



Srini Science Mind
Abdul Kalam Physical Science Group



NEW

9th class

PHYSICAL SCIENCE

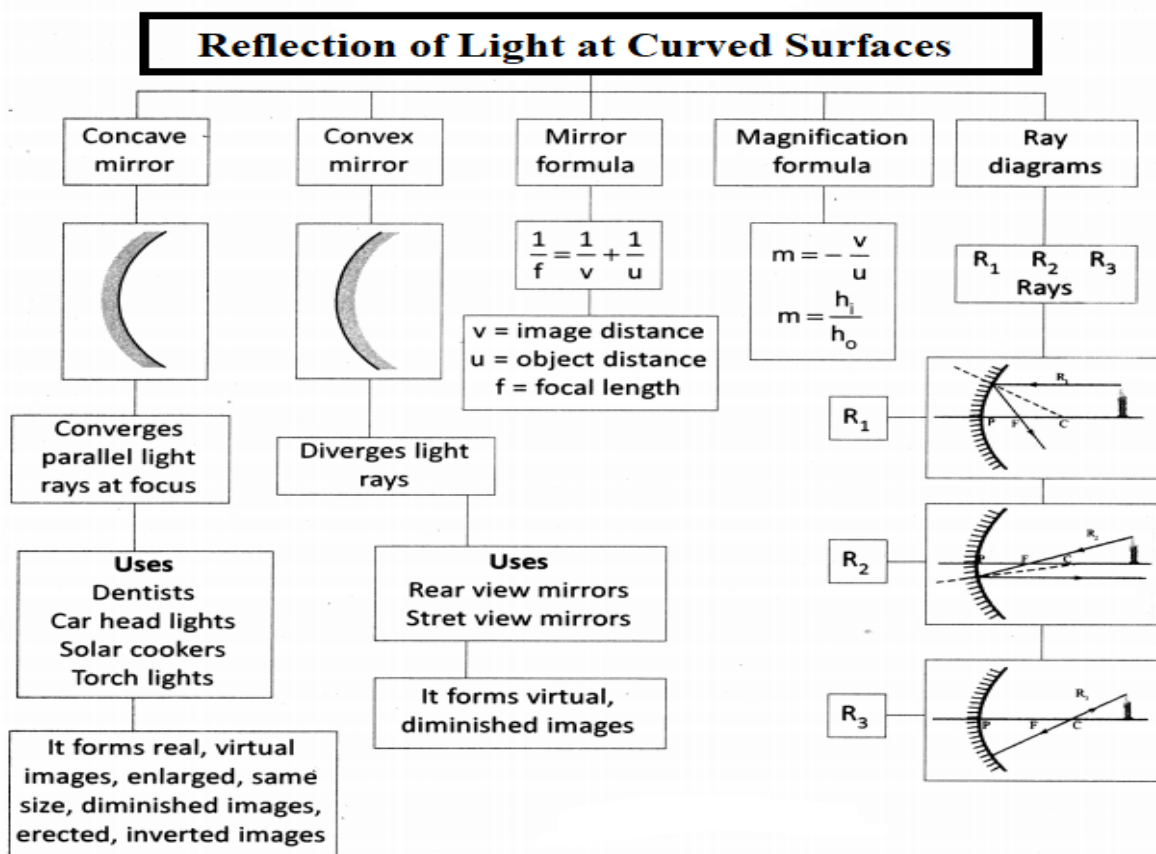
MODEL LESSON PLAN



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TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students will practice the principles of light involved in making a solar cooker.
2. Students will acquire skills in using convex and concave mirrors in everyday life.
3. Students will be able to assess the focal length of mirrors used.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and conduct an activity on a rectangular shaped acrylic sheet act as plane, concave and convex reflecting surfaces.	1. Students observe the nature of reflecting light rays on plane, concave and convex surfaces.	1. Students give conclusion of the activities.	1. Which surface act as Converging?

2. Explain and conduct an activity on diverging and parallel rays with help of a thermocole block, pins and candle.	2. Students conduct this activity in their own way	2. Students give examples of natural light sources.	2. Which surface act as Diverging?
3. Discussion and conduct activity on the focal length of a concave mirror.	3. Students conduct an activity and	3. Students find the focal length of a given concave mirror.	3. What is the focal length of the mirror?
4. Explain and conduct an experiment on the finding the normal to a curved surface.	4. Students draw the normal to a given curved surface.	4. Students complete the homework.	4. What is center of curvature of the mirror?
5. Explain the terms related to the spherical mirrors.	5. Students collect information on terms related to the spherical mirror.	5. Students give a reason, Why $R=2f$?	5. Define a) Focal length b) Principal axis
6. Discussion and conduct experiment on the types of images formed by a concave mirror and measuring the object distance and image distance.	6. Group discussion on the nature of images formed by the spherical mirrors	6. Students give a reason, Why does a concave mirror forms an inverted image?	6. What type of image is formed by the concave?
7. Explain the position of objects and images in front of a concave mirror.	7. Students collect information on the nature of images and position of images formed by a concave mirror.	7. Students fill the tables based on the positions of objects and images of a concave mirror.	7. Are real images always inverted?
8. Explain and demonstrate the ray diagrams of the concave mirror.	8. Students draw the ray diagrams of concave mirrors.	8. Students complete the homework.	8. Why concave mirror is used in headlights of car?
9. Explain and demonstrate the ray diagrams of the convex mirror.	9. Students draw the ray diagrams of convex mirrors.	9. Students give a reason. Why convex mirror forms a virtual image?	9. Where do we use Convex mirror in our daily life?
10. Explain the sign convention for the parameters related to the mirror equations.	10. Students derive the magnification of the mirror.	10. Students write the rules for the sign convention.	10. Write the mirror formula?
11. Explain the problems and solutions on mirror formula and magnification.	11. Students solved the problems on mirror formula	11. Students complete the homework.	11. The magnification produced by a convex mirror is -1. Do you agree it?
12. Discussion and conduct experiment on making of solar cooker.	12. Students explain the making of solar cooker.	12. Students making a solar cooker in their own way	12. Which fuel is used in solar cooker?

Check For Understanding Questions

1. Factual:

1. Which mirror has the greatest focal length?
2. Does a concave mirror form image at focus in all situations?
3. Why is magnification positive for convex mirror?

2. Open Ended/Critical Thinking:

1. What happens if light rays parallel to the principal axis fall on the concave mirror and draw ray diagram?
2. Why is mirror formula applicable for plane mirror?
3. Why concave lens are used in solar cooker?

3. Student Practice Questions & Activities:

1. State the differences between convex and concave mirrors.
2. How do you find the focal length of a concave mirror in the lab?
3. Make a solar heater/cooker and explain the process of making.
4. Why do we prefer a convex mirror as a rear-view mirror for the vehicles?
5. Write the rules for sign convention.

TLM's (Digital + Print)

1. Used prepared Quiz paper.
2. Utilized digital classroom.
3. Provide video links
QR codes,
DIKSHA App
4. YouTube video links

Assessment:

1. Fill the table

Position of the object	Position of the image	Enlarged/Diminished/Same size	Inverted/Erect	Real/Virtual
Between mirror & F				
At F				
Between F & C				
At C				
Beyond C				

2. Collect information about the history of spherical mirrors in human civilization. Display it in your classroom.
3. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position and position and nature of the image.
4. Draw suitable rays by which we can guess the position of the image formed by a concave mirror.

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS