

## EaD Comprehensive Lesson Plans

<b>Strand:</b>	Forces and Energy	<b>Sub-Strand:</b>	Energy
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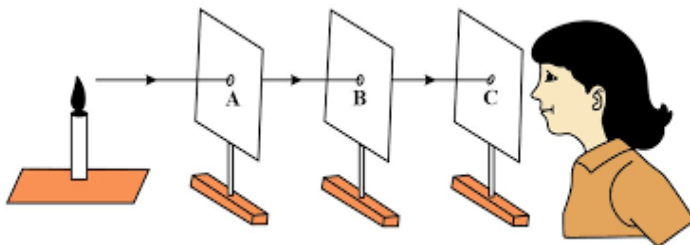
<https://www.TeachersAvenue.net>

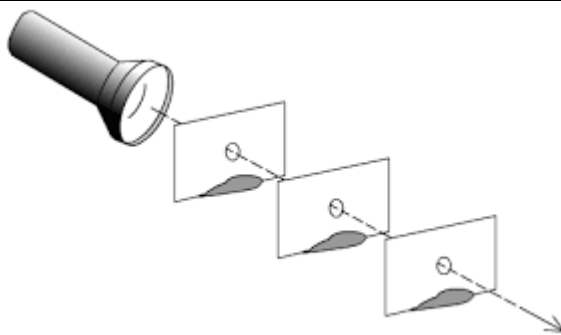
<https://TrendingGhana.net>

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**BASIC 7**

**WEEKLY LESSON PLAN – WEEK 8**

<b>Content Standard:</b>	B7.4.1.3 Demonstrate understanding of characteristics of light, such as travelling in a straight line, reflection, refraction and dispersion				
<b>Indicator (s)</b>	B7.4.1.3.1 Demonstrate how light travels in a straight line.		<b>Performance Indicator:</b> learners can follow processes to explain how light travels in a straight line.		
<b>Week Ending</b>	01-03-2024				
<b>Class</b>	B.S.7	<b>Class Size:</b>		<b>Duration:</b>	
<b>Subject</b>	Science				
<b>Reference</b>	Science Curriculum, Teachers Resource Pack, Learners Resource Pack.				
<b>Teaching / Learning Resources</b>	Pictures, Video, Candle, Touch light, Charts, Power point Presentation.		<b>Core Competencies:</b>	<ul style="list-style-type: none"><li>• Digital Literacy</li><li>• Critical Thinking and Problem Solving</li><li>• Communication and Collaboration.</li></ul>	
<b>DAY/DATE</b>	<b>PHASE 1 : STARTER</b>	<b>PHASE 2: MAIN</b>			<b>PHASE 3: REFLECTION</b>
<b>MONDAY</b>	Review Learners knowledge on the previous lesson.	<div>1. Perform experiments to show that light travels in a straight line for Learners to observe.</div> <div>2. Discuss the processes involved in an experiment to show that light travels in a straight line.</div> <div>3. Assist Learners to perform experiments to prove that light travels in a straight line.</div> <div></div> <div>Light the candle and make a pinhole on each cardboard sheet. The holes should be made at equal height such that the flame of the candle is visible through them. Now look through the holes and observe light travels in which line. The light flame will be visible along the straight line of holes.</div>			<div>Reflect on the processes involved in proving how light travels in straight line.</div> <div><b>Exercise;</b></div> <div>Draw a diagram to show how light travels in straight line.</div>



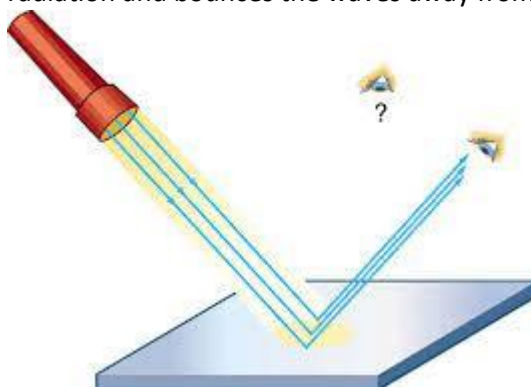
**THURSDAY**

Discuss the meaning of "Reflection of light" with the Learners.

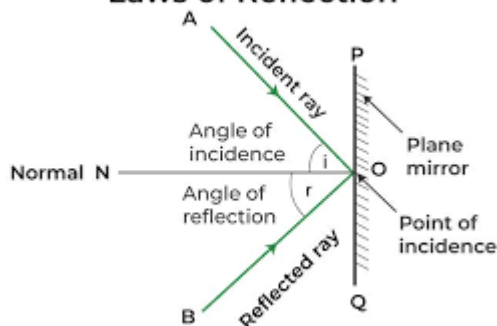
1. Assist Learners to describe how Light is reflected.
2. Discuss the law
3. Learners brainstorm to differentiate between reflection of light and refraction of light.
4. Demonstrate on an experiment to prove how light is refracted.
5. Individual Learners practice performing an experiment on how is refracted.

**Reflection of Light;**

Reflection of light (and other forms of electromagnetic radiation) occurs when the waves encounter a surface or other boundary that does not absorb the energy of the radiation and bounces the waves away from the surface.



