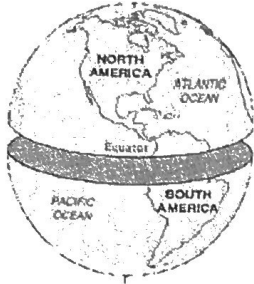


	Definition	Drawing	Earth in Space
Rotation	Spinning around an axis.		creates the pattern of day and night.
Revolution	moving around another object		Creates the pattern of a year.
Orbit	The path the object takes.		

Reason for the Seasons: Daylight Hours



The Earth is divided into two hemispheres by the **equator**:

- The Northern Hemisphere
- The Southern Hemisphere

Earth's Tilted Axis

If the Earth's axis were straight up and down, temperatures on Earth would be constant year-round (they wouldn't change). There would be no seasons. The equator would always be hot and the poles would always be cold. **Earth has a pattern of seasons because its axis is tilted as it revolves around the Sun.**

Look at the picture on the next page, notice that Earth's **axis** is tilted at an angle of 23.5° . As Earth revolves around the Sun its axis is pointed towards the Sun for part of the year and away from the Sun for part of the year.

Whichever hemisphere is pointed towards the Sun experiences summer because it receives more sunlight. When the northern axis points towards the Sun, the Northern Hemisphere experiences summer. When the southern axis points towards the Sun, the Southern Hemisphere has summer. The opposite end experiences winter. **Summer and winter are not affected by Earth's distance to the Sun.**

Guiding question: Why are there seasons?

▶ Earth's tilt creates seasons ✓

▶ Tilted towards the sun = summer because gets more sunlight.

Activity

4

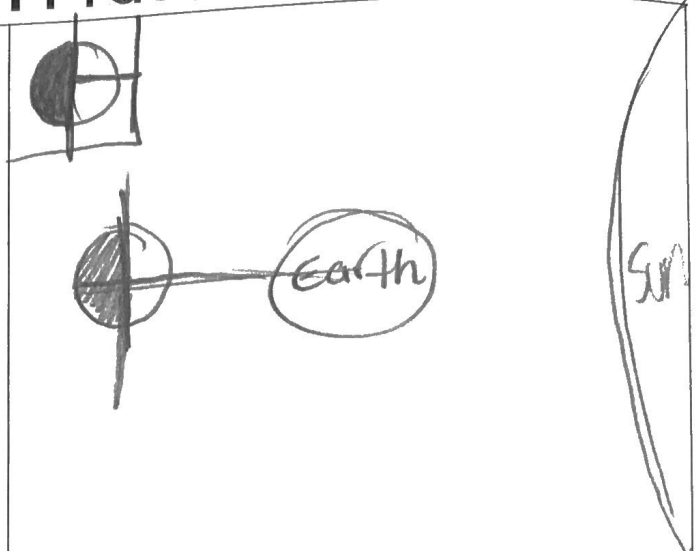
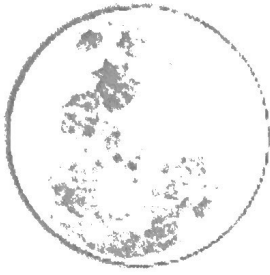
Phases of the Moon

TIPS
STEPS.

