

Normal	<ul style="list-style-type: none"> •An imaginary (or real) line drawn perpendicular to a surface/boundary. •Used to give a point to measure angles from. 	Colour	<ul style="list-style-type: none"> •Light is made up of a spectrum of colours that combine to appear as white light •Each part of the spectrum has a different wavelength. •Red light has the longest wavelength, violet light has the shortest wavelength •The colour an object appears depends on the pigments it contains and on the incident wavelengths of light it absorbs and reflects. •A yellow banana in white light looks yellow because the pigments on the surface of the skin absorb all wavelengths of light except yellow, which is reflected. In blue light it would look black as all of the blue light is absorbed •White objects don't contain pigments, so all wavelengths of light are reflected. •Black objects absorb all wavelengths of visible light 		
Law of Reflection	<ul style="list-style-type: none"> •The Law of Reflection states that the angle of incidence is equal to the angle of reflection • $i = r$ •Angle of incidence is the angle between the normal and the incident ray •The angle of reflection is the angle between the normal and the reflected ray. 		Filters	<ul style="list-style-type: none"> •Filters only allow certain wavelengths of light to be transmitted through them. The other wavelengths of visible light are absorbed. •E.g. A blue filter absorbs all wavelengths of visible light except for those in the blue part of the spectrum. •A red object viewed through the blue filter will look black as the blue filter absorbs the red light being reflected from the book. 	
Diffuse Reflection	<ul style="list-style-type: none"> •Reflection from a rough surface •The light rays are scattered in all different directions so an image isn't formed 			Translucent	<ul style="list-style-type: none"> •A material that lets light pass through (transmit), but the light is scattered or refracted inside it. •This is due to there being lots of internal boundaries that change the direction of the light many times.
Specular Reflection	<ul style="list-style-type: none"> •Reflection from a smooth shiny surface •The rays of light reflected in one direction and are parallel so an image is formed. •No scattering 			Transparent	<ul style="list-style-type: none"> •A material that transmits light completely. The light isn't scattered or refract the light inside the material.
Virtual Image	<ul style="list-style-type: none"> •An image seen in a lens or mirror from which light rays appear to come after being refracted by a lens or reflected by a mirror. •Formed by a convex lens if the object is nearer than the principal focus. 				
Real Image	<ul style="list-style-type: none"> •An image formed by a lens that can be projected onto a screen. •Formed by a convex lens if the object is further away than the principal focus 				
Refraction	<ul style="list-style-type: none"> •The change in direction of waves when they travel across a boundary from one medium to another. •When light travels from a less dense medium to a more dense medium, it is refracted towards the normal •When light travels from a more dense medium to a less dense medium, it is refracted away from the normal. 				

Lens	<ul style="list-style-type: none"> •Refracts light to form an image •A ray diagram is used to show how a lens forms an image •Can be convex or concave
Convex lens	<ul style="list-style-type: none"> •Causes parallel rays of light to converge to a point called the principal focus (or focal point) •The focal point (or principal focus) of a convex lens is the point where the rays meet (converge) •Also called a converging lens •Images formed are either real or virtual •A real image will be formed if the object is further away than the focal point •A virtual image will be formed if the object is nearer than the focal point. The lens is acting like a magnifying glass.
Concave lens	<ul style="list-style-type: none"> •Causes parallel rays to diverge (spread out) •The focal point of a concave lens is where the rays appear to come from •Images formed are always virtual.
Focal length	<ul style="list-style-type: none"> •The distance from the lens to the focal point
Magnification	<ul style="list-style-type: none"> •Lenses magnify objects •Magnification = image height ÷ object height •It is a ratio so it doesn't have any units. •Both heights must be measured in the same unit, i.e. both in cm or both in mm.