OCR A Physics GCSE

5.3 - Wave Interactions

Flashcards

What wave phenomenon is used by lenses to form an image?

What wave phenomenon is used by lenses to form an image?

Refraction.

How does a convex lens form an image?

How does a convex lens form an image?

Parallel rays of light are refracted and brought together at a point known as the principal focus.

What is meant by the focal length of a lens?

What is meant by the focal length of a lens?

The distance from the lens to the principal focus.

What is the difference between the image produced by a convex and a concave lens?

What is the difference between the image produced by a convex and a concave lens?

- Convex lenses can produce real or virtual images.
- Concave lenses can only produce virtual images.

What is a virtual image?

What is a virtual image?

An image produced on the same side of the lens as the object.

What is a real image?

What is a real image?

- An image produced on the opposite side of the lens from the object.
- A real image can be formed on a screen as the light rays cross after the lens.

What kind of image is produced by a plane mirror?

What kind of image is produced by a plane mirror?

A virtual image.

Why does magnification not have a unit?

Why does magnification not have a unit?

- It is the ratio between image height and object height.
- Ratios do not require units.

What symbol is used to represent a convex lens in a ray diagram?

What symbol is used to represent a convex lens in a ray diagram?

What symbol is used to represent a concave lens in a ray diagram?

What symbol is used to represent a concave lens in a ray diagram?

How does a red colour filter work?

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- A red filter absorbs all wavelengths of light except the red range of the spectrum.
- This means only red light passes through the filter.

What determines the colour of an opaque object?

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- Different objects reflect different wavelengths of light by different amounts.
- The wavelengths that are most strongly reflected determine the colour.

What happens to the wavelengths of light that aren't reflected by an opaque object?

What happens to the wavelengths of light that aren't reflected by an opaque object?

Any wavelengths that aren't reflected are absorbed by the object.

What colour does an object appear if all wavelengths are reflected by equal amounts?

What colour does an object appear if all wavelengths are reflected by equal amounts?

White.

What colour does an object appear if all wavelengths are absorbed?

What colour does an object appear if all wavelengths are absorbed?

Black.

What is meant by the term ‘specular reflection’?

What is meant by the term ‘specular reflection’?

Reflection from a smooth surface in a single direction.

What is meant by the term ‘diffuse reflection’?

What is meant by the term ‘diffuse reflection’?

Reflection from a rough surface which causes scattering.

What property of waves in different mediums causes refraction? (Higher)

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- Velocity.
- Wave speed is slower in denser materials, causing refraction.

In which direction (relative to the normal) do waves refract when entering a denser medium? (Higher)

In which direction (relative to the normal) do waves refract when entering a denser medium? (Higher)

- They bend towards the normal.
- The angle of refraction is less than the angle of incidence.