

GCSE Photography

Unit One—Polarized Light.

Although light rays travel in straight lines, not all light rays travelling in the same direction have the same orientation.

Imagine someone (who is not very good at it) throwing giant Frisbees at a gate that you might find on a farm. While they all might be travelling straight at the gate, they may well be travelling at different angles.



Some will travel parallel to the ground, while other will be at right angles to the ground, and still others will be at angles in between. As light refracts through the atmosphere, light rays change direction and orientation. Polarised light, however all has the same orientation—all the rays of light are travelling parallel to each other.

If the waves of light can be viewed as a series of Frisbees, then the farm gate can be viewed as a polarizing filter. Polarizing filters will only transmit light which is orientated in a certain direction, just as the bars of the gate will only allow Frisbees to pass through if they are orientated in the same direction as the bars.



This property is extremely useful in photography for a number of reasons. On a very basic level the amount of light transmitted by a polarizing filter is reduced by about three quarters (or two stops), but does not change colours so a polarizing filter can be used to extend exposures in the same way that a Neutral Density filter does.

In this example the exposure was increased from a quarter of a second to one second with the addition of the polarising filter.

A more common use of polarizing filters is to give the colours on your photograph greater saturation and particularly to darken the sky.

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Polarizing filters can be rotated in their mounts to vary the amount of polarizing effect.

The photograph on the left was taken without a polarizing filter, and the one on the right was taken with a polarizing filter rotated to give the maximum effect.

While, in this example, the colours

are oversaturated, it does emphasize the use of the filter, particularly with rainbows!