7

Monday

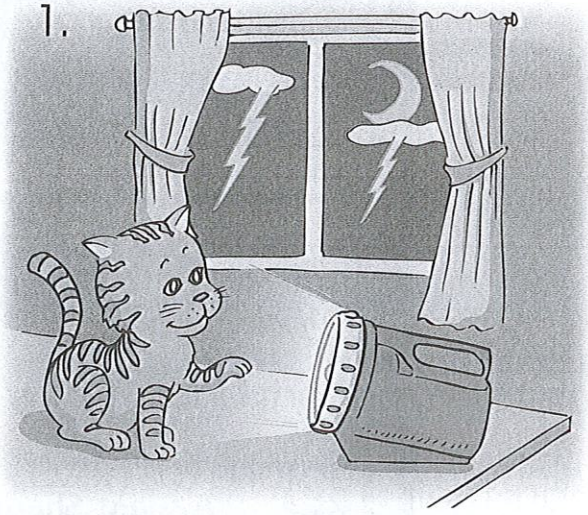
Light

- *Light is a form of energy that is found naturally or artificially in the universe.*
- *Light travels in straight lines, reflecting off some objects, and bending as it passes from one medium to another.*

A. Look at the "light" in each picture. Classify it with the given words.

natural / artificial **light producer / light reflector**

1.



Moon:

_____ ; _____

Cat:

_____ ; _____

Flashlight:

_____ ; _____

Lightning:

_____ ; _____

2.

Sun:

_____ ; _____

Water:

_____ ; _____

Candle:

_____ ; _____

Sunglasses:

_____ ; _____

B. Read the properties of light. Then draw lines to match them with the movie posters that illustrate the properties.

Properties* of Light

* Properties are the special things or powers that an object has.

Light travels in straight lines.

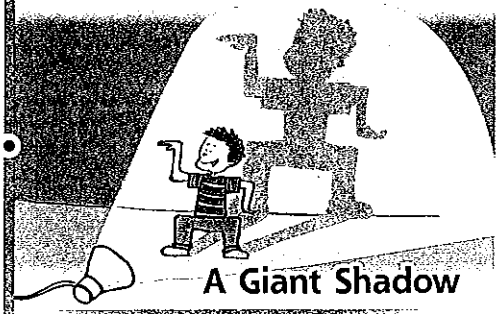
Light can pass through some things but not others.

Light can be reflected by shiny objects.

Light bends as it passes from one medium to another.

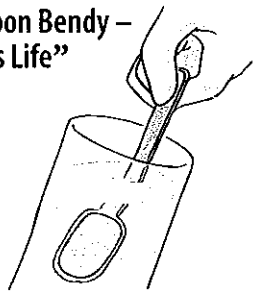
"Ken the Thief"

The Reflective Moon

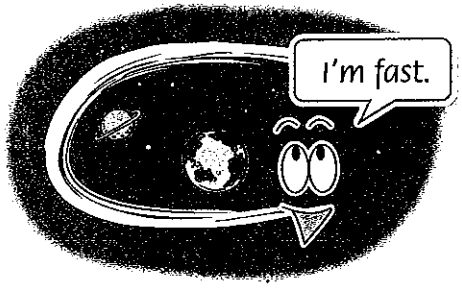


A Giant Shadow

"Bendy Spoon Bendy – A Magician's Life"



Light travels at more than one billion kilometres an hour.

