

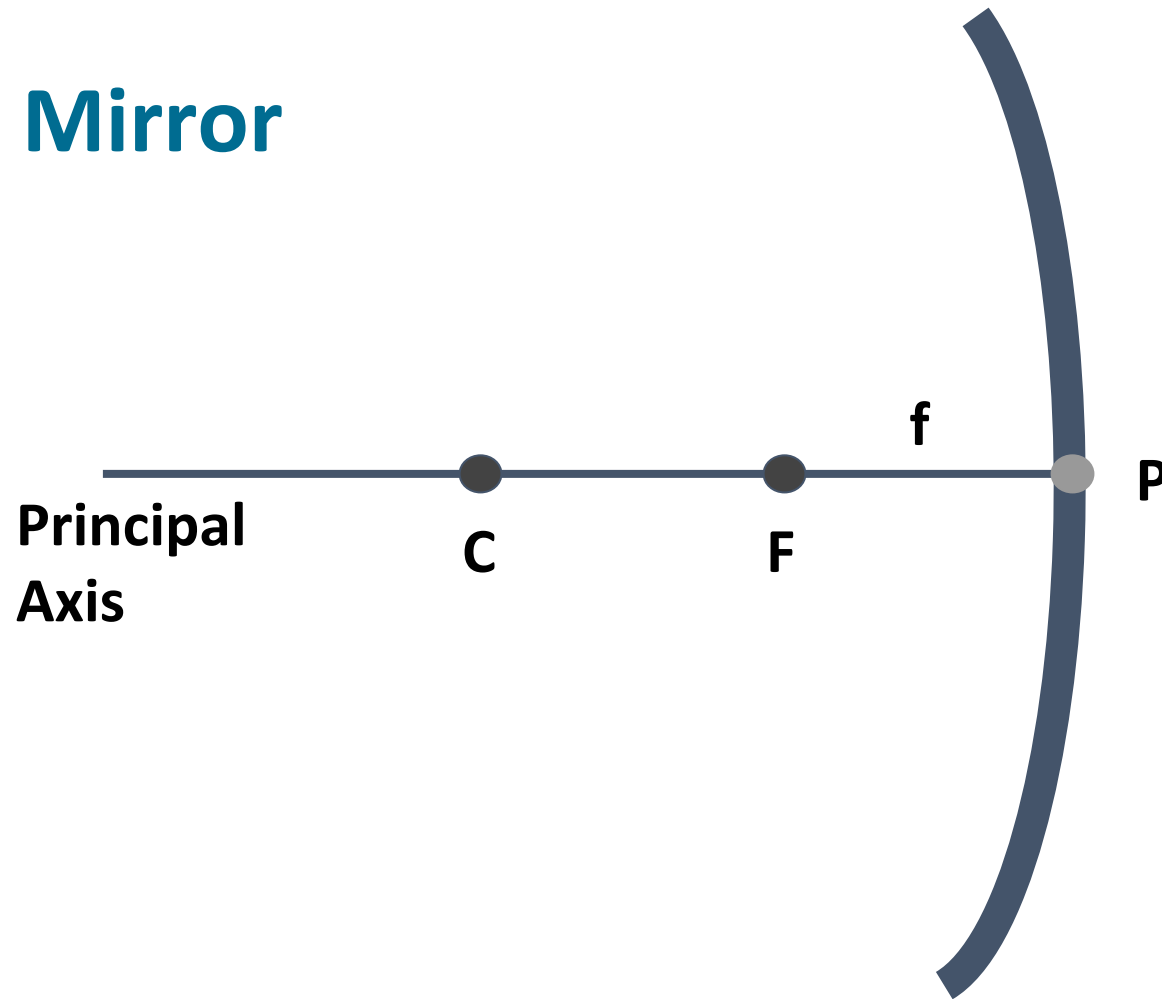
# Concave and Convex Mirror

## -> Terminology

Reflect on the terminology used when referring to concave and convex mirrors and the images they form.