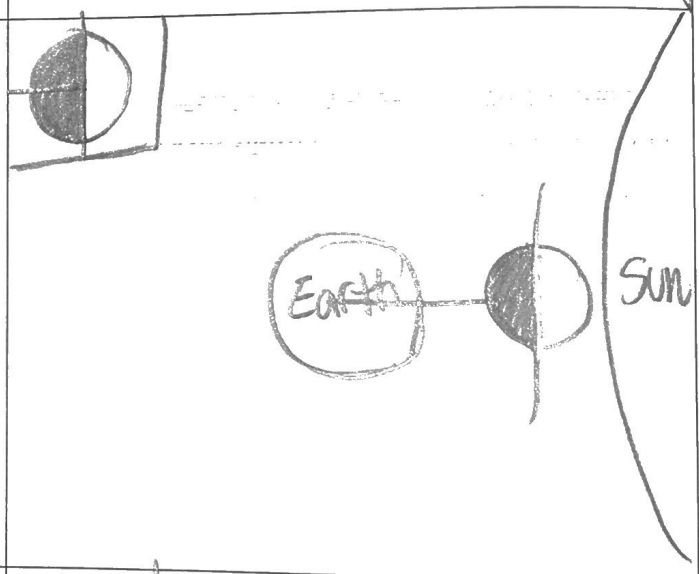
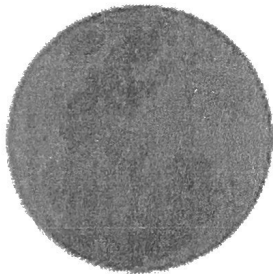
1. Draw Earth and Sun
2. Draw a "sample" moon.
3. Draw it on sample
4. Copy T on diagram

MS-ESS1-1 Practice

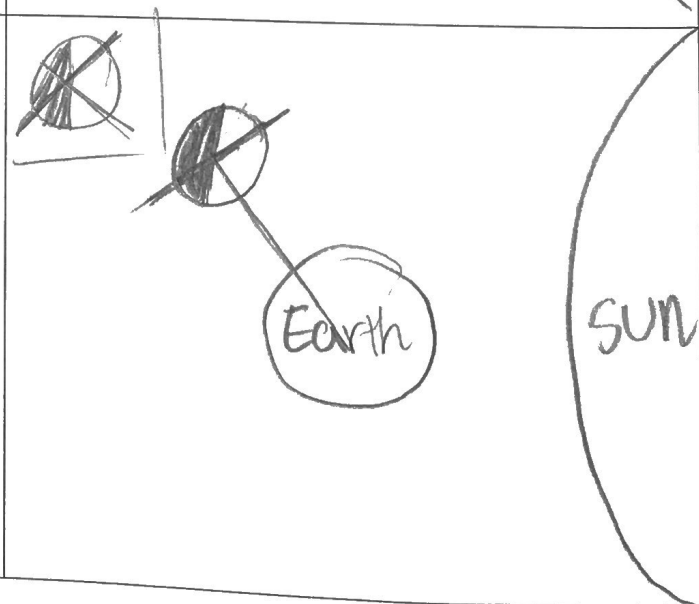
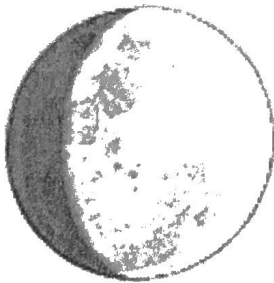
Use the phase of the Moon below to draw the position of the Earth, Moon and Sun in the box to the right.



Use the phase of the Moon below to draw the position of the Earth, Moon and Sun in the box to the right.



Use the phase of the Moon below to draw the position of the Earth, Moon and Sun in the box to the right.



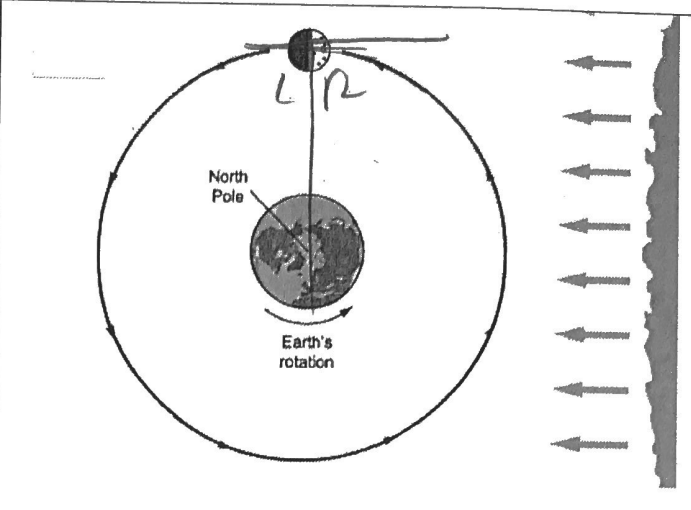
MS-ESS1-1 Practice

Draw the phase of the Moon that Earth would see in the diagram to the right?