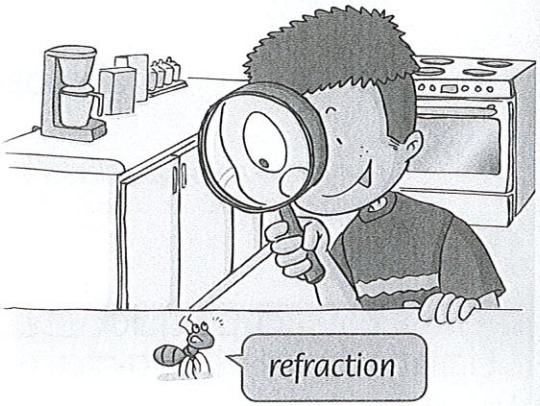


8

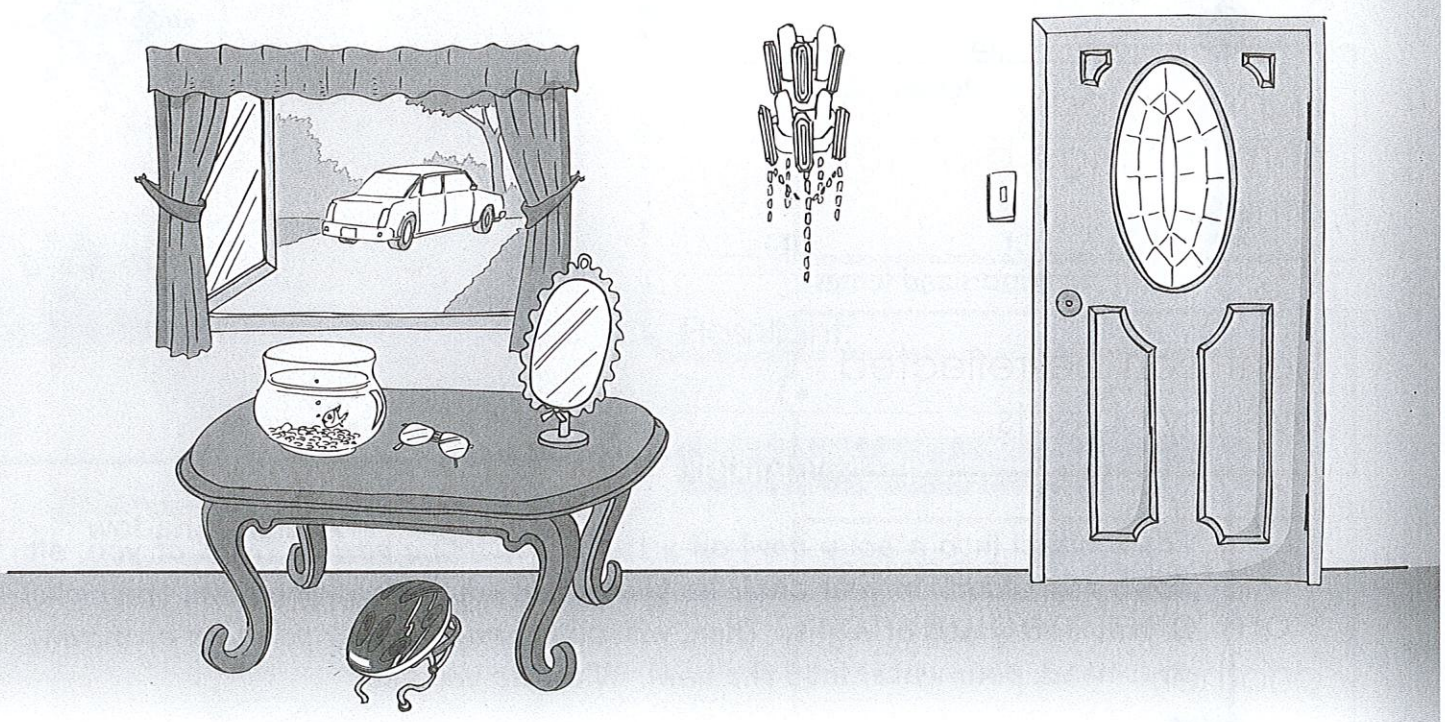
Monday

Light – Reflection and Refraction

- *We can see something because light is bouncing or reflecting off that thing.*
- *Lenses bend light, or refract it, making objects appear smaller or larger.*
- *Some devices use reflection and refraction to help us see things better.*



A. Colour the objects that reflect green and the objects that refract red.



B. The names of the children are reflected in a mirror. Put a mirror along the grey lines to find out their names in normal form and write them on the lines.

