Name _____

Reflecting on Reflection: Mirrors and Shiny Surfaces Unveiled

Short Answer Key

1. The Law of Reflection states that the angle at which light approaches a surface (angle of incidence) is equal to the angle at which it leaves the surface (angle of reflection). An example is when you throw a ball against a wall, and it bounces back at the same angle it hit the wall.
2. Smooth reflection occurs on polished surfaces like mirrors, where light reflects predictably. Diffuse reflection happens on rough surfaces, scattering light in various directions. An example of smooth reflection is seeing your reflection in a mirror, while an example of diffuse reflection is light scattering off a crumpled piece of aluminum foil.
3. The smoothness of a surface affects its ability to reflect light because smooth surfaces, like mirrors, reflect light in an organized and predictable manner. Rough surfaces scatter light in various directions, resulting in a less clear reflection.
4. One practical application of reflection in optics is the use of optical fibers for data transmission. Controlled reflection within these fibers allows for the efficient transmission of data using light signals.
5. Mirrors are excellent reflectors of light because they have smooth and highly reflective surfaces, while a piece of crumpled paper has a rough and irregular surface that scatters light in various directions, preventing a clear reflection.

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