

Angles of Reflection

Aim: To observe the relationship between angles of incidence and reflection.

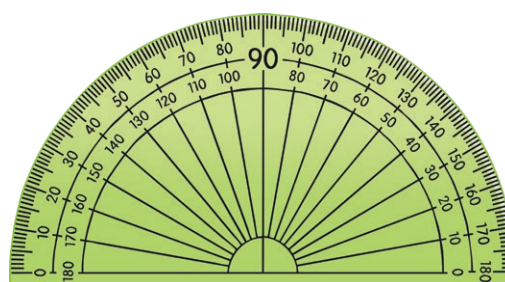
Equipment:

- ray box
- slit plate
- mirror
- lab pack (if needed)
- protractor
- sharp pencil
- ruler
- activity sheet

Safety Information

Filament bulb – risk of burns

Handle with extra care. Rinse any burns under cold running water for 10 minutes and inform the teacher immediately.



Method:

Step 1: On the activity sheet, set up the equipment as shown in the diagram.

Step 2: Place the mirror onto the indicated space on the sheet.

Step 3: Direct the ray of light along the angle indicated by the letter A.

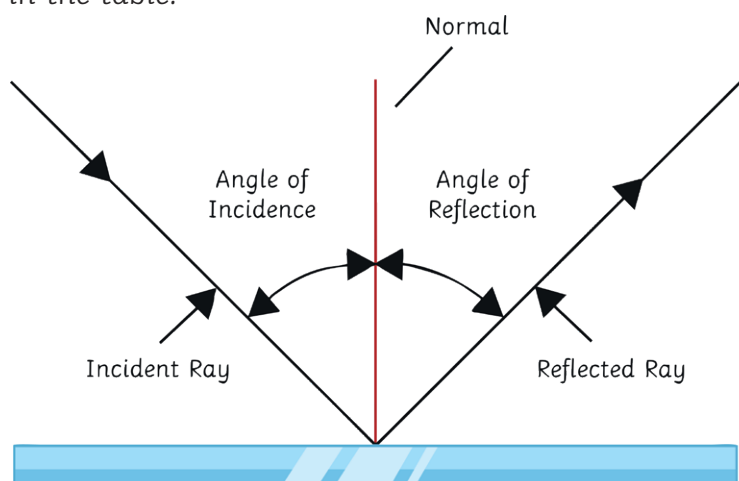
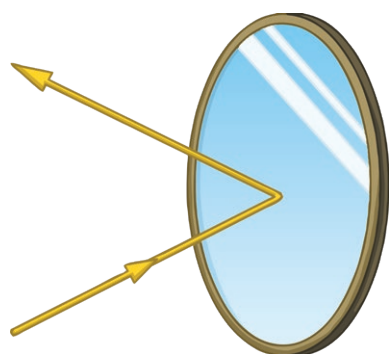
Step 4: Calculate the angle of incidence.

Step 5: On the other side of the sheet, draw a line where the ray of light emerges and label this with the letter A.

Step 6: Repeat steps 3 and 4 for each of the other angles B to H.

Step 7: Remove the mirror and position the protractor over the activity sheet.

Step 8: Measure the angle between the normal and each of the reflection angles you plotted and labelled A to H in steps 3 to 5. Record your findings in the table.



Results

	Angle of Incidence	Angle of Reflection
A	80°	
B	70°	
C	60°	
D	50°	
E	40°	
F	30°	
G	20°	
H	10°	

Questions:

- Describe the relationship between the angle of incidence and the angle of reflection.

- If the incidence ray was along the normal (perpendicular to the mirror), what would the angle of reflection be?

- Look at the ray diagram below. What is the angle of reflection? (Diagram not to scale).

