

Directions: Underneath each diagram, write the letter or term from the right hand column. Use each term only once.

The bending of light as it travels at an angle from one medium to another.

1. Refraction

The separation of a wave into its component parts according to a given characteristic.

2. Dispersion

- A. Dispersion
- B. Iridescence
- C. Reflection
- D. Incoherence
- E. Interference
- F. Refraction
- G. Diffraction

The phenomenon that occurs when two waves in the same medium intersect.

3. Interference

A change in direction of a light ray when it meets an obstacle where the incoming ray and the outgoing ray are on the same side of the obstacle.

4. Reflection

- H. Total Internal Reflection

The bending and spreading of a wave when it passes through an opening.

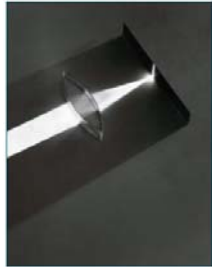
5. Diffraction

An effect that occurs when light encounters a boundary between a medium with a higher index of refraction and one with a lower index of refraction.

6. Total Internal Reflection

Newton's Particle Theory of Light

- Light travels in **particles** or "corpuscles"



- Particles travel in **straight** lines with **maximum** velocity and have **kinetic** energy
- Light **does not need** a medium or ether to travel in
- Explains **diffraction** and **reflection** but NOT **refraction**

Huygens' principle (1678)

- All points on a wave can be thought of as new sources of **spherical waves**

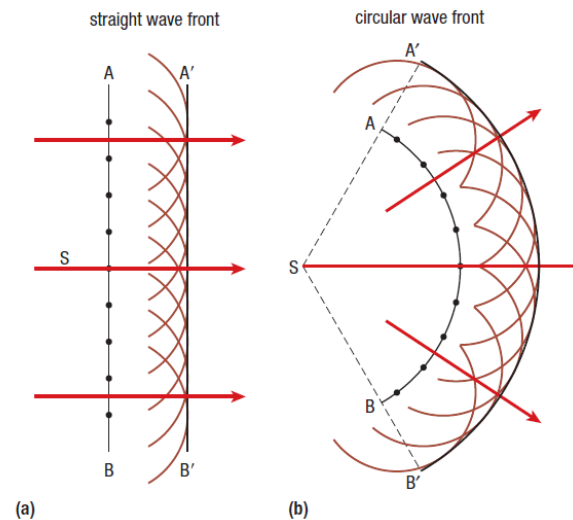


Figure 1 (a) In Huygens' construction of a straight wave front, the wave front is a straight line even though it is defined by circular waves. (b) In Huygens' construction of a spherical wave, the new wave front is drawn tangent to the circular wavelets radiating from the point sources on the original wave front.

- Light travels **through** the ether
- Explained **reflection**, **refraction** and **diffraction**