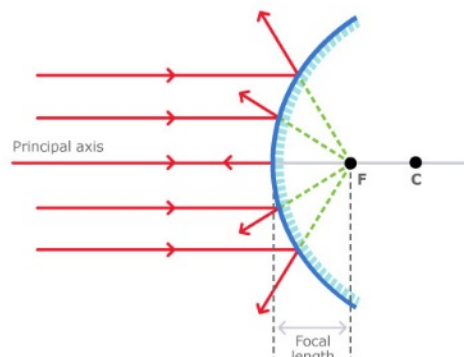


**Science 8**  
**Unit 3: OPTICS**  
**Topic 9: Reflection In A Convex Mirror**



Student Name: \_\_\_\_\_

Convex Mirror refers to a reflective surface that curves outwards, like the outside of a spoon. Also referred to as a diverging mirror.



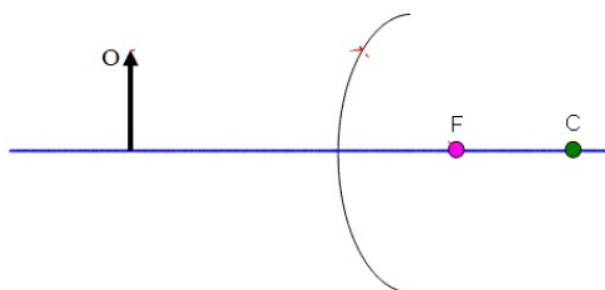
Examples of where convex mirrors are used:

- Safety mirrors on busses
- Mirrors in stores
- disco balls

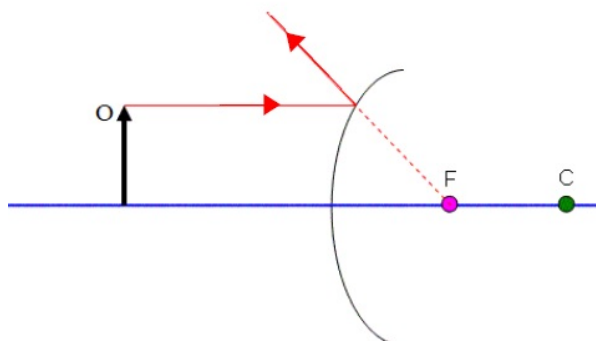
The same set of rules for concave mirrors apply to convex mirrors, it's just that things will look a bit different since convex mirrors have their focal point and centre behind the mirror.

Find the image produced in convex mirrors.

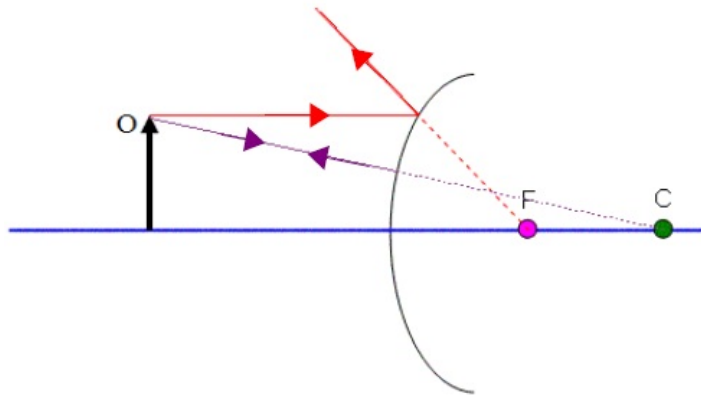
1. Draw Principal axis on blank paper.
2. Set Ray box to three rays and obtain convex mirror.
3. Place mirror on Principal Axis and shine rays at mirror parallel to the principal axis.
4. Locate focal point along the principal axis and mark with dot on paper. Label this point F.
5. Measure the focal length of the mirror with the ruler.
6. Measure  $2F$  and mark on the principal axis.
7. Draw an arrow 1 cm high object as show in the diagram below and label it O.



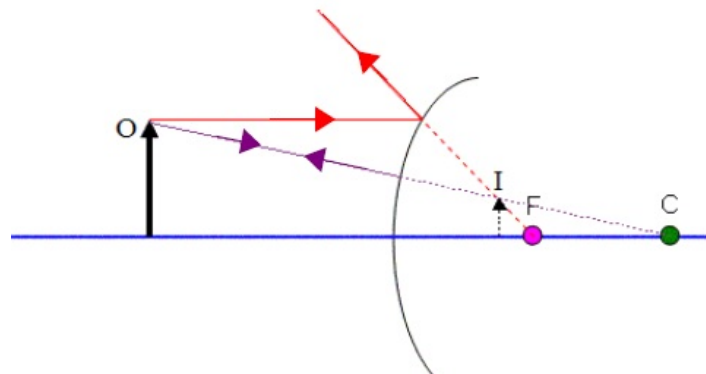
8. Draw the ray coming off of the tip of the object parallel to the principle axis as shown below. When it hits the mirror, it bounces off so that a dotted line drawn behind the mirror will pass through the focal point



9. Draw a ray that comes off the tip of the object aiming straight for the centre. Where it hits the mirror it will bounce back, but draw a dotted line behind the mirror to show where the ray would have gone.