**Laws of Reflection**

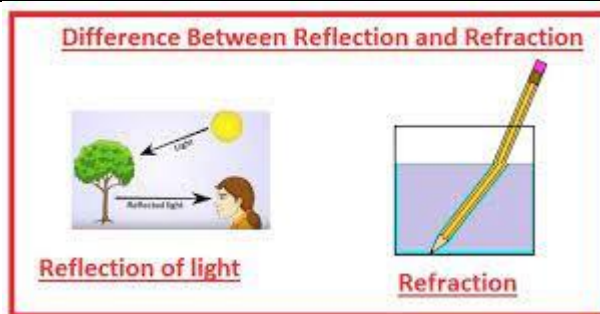


**Difference between reflection of Light and Refraction of Light;**

Through questions and answers, conclude the lesson.

**Exercise;**

1. Explain the following;
  - i. Reflection of Light
  - ii. Refraction of Light
2. Describe how Light is Reflected.



Reflection	Refraction
1. The process of sending back the light rays which fall on the surface of an object, is called reflection of light.	1. Bending of light when it goes from one medium to another obliquely is called refraction of light.
2. In reflection of light, rays are deflected from the surface of the medium back same medium.	2. The refraction of light takes place at the boundary between the two media.
3. According to first law of reflection of light, the incidence ray, the reflected ray, and the normal all lie in the same plane.	3. According to the first law of refraction of light, the incident ray, the refracted ray and normal at the point of incidence all lie in the same plane.
4. According to second law of reflection of light, the angle of reflection is always equal to the angle of incidence.	4. According to second law of refraction of light, the ratio of sine of angle of incidence to the sine of angle of refraction is constant for a given pair of media.

**FRIDAY**

Review Learners knowledge on the previous lesson.

1. Discuss the meaning of “ dispersion of Light” with the Learners.
2. Demonstrate on an experiment to show dispersion of light into colours for Learners to observe.
3. Assist Learners to perform an experiment to show dispersion of light into colours.
4. Discuss causes of Light dispersion with the Learners.

### Dispersion

When light passes through a prism, it is separated into distinct color components. This is referred to as light dispersion. A prism is a transparent glass with two flat surfaces that are angled at an angle. A white light beam is divided into seven hues by a prism: violet, indigo blue, green, yellow orange, and red. The band of colors scattered by light entering a glass prism is referred to as the **spectrum**.

### Causes of Dispersion

- Because each colours’ light has distinct wavelengths, white light disperses into seven colours. Red light has the longest wavelength in this range of seven colours, while violet light has the shortest.
- In a vacuum, all colours of light travel at the

Summarize the lesson.

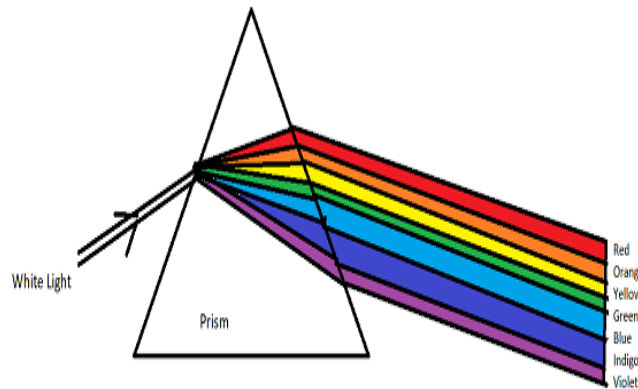
### Exercise;

1. What is Light dispersion?
2. Draw a diagram to show Light dispersion.

same speed. However, in any transparent material, such as glass or water, various colours of light move at different rates.

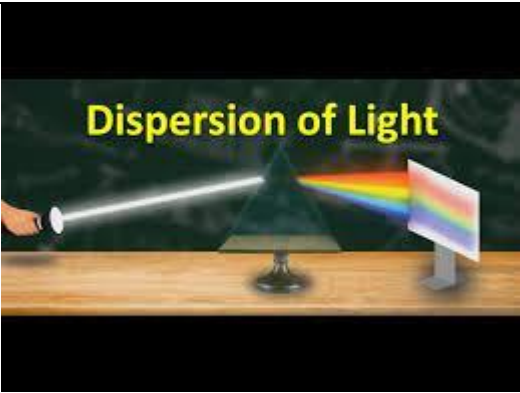
- Various colours' lights bend through different angles due to differences in their velocity. Red light travels the fastest through any transparent medium, whereas violet light travels the slowest.
- As a result, red light bends the least while violet light bends the most.
- Thus, the dispersion of white light into seven colors happens when various colored photons bend at different angles while passing through a glass prism.

#### **Dispersion of white light by a Prism**



When white light passes through a glass prism, it splits into its seven constituent colors, which is known as dispersion of white light. Violet, Indigo, Blue, Green, Yellow, Orange, and Red are among the colors visible. The color sequence is remembered as VIBGYOR. The spectrum is a grouping of seven colors. With respect to the incidence angle, each component color of light bends at a different angle. Violet light bends the least, whereas red light bends the most.

- White light is made up of seven different colors, including violet, indigo, blue, green, yellow, orange, and red.
- Monochromatic light is defined as light that has only one color or wavelength, for example, sodium light.
- Polychromatic light is defined as light that has more than two colours or wavelengths, such as white light.

				
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School:

District: