According to the concept of wave-particle duality in quantum mechanics light exhibits both particle and wave nature, depending upon the circumstances. Phenomena like diffraction, polarisation and interference could be explained by considering light as a wave. The phenomenon of the photoelectric effect is explained by assuming that light consists of particles called photons.

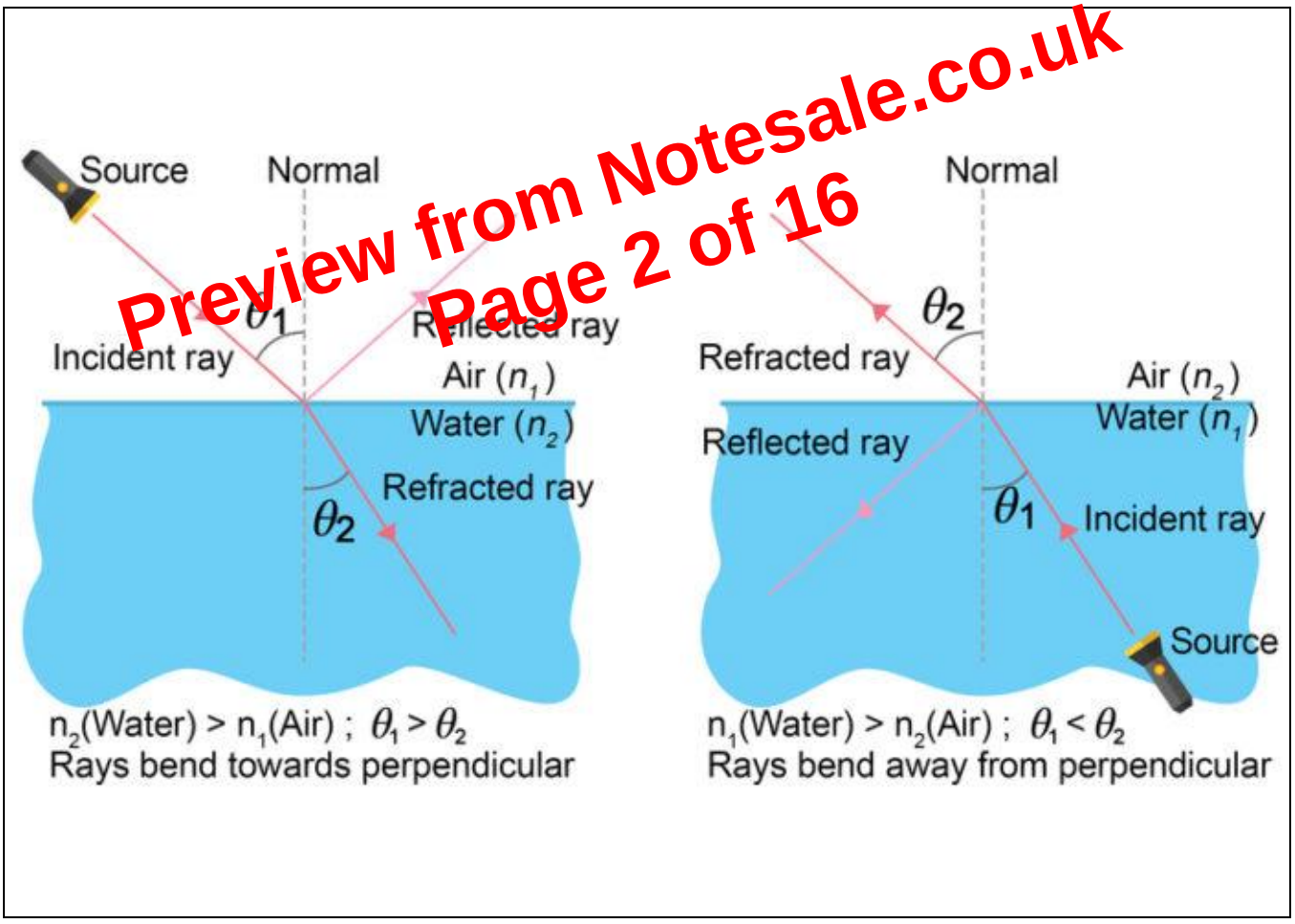
Laws of Reflection

Light incident on a surface separating two media

When light travels from one medium to another medium it either:

- gets absorbed (absorption)
- bounces back (reflection)
- passes through or bends (refraction)

When light is incident on a plane mirror, most of it gets reflected, and some of it gets absorbed in the medium.



Characteristics of light

- Concave lens: Diverging lens
- Convex lens: Converging lens

Rules of ray diagram for representation of images formed

- A ray of light parallel to the principal axis passes/appears to pass through the focus.
- A ray passing through the optical centre undergoes zero deviation.

Image formation by spherical lenses

The following table shows image formation by a convex lens.

Position of the object	Position of the image	Relative size of the image	Nature of the image
At infinity	At focus F_2	Highly diminished, point-sized	Real and inverted
Beyond $2F_1$	Between F_2 and $2F_2$	Diminished	Real and inverted
At $2F_1$	At $2F_2$	Same size	Real and inverted
Between F_1 and $2F_1$	Beyond $2F_2$	Enlarged	Real and inverted
At focus F_1	At infinity	Infinitely large or highly enlarged	Real and inverted
Between focus F_1 and optical centre	On the same side of the lens as the object	Enlarged	Virtual and erect

Lens Formula, Magnification and Power of Lens

Lens formula and magnification

Lens formula: $1/v = 1/u = 1/f$, gives the relationship between the object distance (u), image distance (v), and the focal length (f) of a spherical lens.

To know more about Lens formula and magnification, visit here.

Uses of spherical lens

Applications such as visual aids: spectacles, binoculars, magnifying lenses, telescopes.

Power of a Lens

Power of a lens is the reciprocal of its focal length i.e 1/f (in metre). The SI unit of power of a lens is dioptre (D).