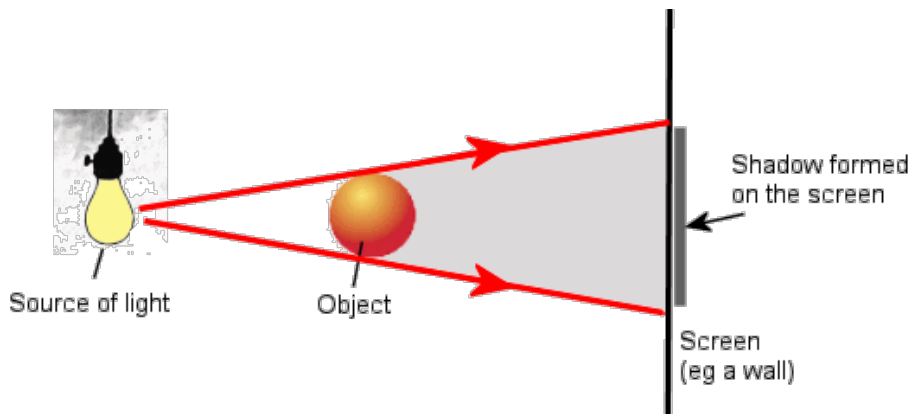
- The Earth spinning is also responsible for the Sun appearing to set every day and the apparent movement of the Sun across the sky. The Earth's spinning is the cause for the position of the Sun in the sky and at noon the Sun is overhead.



- Sunlight shining on the Earth causes day and the side of Earth that is not lit by the sun has night.

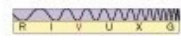
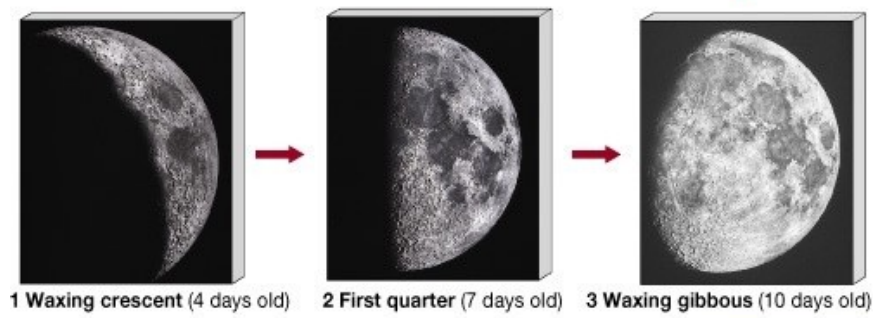
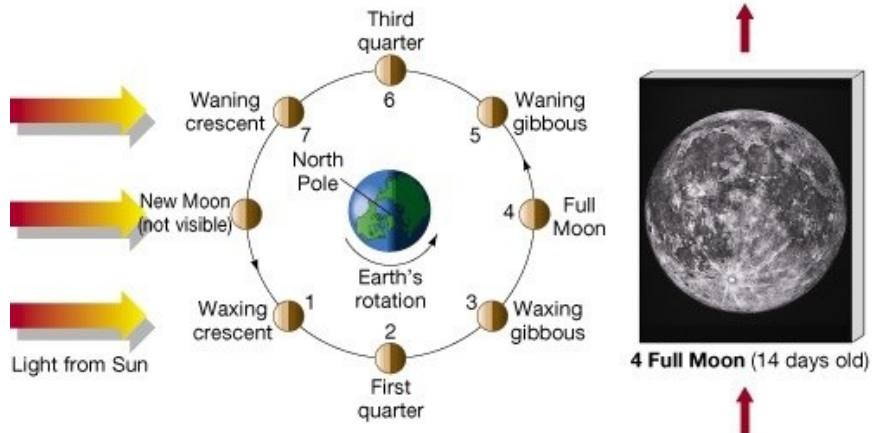
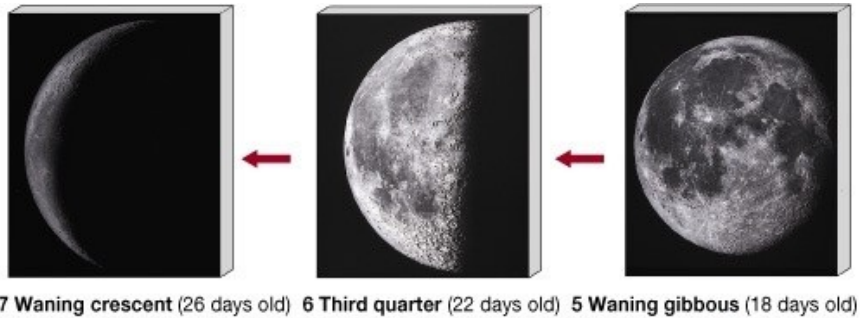
3. Moon Phases and Eclipses

- Shadows are created when light is blocked.
- Shadows are found in three areas:
 - i. On the back of the object blocking the light.
 - ii. Wherever the shadow lands
 - iii. Between the two objects.

