Reflections from the Moon

The Moon moves around the Earth. We call this movement an orbit.
It takes about one month (28 days) for the Moon to orbit the Earth.
During that time the Moon appears to change its shape. It also seems to shine like a light.
In this activity we can do a whole month of observations in just eight steps.
Prepare to be surprised!

- **Materials:**
  A big round ball like a football or basketball etc..
  A torch
  Aluminium foil

- **What to do: Prepare your Moon**

- Using the reverse side of the aluminium foil, cover the ball so that every bit of the surface is covered. This is the Moon.

- Choose a child whose name starts with S or one who is wearing bright yellow or orange. He/she is the Sun. The Sun holds the torch.

- Choose a child whose name starts with E or who is wearing the Earth's colours from space: blue and green. His/her head is the earth. The Earth holds the Moon.

- Darken the room and turn on the torch. Don't move Sun!

- **What to do: Modelling 'The Phases of the Moon'.**

- **Beginning** Earth faces the torch and holds the Moon ball straight out in front. The ball will appear dark to Earth because the lit side of the ball is facing away from the group.
  We call this the **New Moon**: dark and about to be born.

- **Step 1.** Earth turns a little bit to the left, still holding the Moon ball straight out. Earth will see only a thin, lit crescent on the right side of the ball.
  We call this the **Waxing Crescent**.

- **Step 2.** Earth turns to the left a little more until the Sun is on its right. Earth sees that half the ball is lit.
  We call this the **First Quarter of the Moon**.

- **Step 3.** Earth turns to the left again, so that the lamp is almost behind him/her.
  We call this the **Waxing Gibbous**. A gibbous Moon is one that is less than a full Moon, but more than a half Moon. (Gibbous is a very old word meaning 'hump', Do you think the moon looks like the shape of a camel's hump?)

  NB* (If the ball is directly in the shadow of Earth's head or body, raise the ball up a little higher.)

- **Step 4.** Earth turns to the left again, so that the torch is right behind him/her. Hold the Moon up high! Earth sees the entire side of the Moon ball lit.
  This is the **Full Moon**.

- **Step 5.** Earth keeps turning a little to the left so that the Moon appears to move into the darkness again.
  This is called the **Waning Gibbous** (there is the hump again!)

- **Step 6.** Another move towards the left and Earth sees the Moon ball half in the light and half in the dark.
  This is called the **Third Quarter**.

- **Step 7.**Earth keeps moving to the left until the moon shows only a thin sliver of light. Earth now sees the **Waning Crescent**.

- **Step 8.** Finally, the Earth makes one last turn towards the light and the side of the moon facing the Earth becomes completely dark.
  . We are back to the **New Moon** again.

  Did you notice how the torch reflects off the shiny foil? It isn't the Moon shining (what people call "moonlight"). Actually, it is the torch or sunlight reflecting off the Moon's surface that causes it to glow. The Moon itself puts out no light at all!