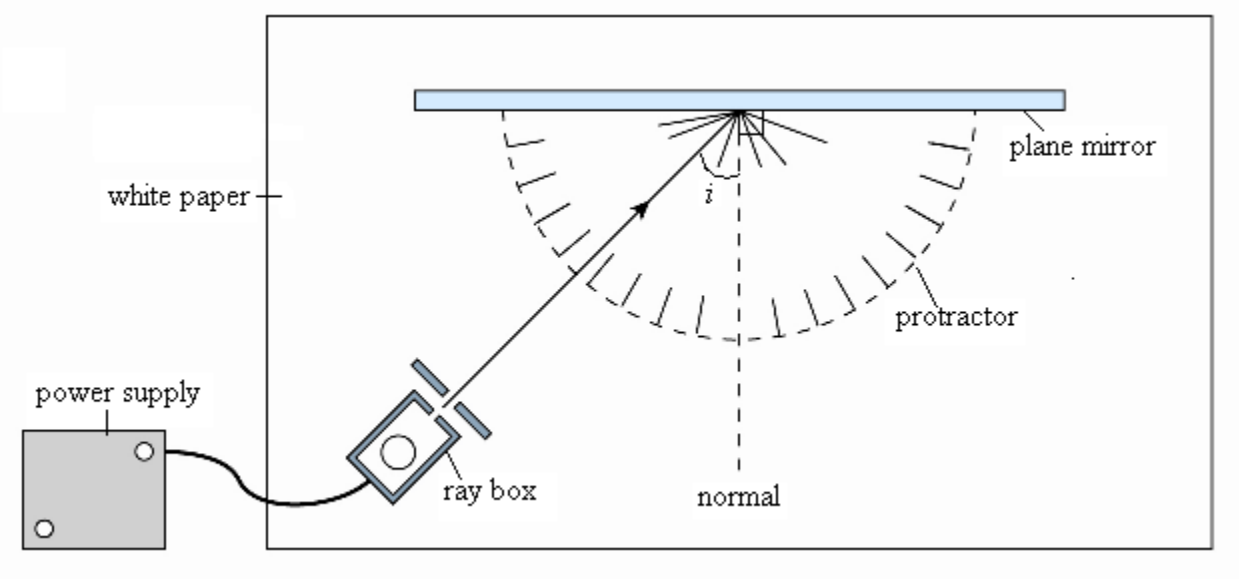
CHAPTER 6: WAVES

Extra Activity

Reflection of Light Waves

Aim : To study the reflection of light
Materials: Plasticine, pencil, plastic ruler, large sheet of white paper and protractor
Apparatus: Plane mirror, ray box or light source, power supply
Procedure:



1. The apparatus is set up as shown in the diagram above.
2. The incident light beam is adjusted until the angle of incidence $i = 20^0$.
3. By using a protractor and pencil, the direction of the reflected beam is traced out and the angle of reflection r is measured.
4. Procedures (2) and (3) are repeated using $i = 30^0$, 40^0 and 50^0.

Results:

Angle of incidence, *i*	Angle of reflection, *r*
20	20
30	30
40	40
50	50

Discussion :

From the results in the above table, it is found that light obeys the law of reflection, i.e, $\angle i = \angle r$.

Extra Info

Characteristics of Reflection

During reflection of a wave, the following characteristics are observed.

Wave properties	Changes during reflection
1. Wave direction	1. The direction of travel of a wave changes according to the law of reflection, i.e. $\angle i = \angle r$
2. Wavelength, λ	2. Unchanged
3. Frequency, f	3. Unchanged
4. Wave speed	4. Unchanged
5. Wave velocity	5. Velocity changes as direction of travel changes