

WJEC England Physics GCSE

SP6.2: Refraction

Practical Flashcards

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Outline the basic steps of the practical.



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1. Draw around the block on a piece of paper, remove the block and then draw a normal to one of the sides.
2. Draw a guide line of incidence at a measured angle.
3. Place the block on the page and shine the ray light along the line.
4. Mark the incoming, and any outgoing rays of light with crosses.
5. Turn lights on and measure the angles of reflection and refraction.
6. Repeat for other angles of incidence.

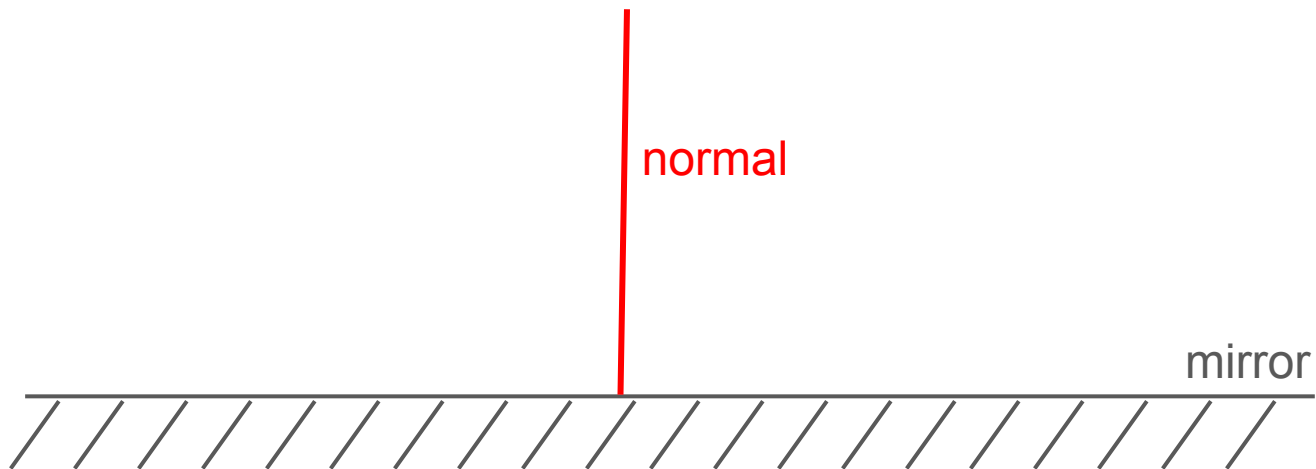


What is the normal?



What is the normal?

Any line perpendicular to the surface of the mirror.



What tool should be used to help draw the normal line on the sheet of a paper?



What tool should be used to help draw the normal line on the sheet of a paper?

A set square or protractor to ensure that the angle is at a right angle to the main line.



What is the angle of incidence?



What is the angle of incidence?

The angle (relative to the normal) at which light is incident on (hits) the mirror.



What is the angle of reflection?



What is the angle of reflection?

The angle (relative to the normal) at which light leaves/moves away from the mirror.



What is the purpose of drawing guide lines for the incident rays?



What is the purpose of drawing guide lines for the incident rays?

You can shine the ray at the exact angles you want without having to measure angles in the low light. It also reduces the length of time that the ray box needs to be on, so improves safety (the box will not get so hot).



What precautions should be taken to use the ray box safely?



What precautions should be taken to use the ray box safely?

1. Do not touch any metal parts since the box gets very hot when in operation.
2. Switch off when not in use to prevent overheating.



What conditions are needed for this experiment?



What conditions are needed for this experiment?

Low lighting is needed so that the rays are visible.



What safety precaution should be taken when working in a darkened lab?



What safety precaution should be taken when working in a darkened lab?

All bags and equipment should be moved out of the way to reduce the likelihood of tripping due to poor visibility.



What two angles should you measure after you have marked the light rays on the paper? How?



What two angles should you measure after you have marked the light rays on the paper? How?

1. Angle of reflection.
2. Angle of refraction.

Using a protractor.



How do you draw the refracted ray?



How do you draw the refracted ray?

Connect the point where the ray entered the block and the point where the ray left the block on the other side with a straight line.



What should you find about the angle of incidence and the angle of reflection?



What should you find about the angle of incidence and the angle of reflection?

The angle of incidence should be the same as the angle of reflection.



What should you find about the angle of refraction for different materials?



What should you find about the angle of refraction for different materials?

It should be different for each material depending on its refractive index.



For light passing from air into glass, how should the angle of refraction compare with the angle of incidence?



For light passing from air into glass, how should the angle of refraction compare with the angle of incidence?

The angle of refraction should be less than the angle of incidence.



For light passing from glass into air, how should the angle of refraction compare with the angle of incidence?



For light passing from glass into air, how should the angle of refraction compare with the angle of incidence?

The angle of refraction should be greater than the angle of incidence.

