

Where are you, God?

Date: 30th November, 2008

Readings: Psalm 80: 1-7, 17-19;
Isaiah 64: 1-9; Mark 13: 24-37

Christmas Science

Where are you God?

Science offers ways of exploring the hard-to-see, hard-to-understand nature of God. The imagery in Mark's gospel comes from the sun, clouds, darkness; Isaiah talks about flames and fire. These science activities explore this imagery, and the concept that things aren't always as they seem, so we need to look again to find explanations and hope.

Shadow Magic

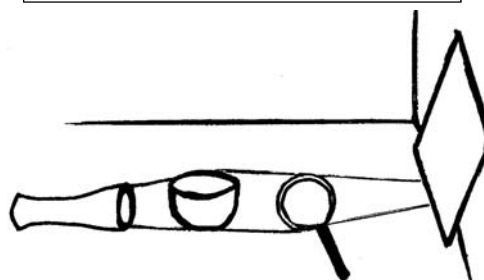
Materials:

- ♦ piece of white cardboard
- ♦ plastic cup
- ♦ ruler
- ♦ torch
- ♦ magnifying lens

Method:

- ♦ Place the piece of white cardboard on the floor so it is leaning against a wall.
- ♦ Place the plastic cup on the floor about 20cm in front of the cardboard.
- ♦ Take note of where you place the torch, and shine the torch beam on the cup. Look at the shadow it makes on the cardboard. Lightly trace around the shadow on the cardboard.
- ♦ Place the magnifying lens between the cup and the cardboard.
- ♦ From the same place as before, shine the torch beam on the cup. Note what has happened to the shadow.
- ♦ You may have to move the torchlight back and forth to get a clear shadow. Describe what effect the magnifying lens had on the clear shadow.

Magnifying lenses do strange things with light. The lens bends light rays and so normal things look different.



Explanation:

The cup's shadow was smaller when the magnifying lens was placed between the cup and the cardboard.

A shadow is the absence of direct light rays. When you place a magnifying lens between the cup and the cardboard, it picks up the rays coming around the outside of the cup and bends them inward, so the cup's shadow is smaller.

Heat-a-Cloud

Materials:

- ♦ lamp without a shade
- ♦ timer
- ♦ baby powder

Method:

- ♦ Turn on the lamp for about 5 minutes. **Caution:** Do not touch the light bulb; it may get very hot.
- ♦ Sprinkle a tiny pinch of the baby powder above the hot light bulb. What happens?



Explanation:

- ♦ The powder floated upwards. When the light bulb warmed up it also warmed the air above it. Warm air always rises. In this case, the warmed air took the talc with it as it rose. [The talc is light enough to float in the air because of the force or the pressure of the air as it rises.]
- ♦ *Everyday application:* Each day the sun warms the earth and heats the air above the ground. Cool air moves down to take the place of the warmed air. This movement of warm and cool air masses is what causes most winds.

You could also use these science activities for the theme: Jesus is the Light of the world.

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