

Pithy Photography Pointers

1) What do we need to know about Light ?

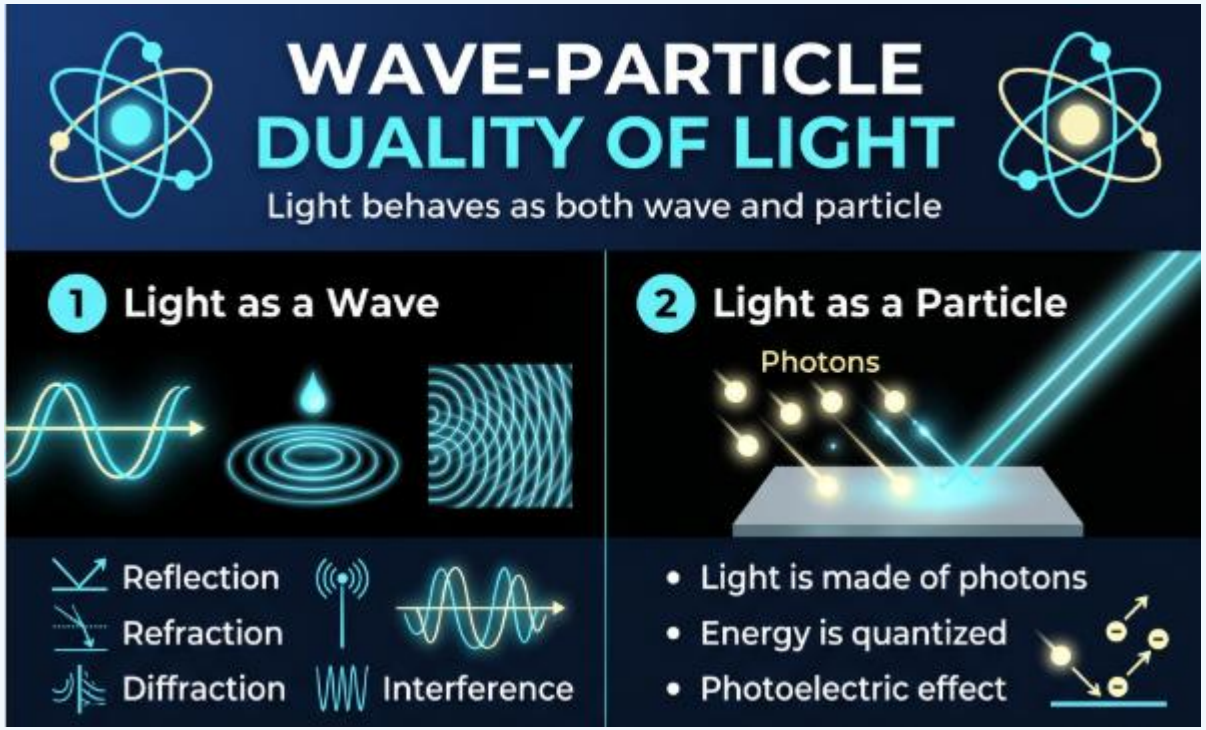
What is Light ?

Photography literally means “drawing with light”.

Light is what allows your camera to create an image. Before we think about camera settings, it helps to understand what light is.

Light is a form of electromagnetic radiation.

Light has both wave-like and particle-like properties.



Where does light come from ?

There are two basic types of light source:

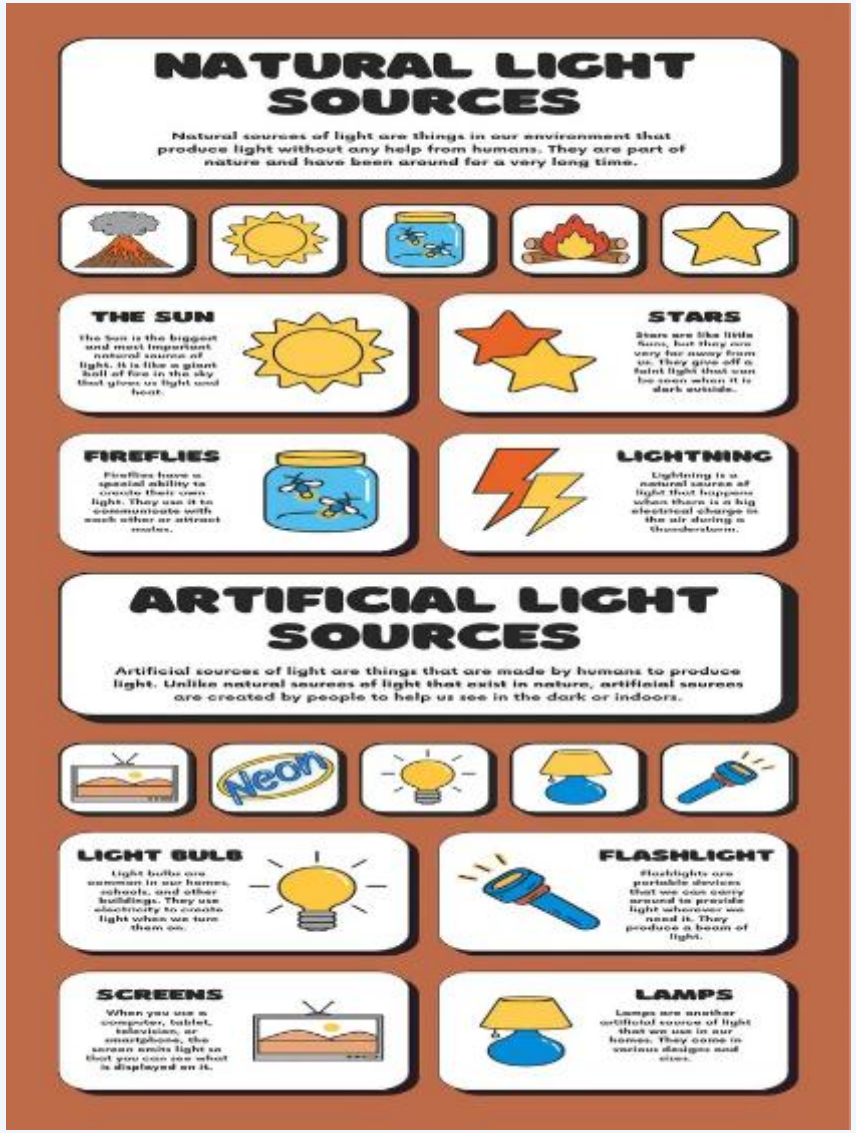
Natural sources

- **The Sun**
- Stars
- Lightning
- Fire

Artificial sources

- LED lamps
- Flashguns
- Streetlights
- Candles
- Studio lights

These produce light at different wavelengths.