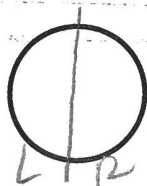


What phase is this?

First Quarter

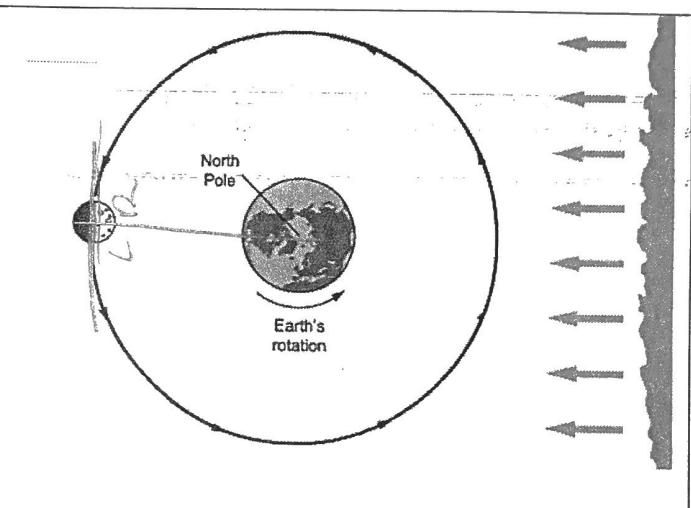


Draw the phase of the Moon that Earth would see in the diagram to the right?



What phase is this?

Full moon

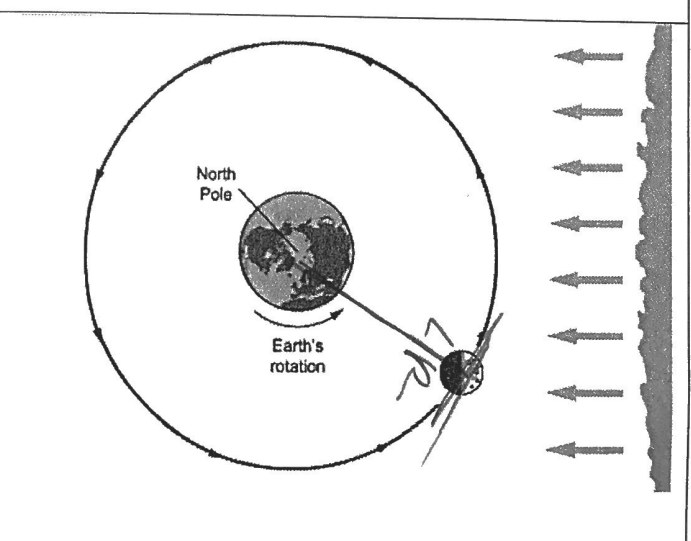


Draw the phase of the Moon that Earth would see in the diagram to the right?



What phase is this?

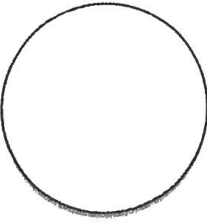
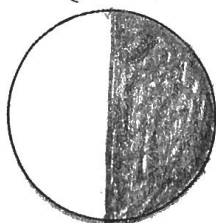
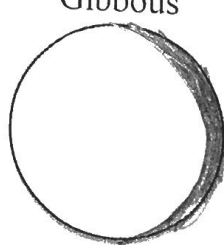
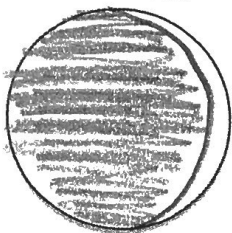
Waning crescent