YNANCY

BRIAN

My name is _____.

My name is _____.

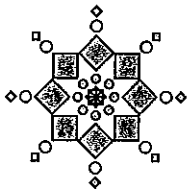
C. Read the clues and fill in the missing letters to complete the names of the devices. Then draw lines to match the devices with their images.

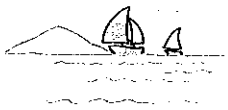
kaleidoscope microscope telescope

1. ___a___ ___id___ ___cope
   mirrors

2. ___ ___le___ ___op___
   lenses

3. ___ ___cr___ ___ ___op___
   mirrors and lenses





Experiment – Fun with Refraction

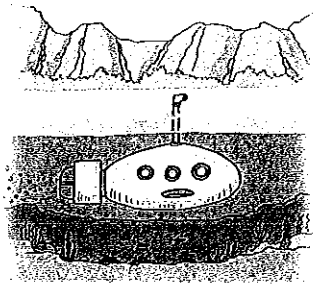
Put a nickel into a soup bowl on a table. With the bowl in front of you, sit down and slouch in your chair so that when you look at the bowl, the nickel is just barely out of sight. Then, without changing your position or moving your head, pour water into the bowl. What do you see?

_____

_____

Science Fact

A periscope makes it possible to see things from a hidden position. It is widely used on submarines.

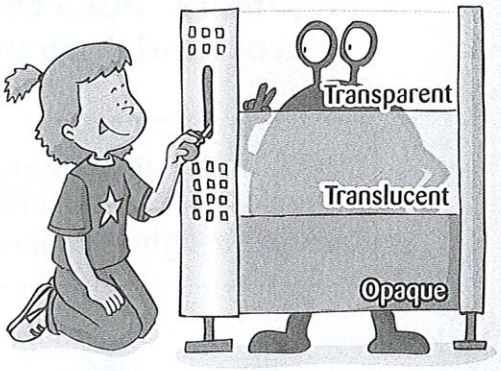


9

Monday

Light – Transparency

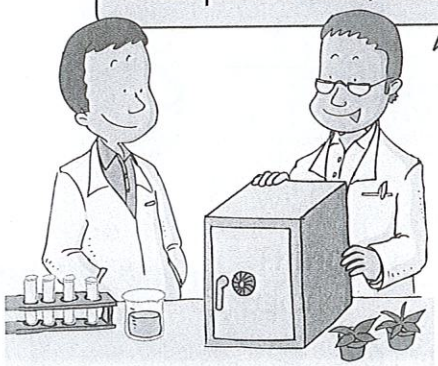
- Materials that allow all light to pass through are said to be transparent. A translucent material allows some light to pass through, while an opaque material doesn't allow light to pass through it at all.
- Shadows are a result of light not being able to pass through objects.



A. Choose the best word to describe the material being talked about in each picture. Then give an example that has the same property as the one mentioned.

transparent **translucent** **opaque**

1. This unit provides the total darkness that these plants need, at least for the time being.

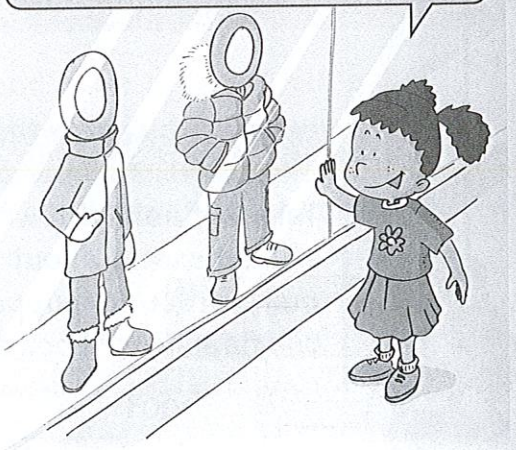


_____

Example:

_____

2. I can see the clothes clearly through this clean and nice window.



_____

Example:

