

When you touch the surface of the water in a pool, you create ripples that affect how light travels through the water. Let's break this down step by step:

1. **Understanding Light:** Light travels in straight lines in a medium (like air) but can change direction when it meets a different medium (like water).
2. **How Ripples Form:** When you touch the water, you disturb its surface. This disturbance creates waves or ripples that expand outward from where you touched. Imagine throwing a stone into a calm pond – the waves spread out in circles.
3. **Angle of Light:** As these ripples move, they change the angle at which light strikes the water surface. The rippled surface causes the light to reflect and refract (bend) differently at different points of the water.
4. **Reflection and Refraction:** Reflection is when light bounces off a surface, while refraction is when light bends as it moves from one medium to another. The ripples cause light rays hitting the water to bend in various directions, creating a colorful effect.
5. **Seeing the Effects:** Because our eyes can only see the light that reaches them, the bending and bouncing light creates patterns and colors that appear like ripples of light. This is why you see shimmering effects where the water is disturbed.

In conclusion, when you touch the water, you create ripples that affect how light behaves, leading to beautiful ripples of light in the pool. It's a fascinating interaction between motion and light!