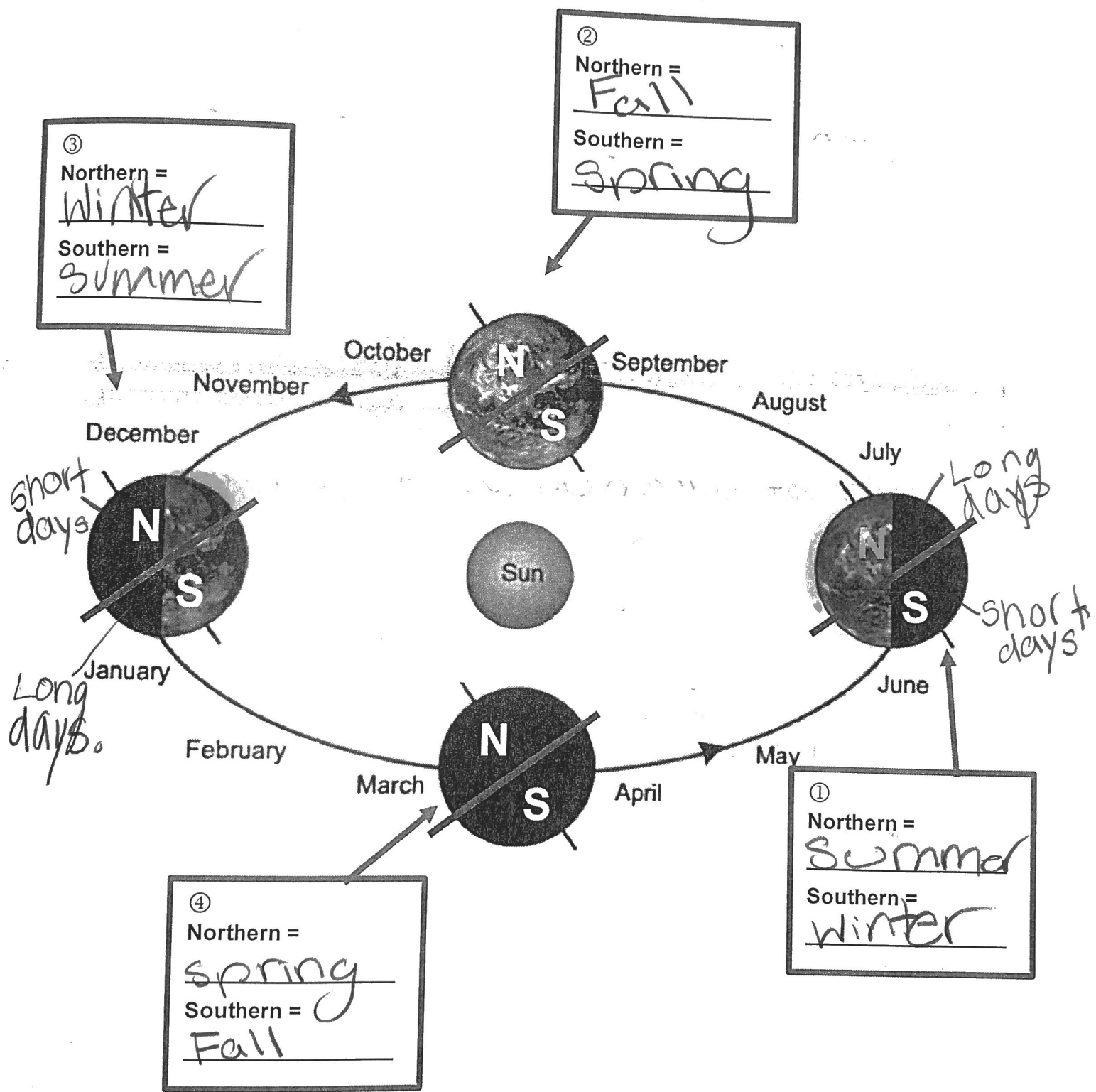


How to find a phase

1. Draw a line from the earth to the moon.
2. create a line using the 'LIR' label
3. Label under the 'LIR'
4. Shade in the moon.