### Instructions:

- Examine the diagram ->
- Label the diagram with the terminology.
- Try to explain the terminology to your partner before looking at the definition cards. The definition cards are available on the next slide.
- Test your knowledge with the terminology grid. The terminology grid is available on the last slide.



## Concave Mirror

*A spherical mirror that caves in at the centre.*

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## Convex Mirror

*A spherical mirror that bulges out at the centre.*

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## Spherical Mirror

*A mirror with a surface that is either concave or convex.*

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## Centre of Curvature (C)

*Centre of sphere from which the mirror is made.*

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## Principal Axis

*Straight line joining the Pole to the Centre of Curvature.*

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## Vertex/Pole (P)

*The centre of the spherical mirror.*

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## Focus/Focal Point (F)

*The halfway point between the centre of curvature and the pole.*

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## Focal Length (f)

*Distance from the Focus to the Pole.  
Note:  $|FP| = |CF|$*

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## Virtual Image

*An image that is formed by the apparent intersection of light rays. Such an image can never be formed on a screen. It can be located by the method of no parallax.*

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## Real Image

*An image that is formed by the actual intersection of light rays. Such an image can be located on a screen or by the method of no parallax.*

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## Uses of Concave Mirrors

*Object inside  $f$ : Cosmetic/shaving mirror, and a dentist's mirror.  
Object at  $f$ : Floodlights, projector, torch, and searchlights.*

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## Uses of Convex Mirrors

*Mirror at concealed entrances, mirror to deter shoplifters, and car door mirrors. These mirrors give a wider field of view.*

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## Magnification (m)

- Is the number of times the image is bigger (or smaller) than the object.
- The ratio of the height of the image to the height of the object.

$$m = \frac{v}{u}$$

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## Convex Image Formula

$$\frac{1}{u} - \frac{1}{v} = -\frac{1}{f}$$

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## Real Image Concave Formula

$$\frac{1}{u} + \frac{1}{v} = \frac{1}{f}$$

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## Virtual Image Concave Formula

$$\frac{1}{u} - \frac{1}{v} = \frac{1}{f}$$

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## Self-Assess:

Keyword	Definition
Concave Mirror	
Convex Mirror	
Spherical Mirror	
Centre of Curvature (C)	
Principal Axis	
Pole (P)	
Focus/Focal Point (F)	
Focal Length (f)	
Virtual Image	
Real Image	
Uses of Concave Mirrors	
Uses of Convex Mirrors	
Magnification	
Formulae	

## Self-Assess:

Keyword	Definition
Concave Mirror	A spherical mirror that caves in at the centre.
Convex Mirror	A spherical mirror that bulges out at the centre.
Spherical Mirror	A mirror with a surface that is either concave or convex.
Centre of Curvature (C)	Centre of sphere from which the mirror is made.
Principal Axis	Straight line joining the Pole to the Centre of Curvature.
Pole (P)	The centre of the spherical mirror.
Focus/Focal Point (F)	The halfway point between the centre of curvature and the pole.
Focal Length (f)	Distance from the Focus to the Pole. Note: $ FP  =  CF $
Virtual Image	<i>An image that is formed by the apparent intersection of light rays. Such an image can never be formed on a screen. It can be located by the method of no parallax.</i>
Real Image	<i>An image that is formed by the actual intersection of light rays. Such an image can be located on a screen or by the method of no parallax.</i>
Uses of Concave Mirrors	<i>Object inside f: Cosmetic/shaving mirror, and a dentist's mirror. Object at f: Floodlights, projector, torch, and searchlights.</i>
Uses of Convex Mirrors	<i>Mirror at concealed entrances, mirror to deter shoplifters, and car door mirrors. These mirrors give a wider field of view.</i>
Magnification	<i>Is the number of times the image is bigger (or smaller) than the object.</i>