Corpuscular Theory

Newton's corpuscular theory was based on the arguments that the refraction of light and the reflection's geometric aspect could be clarified only if light consisted of particles called corpuscles. According to Newton, every light source emits elastic, minute, massless and rigid particles that travel at high speed (PhysicsHigh, 2020). However, waves do not tend to move in a straight line. Therefore, Newton aimed at disapproving Huygens's theory which proposed that waves made up light.

**Newton’s Gummy Sphere Analogy**

Even descriptions that represent things by use of actual real numbers involves radical idealizations. The Newton analogy that the earth cannot be a sphere resonated that earth cannot be perfectly spherical because at first, a gravitational force exterior the spherical shell has the same mass entirely as the mass of the object at the center of a spherical shaped object. Secondly, with the similar sphere, the gravitational force inside a spherical shell is zero (0).

**Ways the Corpuscular Theory of Light Explains Reflection and Refraction**

Newton used corpuscular theory to explain the refraction and reflection of light. According to Newton’s corpuscular theory, a luminous body produces tiny light and elastic particles in all directions (PhysicsHigh, 2020). When the emitted particles fall, there is the production of the sensation of vision on the eye's retina. Notably, the corpuscular theory can explain various phenomena based on light like refraction and reflection. Newton explained reflection by considering that corpuscles falling on a smooth surface would alternatively bounce back like rubber balls while hitting a wall. Consecutively, the corpuscular theory explains that when the particles or corpuscles hit the reflecting surface, they are reflected such that the angle of reflection equals the angle of incidence. Again, Newton extended the corpuscular theory in explaining refraction by formulating that a light that enters a denser medium would get varying levels of attractive forces. As such, the differing levels of attractive forces are due to the denser medium's capability having more particles. Consecutively, this led to bending away or towards the normal. When the corpuscular theory was used to explain refraction, most scientists found that the velocity of light would be more in a rarer medium.

**How Corpuscular Theory explains refraction**

Diagram

Description automatically generated

Reference

PhysicsHigh (2020). Newton vs Huygens: corpuscular vs wave models of light explained and refuted. Retrieved from <https://www.youtube.com/watch?v=OQ6kWit51fA&feature=youtu.be>