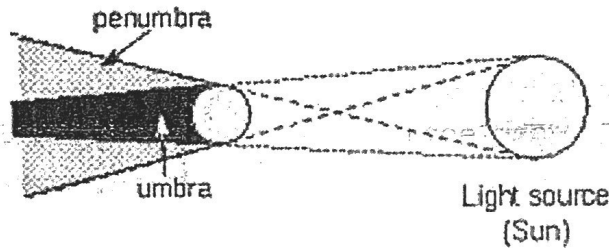
The Moon

Topic	Notes
<p>Motions of the Moon</p>	<ul style="list-style-type: none"> • Rotates every 27.3 days around its axis • Revolves every 27.3 around Earth <p>1 day = 1 year Same side of moon always See same side</p>
<p>half of Moonlight</p>	<p>moon always lit up moon = NO light moon reflects sunlight</p>
<p>Shapes of the Moon</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Full</p>  </div> <div style="text-align: center;"> <p>Quarter</p>  <p>1/4 or 3/4</p> </div> <div style="text-align: center;"> <p>Gibbous</p>  </div> <div style="text-align: center;"> <p>Crescent</p>  </div> </div> <p style="text-align: right; margin-right: 50px;">+ name the side of the moon</p>
<p>Waxing and Waning</p>	<p>Always name the shape of the lit up side!</p> <p>Waxing - the lit upside getting larger</p> <p>Waning - the dark side getting bigger</p> <p style="margin-left: 100px;">through a revolution</p>



Eclipses

Eclipses



Solar Eclipse

A solar eclipse is when the moon casts a shadow on the earth.

Can only see the eclipse if in shadow.

Lunar Eclipse

A lunar eclipse is when earth casts a shadow on the moon.

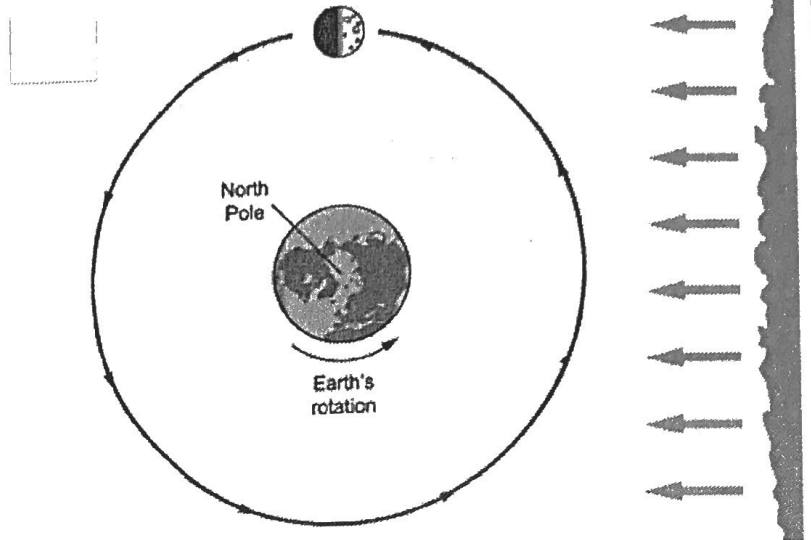
Can be seen everywhere on nighttime side of earth.

MS-ESS1-1 Practice

Would you expect to see an eclipse?

- If yes, what type? Who could see it?
- If no, explain why not.

