



# 3055 BA SANGAM COLLEGE

PH: 6674003/9264117 E-mail: basangam@connect.com.fj



## WORKSHEET 21

School: Ba Sangam College

Year/level: 10

Subject: Basic Science

NAME: \_\_\_\_\_

Strand 3	Energy
Sub Strand 3.1	Energy Source and Transfer
Content Learning Outcome	Investigate the behavior of light passing through lenses and prisms and relate this to their uses and how they are cared

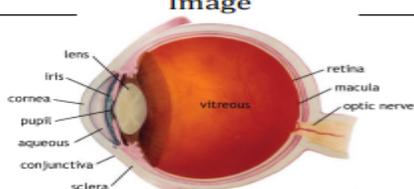
### Lesson Notes –Behavior of Light on Lenses and Prisms

#### Behaviour of light

- Light enables us to see things. It is a form of energy that we can detect with our eyes.
- Light comes to us mainly from the sun.

#### Lenses

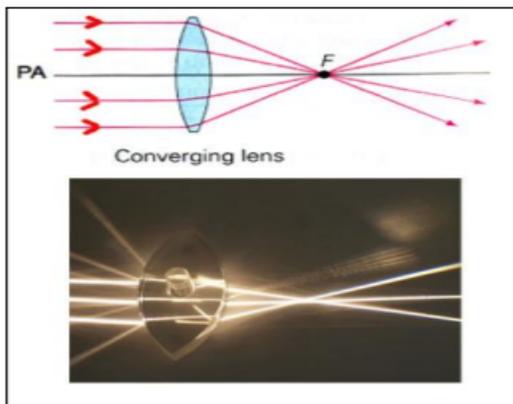
- Lens is a transparent optical device used to converge or diverge transmitted light and to form images  
Examples of materials containing lenses

Object	Image	Object	Image
Eyes		Eye glasses	
Telescopes		Hand lens	
Microscope		Binocular	

## What do lenses do to light rays?

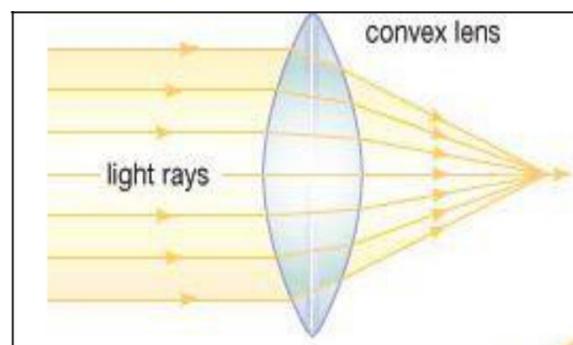
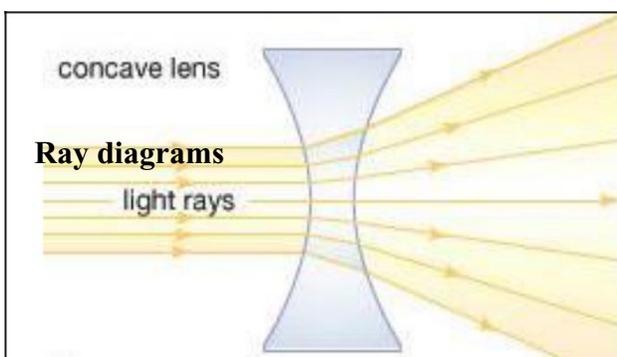
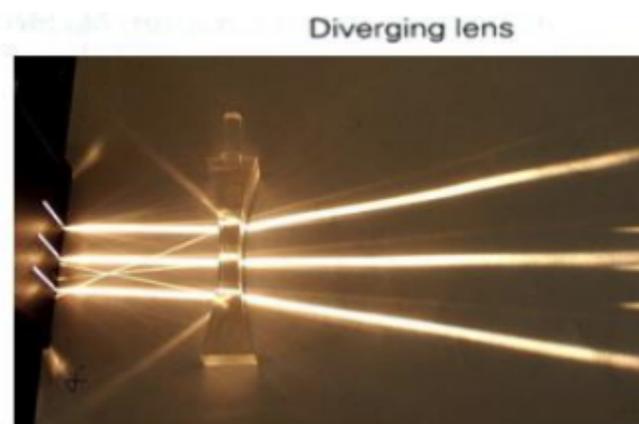
### Converging lens

- Lens bends light rays so that they meet at one point called the **focus** of the lens.
- Since the lens bends the light rays to a point, it is said to be a **converging lens** or a **convex lens**.
- The more curved the lens, the more it bends the light.
- A convex lens acts like a concave mirror.
- Converging lenses are thicker in the middle than on the outside.



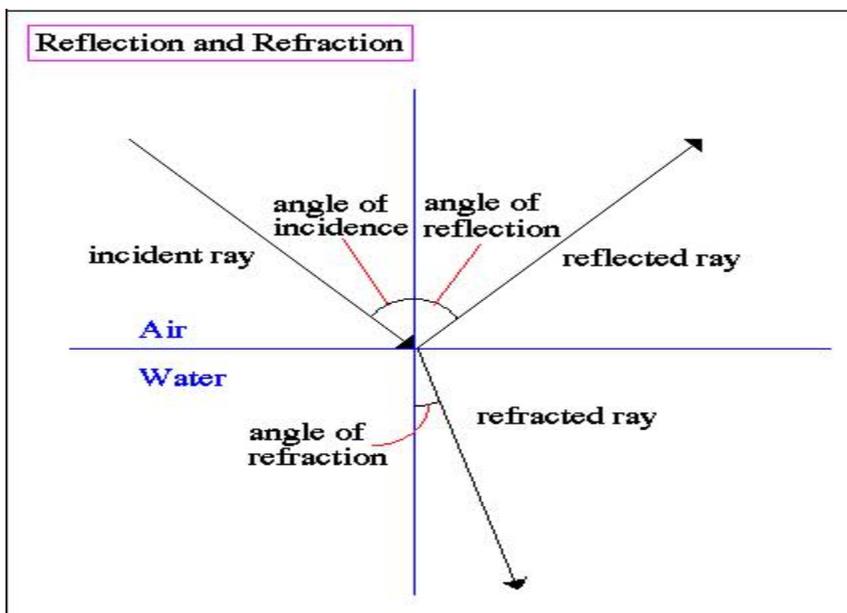
### Diverging lens

- These lenses are thinner in the middle and they also bend light.
- the light rays are bent outwards and are said to diverge or spread out.
- Concave lens behave like convex mirrors.



## Refraction

- Refraction is the bending of light when it enters a medium where its speed is different.
- Refraction of light happens when it passes from a fast medium to a slow medium and bends the light ray toward the normal to the boundary between the two media.
- The amount of bending depends on the indices of refraction of the two media.
- Refraction is responsible for image formation by lenses and the eye.



### Example

When a ray of light enters a glass block, it bends towards the normal [fast medium to slow medium] and as it leaves the glass block, it bends away from the normal [slow medium to fast medium].

The bending of light can also give you a false impression about depth.

### Exercise

1. Give two examples of materials that contain lenses.

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(1 mark)

2. Differentiate between divergent and converging lenses.

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(2 marks)

3.a. Concave lens acts behaves like a \_\_\_\_\_ mirror.

(1 mark)

b. Convex lens acts like a \_\_\_\_\_ mirror.

(1 mark)

4. Define:

a. Refraction

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(1 mark)

b. Reflection

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(1 mark)

TOTAL: \_\_\_\_\_ / 7

THE END