Light has different wavelengths

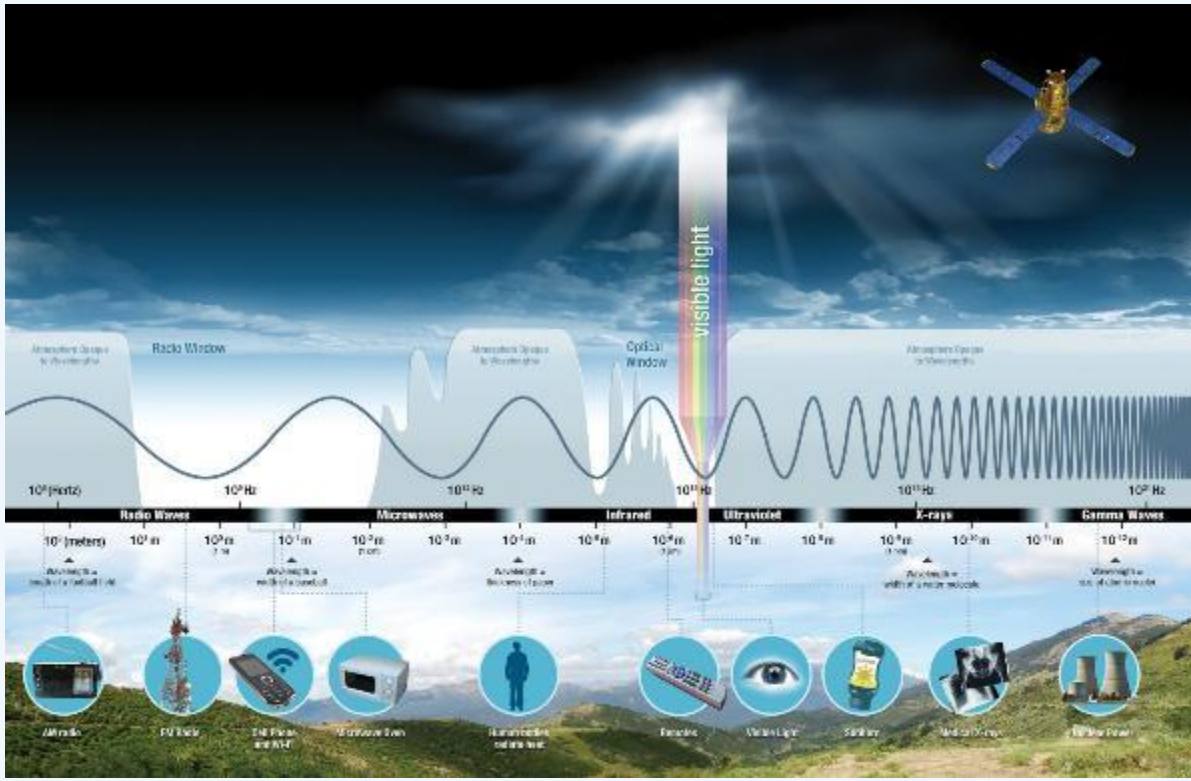
Visible light is only a small part of the electromagnetic spectrum.

White light is a mix of all the different colours (visible wavelengths). Sunlight is white light.

Different wavelengths are perceived by our eyes as different colours:

Shorter wavelengths → blue/violet
Longer wavelengths → orange/red

Your camera's sensor records information about these different wavelengths, allowing it to reproduce colour.



Why does an object have a colour ?

A red object doesn't simply "contain red".

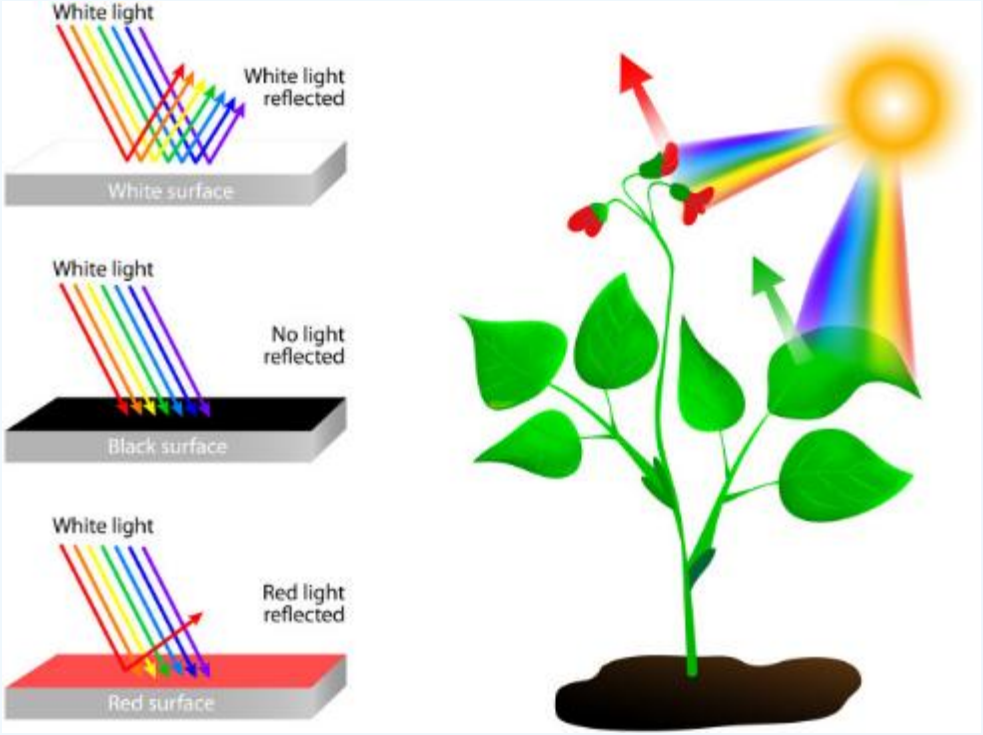
When white light falls on it, a red surface absorbs most of the other wavelengths, but reflects most of the red wavelengths towards our eyes.