_____

3. This weave will allow just the perfect amount of late afternoon light to enter your lovely living room.

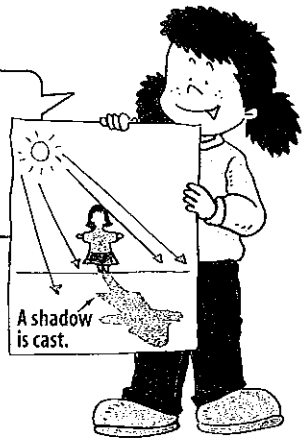
_____

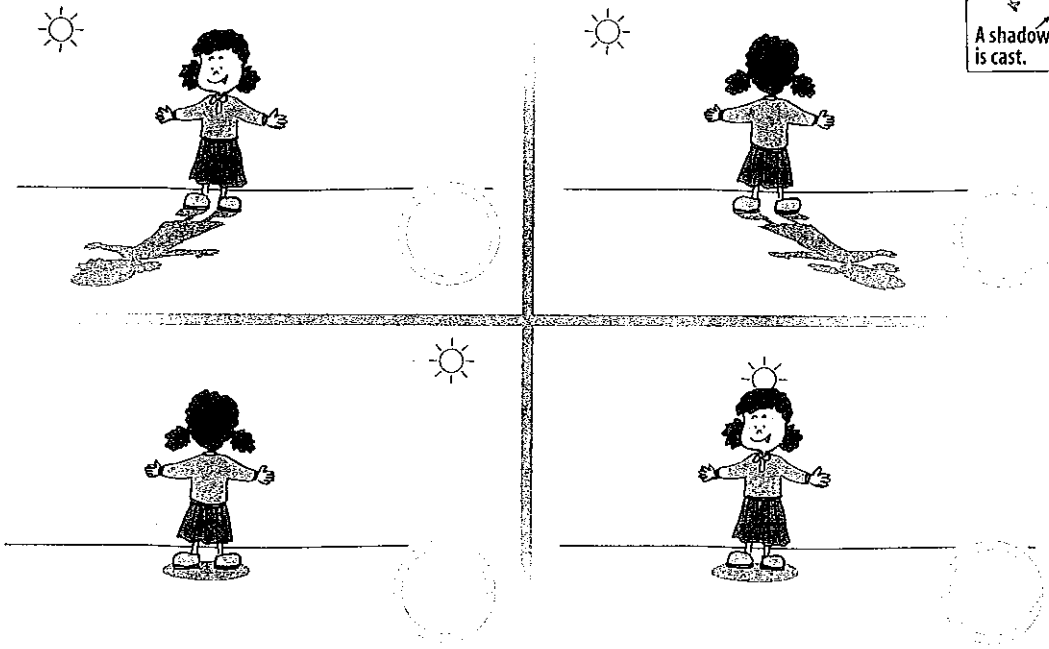
Example:

_____

B. Read what Judy says. Look at the location of the shadow in each picture. Put a check mark in the circle if it is correct; otherwise, put a cross and draw the correct one in the picture.

Light travels in a straight line and opaque objects absorb light. Therefore, the length of the shadow of an opaque object depends on where the light is coming from in relation to the object.



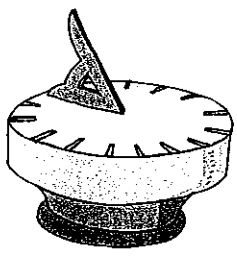


Experiment – Shadow Puppets

Take a flashlight with you into a dark room. You should stand about 1 m away from a clear wall and make different puppets with your hands in front of the flashlight. Look at the shadows cast on the wall.

