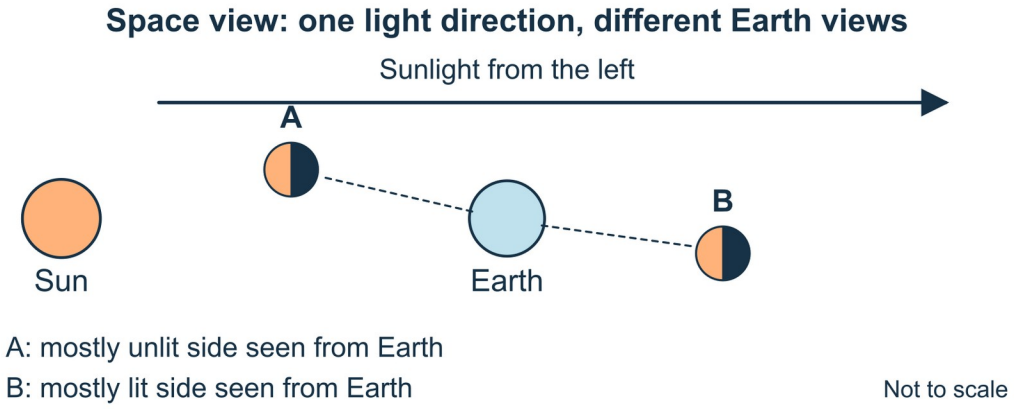
Read a Moon phase model

What can a labelled paper model explain about the Moon's changing appearance?

Read a space-view model to explain how our view of reflected sunlight changes as the Moon moves.

Explore | 10-20 minutes, or one explanation | The supplied example, read or heard, Optional scrap paper and a pen or pencil

Start here In the supplied model sunlight comes from the left. Mark the Sun-facing half of each Moon as illuminated, wherever the Moon is placed.



One light direction, two Earth views

1 Separate light from viewpoint

The Moon reflects sunlight. In this simple model its Sun-facing half is lit. That is different from how much of the lit half an observer on Earth can see.

2 Compare two positions

At A the Moon is on the Sunward side of Earth, so Earth sees mostly its unlit side. At B it is on the far side, so Earth sees mostly its lit side. Trace a line of sight from Earth.

3 Name what ordinary phases mean

Explain the change using viewpoint and reflected light. Ordinary phases are not caused by Earth's shadow; that is a different eclipse situation.

4 Add an honest label

Label the drawing 'space view, not to scale'. Its staggered positions are schematic; it does not show a real eclipse alignment, a date or how a phase is rotated in the Australian sky.

Constructed space view one light direction

The sketch places two possible Moon positions around one Earth. They are comparisons, not two Moons present at once.

• Sunlight travels from left to right; the left half of both Moon symbols is lit.

• A is on the Sunward side: the Earth-facing view contains mostly unlit surface.

• B is on the far side: the Earth-facing view contains mostly lit surface.

What this example can show The sketch omits orbital tilt, scale, dates and sky orientation. It explains a relationship, not tonight's phase or an eclipse prediction.

A different way

Point to the illuminated halves or have the model described aloud. No torch, dark room, ball or sky observation is required.

If you want to go further

Add a position roughly to one side of Earth's Sunward direction and explain why the view could show about half of the Moon's face lit. Keep sky orientation unspecified.

Something to notice

Did I keep the illuminated half separate from the part visible to the observer?

Read or explore more

Horizon topic Moon Phases

https://launchhorizonhq.com/learn/moon-phases/

Horizon topic Models Explanations

https://launchhorizonhq.com/learn/models-explanations/

Horizon topic Astronomy

https://launchhorizonhq.com/learn/astronomy/

NASA Science Moon Phases

https://science.nasa.gov/moon/moon-phases/

Science Education Resource Center, Carleton College What is a Model?

https://serc.carleton.edu/teachearth/teaching_methods/models/WhatIsAModel.html