

12 - Shadows and Eclipses

- Level 4 - Demonstrate how shadows are formed using simple ray diagrams
- Level 5 - Relate the position of the light to the length of a shadow.
- Level 5 - Explain how a solar eclipse can occur
- Level 6 - Explain the phases of the moon using light diagrams.

Phases of the moon



- **Predict** and **draw** what the moon looks like from the earth in eight positions of the moon's orbit.
- **Determine** the position and phase of the moon from a picture of its appearance on earth.

<http://www.sumanasinc.com/webcontent/animations/content/moonphase.html>

Examine the picture

- Which direction is the light coming from?
- How do you know where the light is coming from?
- Describe how the balls appearance would change if you looked at it while you walked a full circle round it.



You will see the moon in 8 positions



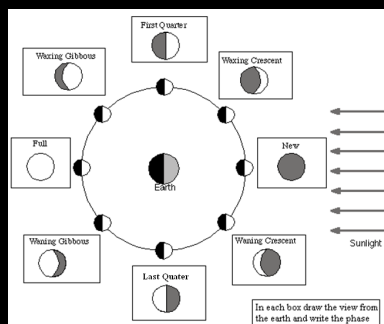
For each position **predict** and **draw** what the moon will look like from earth

Study the diagram

What patterns do you notice? Explain

What happens to the illuminated side after the full moon? Explain

How could you work out the position of the moon from the picture of its view from earth?



This time you will see 8 pictures of the moon from the earth

For each picture:

- Name the phase
- Work out the position A – H

Try this without your diagram