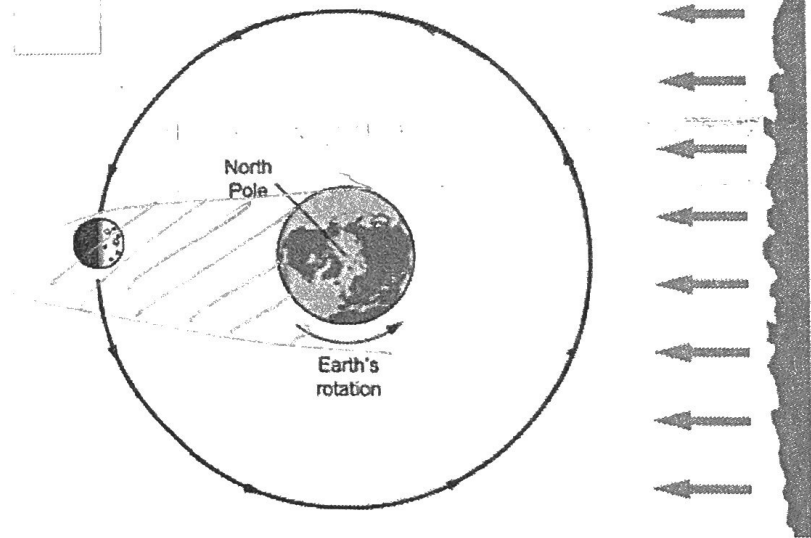
No, because neither the moon's nor the Earth's shadow are on the other object.



Would you expect to see an eclipse?

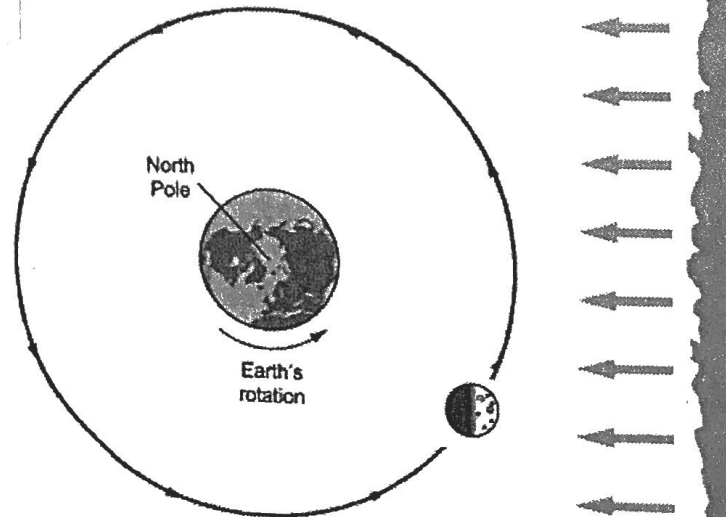
- If yes, what type? Who could see it?
- If no, explain why not.

Yes, because the Earth's shadow is on the moon. This creates a lunar eclipse.



Would you expect to see an eclipse?

- If yes, what type? Who could see it?
- If no, explain why not.



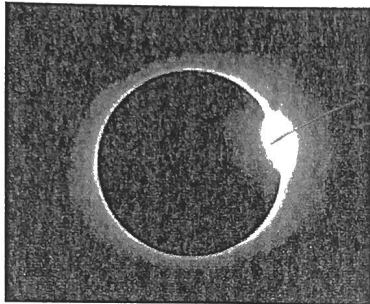
① Draw the Sun and Earth

② Determine type of eclipse

③ Draw moon

MS-ESS1-1 Practice

Use the picture of an eclipse below to draw the position of the Earth, Moon and Sun in the box to the right.

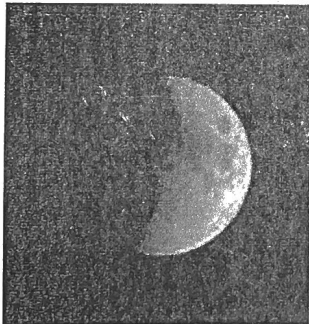


Sun

Solar



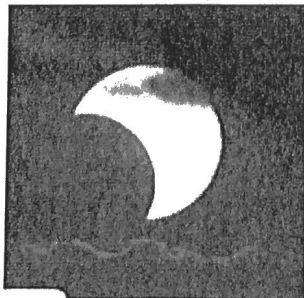
Use the picture of an eclipse below to draw the position of the Earth, Moon and Sun in the box to the right.



Lunar



Use the picture of an eclipse below to draw the position of the Earth, Moon and Sun in the box to the right.



Solar

