



## Focus on Light

### Post-visit Activity

This lesson has been designed as a post-visit activity after the 'Focus on Light' workshop, for schools that are part of the Discover Primary Science programme.

### Lesson Overview

Pupils carry out an investigation to determine which materials reflect light and which materials absorb light.

### Learning Outcomes

- Pupils will understand that light travels from a source, in a straight line.
- They will be aware that some materials are opaque, some are translucent and some are transparent.
- They will know that some materials reflect light.
- They will know that some materials absorb light.

### Curriculum links

SOCIAL ENVIRONMENTAL AND SCIENTIFIC EDUCATION (SESE)

SCIENCE

WORKING SCIENTIFICALLY

*Through completing the strand units of the science curriculum the child should be enabled to:*

Questioning

- ask questions that will identify problems to be solved
- ask questions that will help in drawing conclusions and interpreting information

Predicting

- offer suggestions (hypotheses) based on a number of observations and data available about the likely results of the investigations
- make inferences based on suggestions and observations
- propose ideas or simple theories that may be tested by experimentation

Investigating and experimenting

- collect information and data from a variety of sources, including observations in the environment, classroom observations and experiments, photographs, books, maps, CD-ROM and computer database
- design, plan and carry out simple experiments, having regard to one or two variables and their control and the need to sequence tasks and tests
- realise that an experiment is unfair if relevant variables are not controlled
- appreciate the importance of repeating tests and experiments

### Estimating and measuring

- use appropriate simple instruments and techniques to collect and record data on length, weight, mass, capacity, time and temperature thermometers, rulers, scales, stop-watches, measuring jugs record sheets, spring balances and forcemeters
- estimate and use appropriate standard units of measurement
- decide what should be measured and the degree of accuracy required

## SOCIAL ENVIRONMENTAL AND SCIENTIFIC EDUCATION (SESE)

### SCIENCE

#### STRAND UNIT: LIGHT

*The child should be enabled to:*

- learn that light is a form of energy
- know that light travels from a source
- investigate the splitting and mixing of light
- investigate how mirrors and other shiny surfaces are good reflectors of light
- effects of flat shiny surface, curved shiny surface
- explore how objects may be magnified using simple lens or magnifier
- investigate use of lens design and make model telescopes
- appreciate the importance of sight
- understand the role of sunlight in photosynthesis and appreciate that the sun gives us heat and light without which people and animals could not survive
- be aware of the dangers of excessive sunlight, dangers of looking directly at the sun, effect of the sun's rays on skin

### LEARNING STYLES INVOLVED

Visual/Spatial, verbal/linguistic, kinesthetic, interpersonal, intrapersonal.

### THINKING SKILLS INVOLVED

Managing Information, Thinking, Problem Solving and Decision Making, Working with Others.

## Lesson Plan

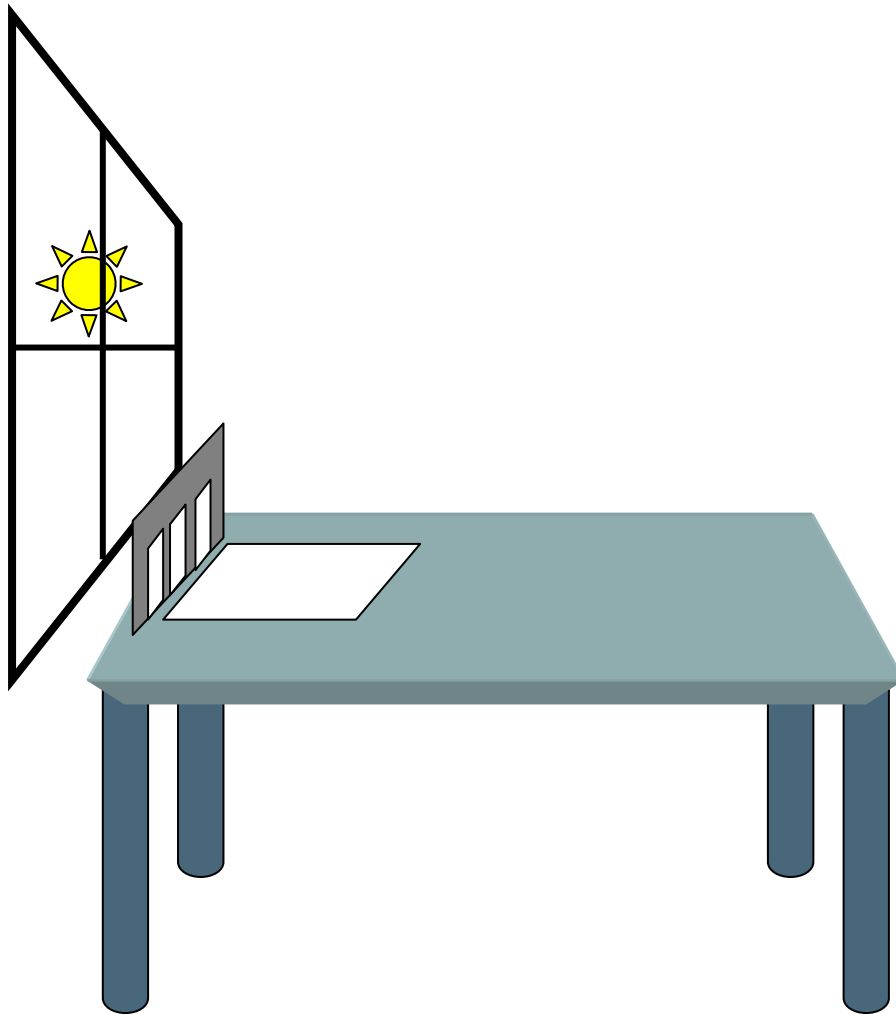
### WHAT YOU NEED

- a mirror
- a pencil
- a few sheets of white paper
- a piece of dark card with strips cut out

### SET UP

Wait for a sunny day to carry out this investigation. Go to a window from where you can see the sun. **WARNING** – do not look directly at the sun.

Set up a table near the window. Now place the dark card facing the sun and place the white paper flat onto the table:



Have some materials handy for your investigation, for example:

- a mirror
- some card (any colour)
- some clear plastic
- some coloured plastic
- some silver foil
- a clear glass with some water in it

### **INTRODUCTION**

Start by reinforcing some of the terminology from the workshop. Remind them of the investigation in which they discovered some opaque, translucent and transparent materials. Talk about what happens if a material doesn't let light through. What do the pupils think happens to the light?

### **INVESTIGATION**

First, get the pupils to have a look at what happens to the light of the sun when it passes through the card. On the white paper, get a pupil to trace around the light

you can see. Which parts of the card are letting light through? Which parts aren't letting light through? Ask what this means for the path the light travels. Is this a straight path or a curved path?

What do the pupils think will happen if you place something in the light lines. Try this with all the different materials you've selected. Make sure to ask the pupils for their prediction for each of the materials. They can record their findings in a table. Encourage them to use the right terminology. They can also trace the light lines for each of the materials (where applicable) on a new sheet of white paper.

Example table:

Light Investigation	
Material	What happened to the light lines?
Card	
Clear plastic	
Coloured plastic	
Silver foil	
Glass of water	

#### PLENARY

Talk to the pupils about the results. Did they make the right predictions? What does this mean for the different materials; which ones are transparent, which ones are translucent and which ones are opaque? What would the different materials be useful for?