Science Fact

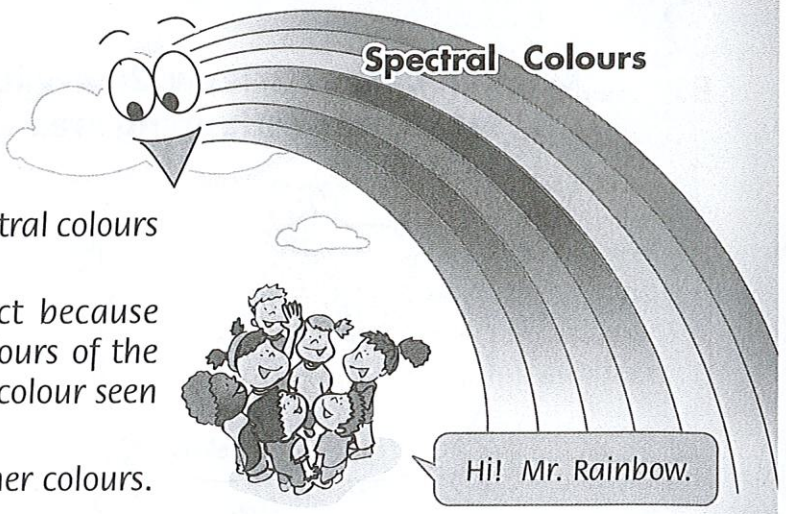
The sundial was an ancient timepiece that used the shadow cast by the sun to tell time. As the sun travelled across the sky, the shadow would move and mark the time of day on the dial.



10

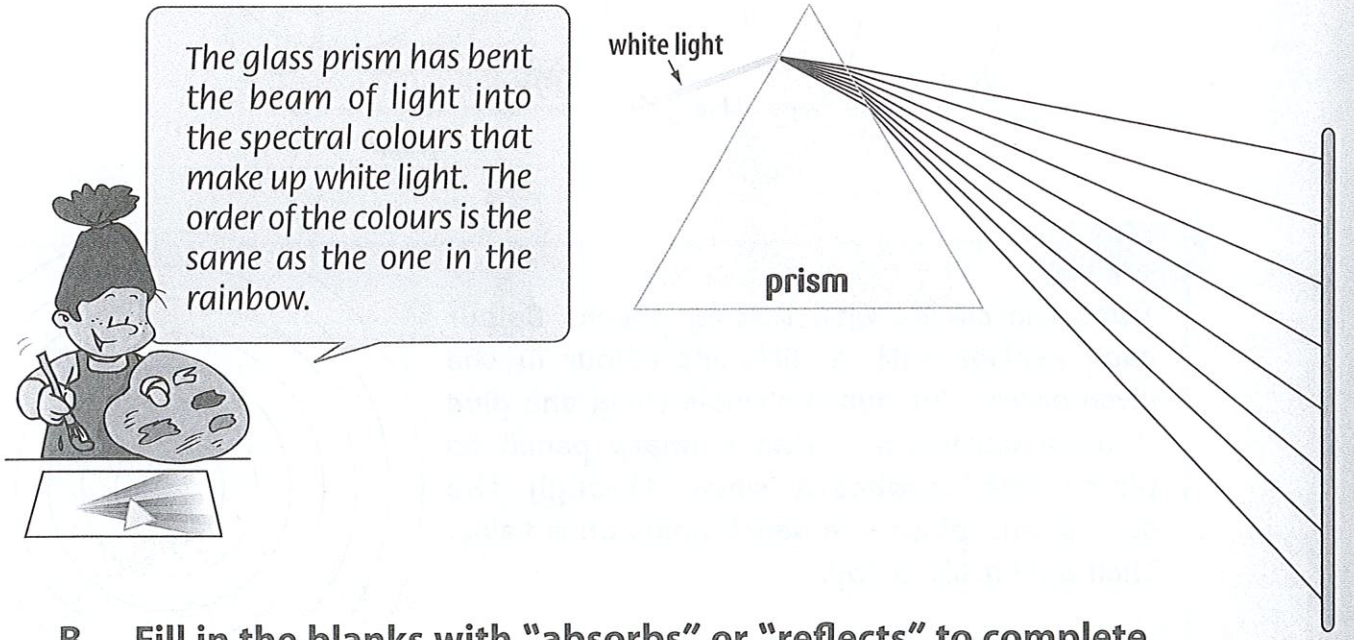
Monday

Light and Colour



- White light is made up of all the spectral colours of the rainbow.
- We can see the colour of an object because the object absorbs all the other colours of the spectrum, except the one seen. The colour seen is the colour reflected.
- Colours can be mixed to produce other colours.

