Name _____

Chasing Rainbows: The Magical Creation of Colors

Short Answer Key

1. Dispersion is the separation of colors in light due to differences in their wavelengths. When sunlight passes through raindrops, each color of light is refracted by varying amounts, causing them to spread out and form a rainbow.
2. The order of colors in a rainbow is always the same (ROYGBIV) because it corresponds to the decreasing wavelengths of light. Red has the longest wavelength, followed by orange, yellow, green, blue, indigo, and violet, each with progressively shorter wavelengths.
3. A rainbow appears as a semi-circular arc in the sky because we only see the upper half of the circular light path. This is because the sunlight entering the raindrop is bent and dispersed before leaving as a rainbow.
4. A double rainbow forms when sunlight undergoes two internal reflections within a raindrop before exiting. The primary rainbow is brighter and has the colors in the usual order (ROYGBIV), while the secondary rainbow is fainter and has the colors reversed (VIBGYOR).
5. Cultural interpretations of rainbows vary, but they are often seen as symbols of hope, connection, or transcendence. For example, in Greek mythology, rainbows were considered a path between Earth and the heavens.