



3055 BA SANGAM COLLEGE

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WORKSHEET 7

SCHOOL: BA SANGAM COLLEGE

YEAR 12

SUBJECT: PHYSICS

NAME OF STUDENT: _____

STRAND	GEOMETRICAL OPTICS AND WAVE MOTION
SUB-STRAND	Light
Content Learning Outcome	➤ Analyze situations in which light is refracted and relate to particle model

Properties

1. Light is a type of electromagnetic radiation. It is made of oscillating electric and magnetic fields.
2. Light travels at a speed of 3.00×10^8 m/s.
3. Light contains energy. The brighter the light the more the energy.
4. Light travels in a *straight line*. This is indicated by formation of shadows.

Light travels in all directions from a light source

Light Rays

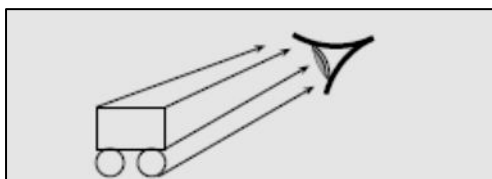
In physics we use the idea of a light ray to indicate the direction that light travels. Light rays are lines with arrows and are used to show the path that light travels. In Figure below the light rays from the object enters the eye and the eye sees the object.

The most important thing to remember is that we can only see an object when light from the object enters our eyes. The object must be a source of light (for example a light bulb) or else it must reflect light from a source (for example the moon), and the reflected light enters our eyes. Important: We cannot see an object unless light from that object enters our eyes.

Definition: Light ray

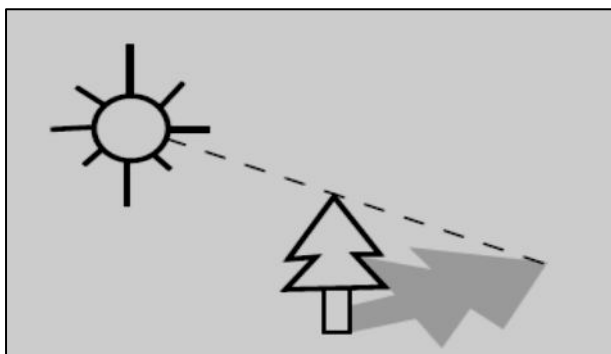
Light rays are straight lines with arrows to show the path of light.

Note : Light rays are not real. They are merely used to show the path that light travels.



Shadows

Objects cast shadows when light shines on them. This is more evidence that light travels in straight lines. The picture below shows how shadows are formed.



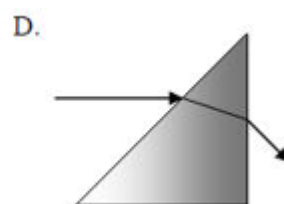
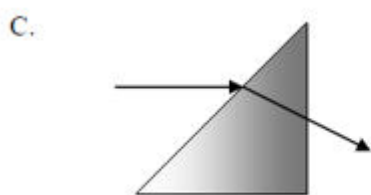
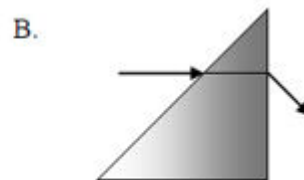
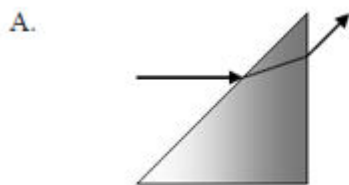
Exercise: Light Rays

1. Are light rays real? Explain.

2. Give evidence to support the statement: "Light travels in straight lines". Draw a ray diagram to prove this.

3. You are looking at a burning candle. Draw the path of light that enables you to see that candle.

4. Which one of the following is the correct path of light (Hint: Year 11 Work)



5. Which of the following has both Wavelength and Amplitude labelled correctly