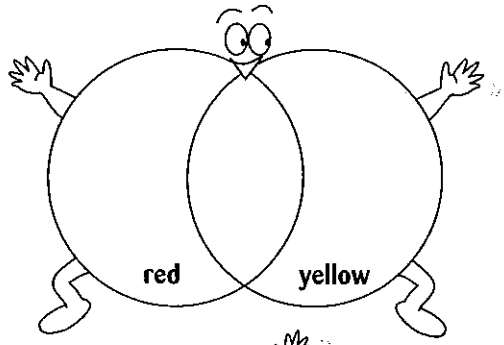
A. Read what Judy says. Help her colour the spectrum.



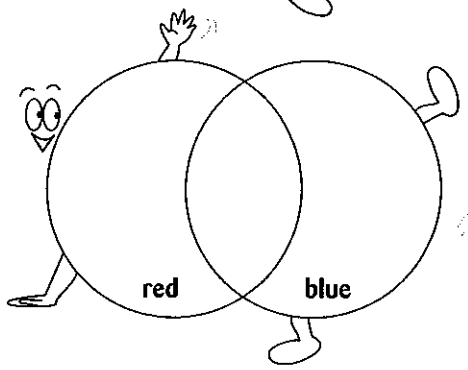
B. Fill in the blanks with "absorbs" or "reflects" to complete the sentences.

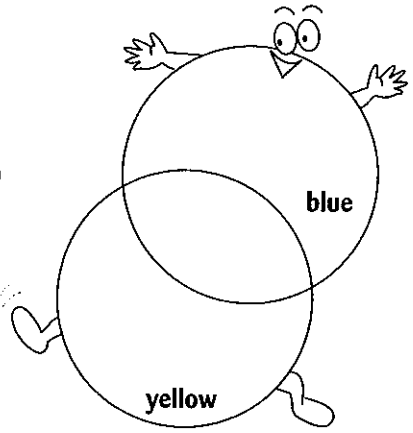
1. The grass looks green because it _____ all colours except green.
2. A black cat is black because it _____ all the colours that make up light.
3. A clean, white shirt appears white because it _____ all the spectral colours of the rainbow.

C. Colour the circles with acrylic paint. Then write what colours you can see in the overlapping area.



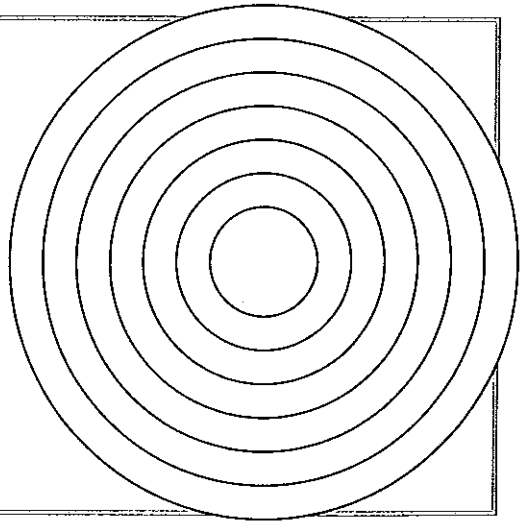
- red + yellow = _____
- red + blue = _____
- yellow + blue = _____





Try this

Trace the circles with tracing paper. Colour each section with a different colour in the given order. Cut out the whole thing and glue it on a cardboard. Use a sharp pencil to pierce the cardboard wheel through the centre, and place the pencil point on a table. Then spin it like a top.



Order of the colours: *(from outside to inside)*
red, orange, yellow, green, blue, indigo, violet

Science Fact

The light that we see is the "visible" part of something known as the electromagnetic spectrum (a bunch of types of radiation). Infrared light is often thought of as heat, and ultraviolet light is the invisible light that gives us sunburns if we stay too long in the sun.