Einstein

Einstein | Light consists of tiny particles of energy that travel as waves. | Newton | Light consists of tiny particles. | Euclid | Vision results from streamers or filaments emitted by the eye making contact with an object. | Huygens | Light is a wave. | Dual Nature | In modern theory, Light has a dual nature; part particle and part wave. | R. M. I. V. U. X. G. | Radio waves, microwaves, infrared waves, visible light, ultraviolet rays, gamma rays. | Energy in an Electromagnetic Wave | Energy is part electric and part magnetic. | DO NOT Pass through Light | Infrared and Ultra-violet light do not pass through glass while visible light does. | Resonance on Glass | Electron in glass have a natural frequency in ultra-violet range. | Atmosphere Transparency | Our atmosphere is transparent to visible light and some infrared, but almost opaque to ultra-violet light. | Clouds | Are semi-transparent to ultraviolet. | Observation from the Umbra during a Solar Eclipse | Brief darkness during the day. | Observation from the Penumbra during a Solar Eclipse | A partial eclipse in which the sunlight is dimmed. | Polarized Object | Vibrating Electron | Un-Polarized Object | Incandescent bulb, the sun, a candle flame. | 1600s | The idea that light consists of tiny particles was first proposed. | Roemer | His measurement of discrepancies in the position of Jupiter's moon Io was the first demonstration showing that light travels at a finite speed. | Receiving Material Response | When light is incident upon it depends on the frequency of the light and the natural frequency of the electron in the matter/ | Electron's Response | Are able to respond to the ultra-fast vibration of visible light because the electrons have small enough mass to vibrate fast. | Structure of glass | Infrared waves vibrate only the electrons in glass. | Transparent Materials | Absorb light energy and re-emit it so that it is passed on to neighboring atoms. | Opaque

Materials | An coordinated vibrations given by light to the atoms and molecules are turned into random kinetic energy, or internal energy. | Defined Edges | Few shadows have clearly defined edges. | Can | Shadows can occur when light is bent while passing through a transparent material. | Combination of Views | You see from both eyes which gives depth to what you see. | High Frequency and Short Wavelength | Ultra-violet has a higher frequency than violet light and has a shorter wavelength. |