

## How polarizers block light

Most light sources, like light bulbs or the sun, produce light waves that are oriented in all different directions. Polarizers work by blocking certain orientations of light. Once light goes through a polarizer, it is *plane polarized*, meaning that all of the light waves passing through are parallel to each other.

When you look through two (or more) polarizers, the brightness depends on how the polarizers are aligned. So when you rotate the polarizers, the brightness changes. When two polarizers are aligned parallel to each other, the light that makes it through the first polarizer will make it through the second polarizer. Parallel polarizers like this let the most light through and look the brightest. Conversely, when two polarizers are perpendicular to each other, the light that makes it through the first polarizer is oriented perpendicular to the second polarizer, so it will be blocked. Polarizers that are fully perpendicular to each other are called *crossed polarizers*, let the least light through, and look the darkest.