10. Notice that there is now a place where the two dotted lines hit behind the convex mirror. This is where the image will appear.



Example :

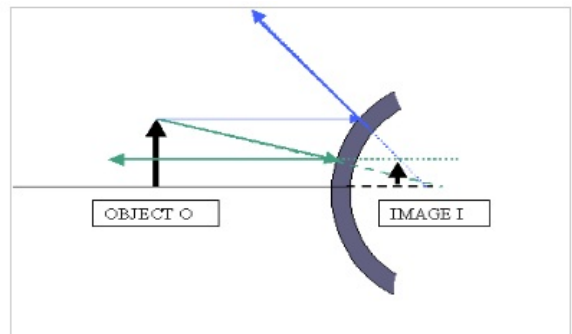
	Characteristics of Image
S (size)	
P (position)	
O (orientation)	
T (type)	

**PART A: MULTIPLE CHOICE.**

Instruction: Circle the correct answer below each question. Also, transfer your answers to the bubble sheet provided.

1. What is another name for a convex mirror?  
(A) Diverging mirror  
(B) Concave mirror  
(C) Flat mirror  
(D) Plane mirror
2. Security mirrors, bus mirrors, and disco globes are all examples of practical applications for these type mirrors ...  
(A) Concave mirror  
(B) Convex mirror  
(C) Flat mirror  
(D) Plane mirror

3. What type mirror is this?  
(A) Concave mirror  
(B) Convex mirror  
(C) Flat mirror  
(D) Plane mirror

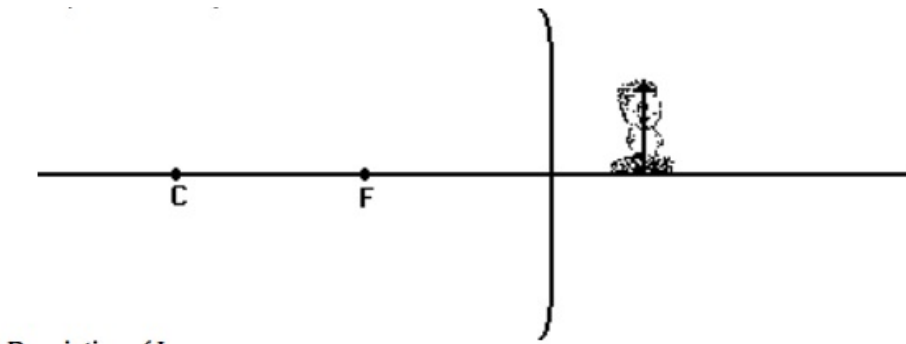


4. A \_\_\_\_\_ mirror is like the side mirrors on a car. "Objects are closer than they appear".  
(A) Convex  
(B) Concave  
(C) Parabolic  
(D) Plane
5. Light that reflects off a convex mirror  
(A) Scatters in all directions  
(B) Reflects directly back to the object  
(C) Diverges  
(D) Converges
5. A convex mirror will always produce an image that is \_\_\_\_\_.  
(A) Real , upside down , smaller  
(B) Virtual , upright , same size  
(C) Virtual , upright , smaller  
(D) Virtual , upright ,larger
6. Which mirror has a wider field of view?  
(A) Convex mirror  
(B) Concave mirror  
(C) Plane mirror  
(D) Cylindrical mirror

7. Which type of mirror causes light rays to reflect away from each other?
- (A) Concave  
 (B) Converging  
 (C) Convex  
 (D) Plane
8. No matter how far is the object from the mirror, the image of the object appears erect. The mirror is \_\_\_\_\_.
- (A) Concave  
 (B) Convex  
 (C) Either concave or convex  
 (D) None of these

**PART B: WRITTEN RESPONSE**

1. For the following mirror, construct a ray diagram. Then describe the Location of the image, Orientation (upright or inverted) of the image, the relative Size of the image (larger or smaller than object), and the Type of image (real or virtual).



2. How does the focal point of a convex mirror differ from that of a concave mirror?

---



---

3. How does a convex mirror differ from a concave mirror with respect to the appearances of the mirrors?

---



---

4. Describe one common use for convex mirrors

---



---