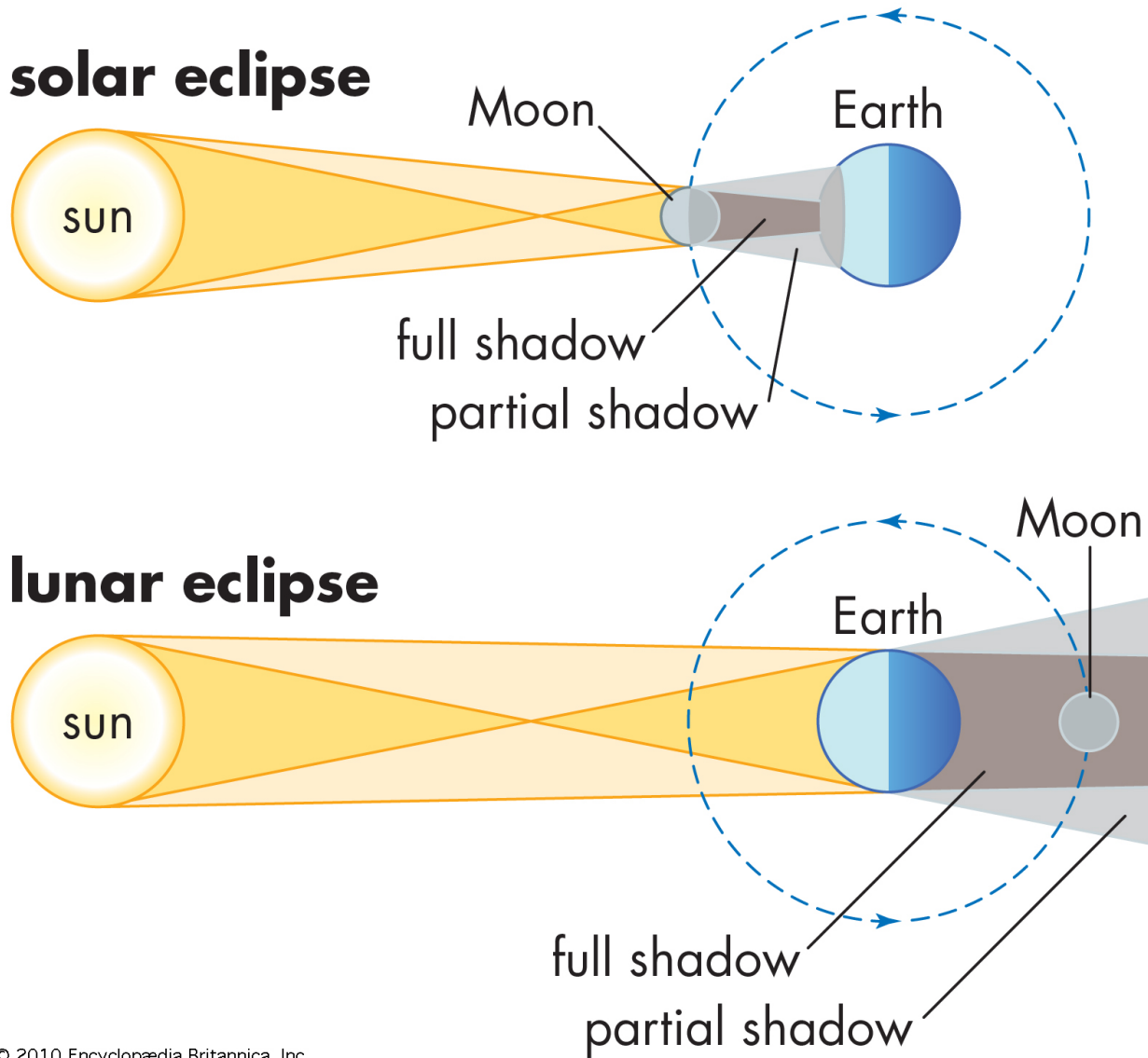


- The Sun is responsible for lighting the Moon.
- The Moon seems to change shape because we see the sunlit part of the Moon from different directions.
- The dark areas of the Moon are created by the Moon's shadow.

- The Moon's phases occur in a regular pattern that repeats about every 28 days.
- The Moon phases occur in the following pattern:
 - i. New moon
 - ii. Waxing crescent
 - iii. First quarter
 - iv. Waxing Gibbous
 - v. Full Moon
 - vi. Waning Gibbous
 - vii. Third Quarter/Last Quarter
 - viii. Waning crescent



- An eclipse of the Sun occurs when the Moon goes between the Sun and Earth.
- An eclipse of the Moon occurs when the Earth is between the Sun and the Moon and Earth casts its shadow on the Moon.



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4. Effects of the Season

- There are 4 seasons: Spring, Summer, Fall and Winter
- Each season has distinct characteristics that can be organized into three areas:
 - i. Biological (plant changes, animal changes)
 - ii. Meteorological (changes in weather)
 - iii. Sociological (holidays or celebrations at different times of the year, things we do at different times of the year)