**Energy Transfer**

**Light**

**Key words Summary**

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| **Topic** | **Word** | **Meaning** |
| Sources of Light | Emit | To give or send out light |
|  | Light Year | The distance that light travels in a vacuum in one year (5.88 trillion miles) |
|  | Luminous | Emitting light, especially emitting self-generated light |
|  | Ray | A thin line or narrow beam of light |
|  | Reflect | To throw or bend back light from a surface. |
|  | Screen | A surface on which a picture is projected for viewing |
|  | Shadow | An image cast by an object blocking rays of illumination. |
|  | Source | One that causes or creates light |
|  | Straight line | A line traced travelling in a constant direction |
|  | Transparent | Permitting the uninterrupted passage of light |
|  | X-Ray | Electromagnetic radiation of short wavelength |
| Light and Plane Mirrors | Angle of Incidence | The angle that a line makes with the normal to the surface at the point of incidence |
|  | Endoscope | An instrument for examining visually the interior of organs such as the colon, bladder, or stomach. |
|  | Fibre optic | Light transmission through very fine, flexible glass or plastic fibres |
|  | Image | An optically formed reproduction of an object, such as one formed by a lens or mirror |
|  | Law of Reflection | That the direction of incoming light and the direction of outgoing light reflected make the same angle |
|  | Mirror | An object that reflects light |
|  | Periscope | An instrument for observation from a concealed position by the use of mirrors. |
| Curved Mirrors | Concave | Curving inwards |
|  | Converging | To tend toward or approach an intersecting point |
|  | Convex | Curving outwards |
|  | Diverging | To go or extend in different directions from a common point |
|  | Focus | A point at which rays of light converge or from which they appear to diverge, as after refraction or reflection in an optical system |
|  | Virtual Image | An image from which rays of reflected or refracted light appear to diverge |
|  | Focal Length | The distance from the surface of a lens or mirror to its focal point. |
| Total Internal Reflection | Angle of Incidence | The angle that a line or beam of light makes with the normal to the surface at the point of incidence |
|  | Critical Angle | The smallest angle of incidence at which a light ray passing from one medium to another less refractive medium can be totally reflected from the boundary between the two. |
|  | Optical Cable | A cable containing multiple optical fibres |
| Refraction | Concave | Curving inwards |
|  | Convex | Curving outwards |
|  | Dense | Permitting little light to pass through |
|  | Focus | A point at which rays of light converge or from which they appear to diverge, as after refraction or reflection in an optical system |
|  | Normal | Being at right angles; perpendicular |
|  | Lens | A piece of glass or other transparent material, used to converge or diverge transmitted light and form optical images |
|  | Refraction | The turning or bending of a light, when it passes from one medium into another of different optical density. |
|  | Transparent | Permitting the uninterrupted passage of light; |
| Isaac Newton ‘The Optickian’ | Dispersion | Separation of visible light into colours by refraction or diffraction |
|  | Electromagnetic Spectrum | The entire continuous spectrum of all forms of electromagnetic radiation, from gamma rays to long radio waves. |
|  | Optics | The branch of physics that deals with light and vision |
|  | Refract | To deflect light from a straight path by refraction. |
|  | Spectrum | The distribution of colours produced when white light is dispersed by a prism |
|  | Telescope | An arrangement of lenses or mirrors or both that gathers visible light, permitting direct observation or photographic recording of distant objects. |
|  | Vacuum | A space from which (almost) all air or other gas has been removed |
|  | Wavelength | The distance between one peak or crest of a wave of light |
|  | White Light | Light that is a mixture of wavelengths of various colours and is perceived as colourless, as sunlight |
| Colour | Absorb | To take in |
|  | Colour | The quality of an object or substance with respect to light reflected by it |
|  | Colour Filter | A thin layer of coloured gelatine, glass, etc., that transmits light of certain colours |
|  | Reflect | To throw or bend back light from a surface. |
|  | Shade | Relative darkness produced by the blocking out of light |
|  | Spectrum | The distribution of colours produced when white light is dispersed by a prism |
|  | Transmit | To allow the passage of light |
| Using Colour | Camouflage | Making objects to appear to be part of the natural surroundings. |
|  | Colour | The quality of an object or substance with respect to light reflected by it |
|  | Primary | Any of three colours from which all others can be obtained by mixing |
|  | Reflection | The image produced by a mirror |
|  | Secondary | A colour formed by mixing two primary colours |
| Seeing the Light | Compound Eye | To have more than one lens |
|  | Cornea | The tough transparent membrane of the outer layer of the eyeball that covers the iris and the pupil. |
|  | Eye | An organ of vision or of light sensitivity. |
|  | Iris | Circular diaphragm forming the coloured portion of the eye and containing an opening |
|  | Optic Nerve | The Nerve that arise from the retina and carry visual information to the brain. |
|  | Lens | A piece of glass or other transparent material, used to converge or diverge transmitted light and form optical images |
|  | Reflect | To throw or bend back light from a surface. |
|  | Retina | The light-sensitive membrane that lines the inside of the back of the eyeball and connects to the brain by the optic nerve |