A green object reflects more green wavelengths.

A black surface absorbs most visible wavelengths.

A white surface reflects a large proportion of the visible spectrum.

Take away – white light is a mix of all the colours. We see colours because some surfaces reflect that colour back to our eyes.



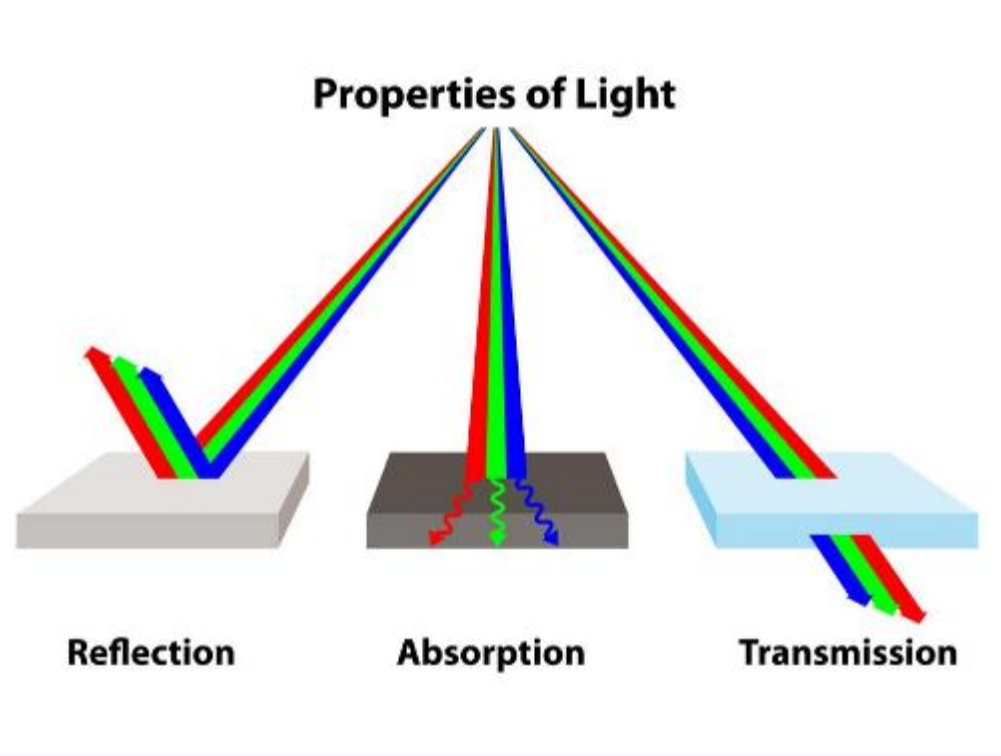
What happens when light hits a surface ?

Several things can happen :

Reflection- the surface sends some light back. This is the light that allows us to see the object.

Absorption - the material absorbs some wavelengths of light, usually converting their energy into heat.

Transmission - some light passes through the material — for example, through glass or a translucent curtain.



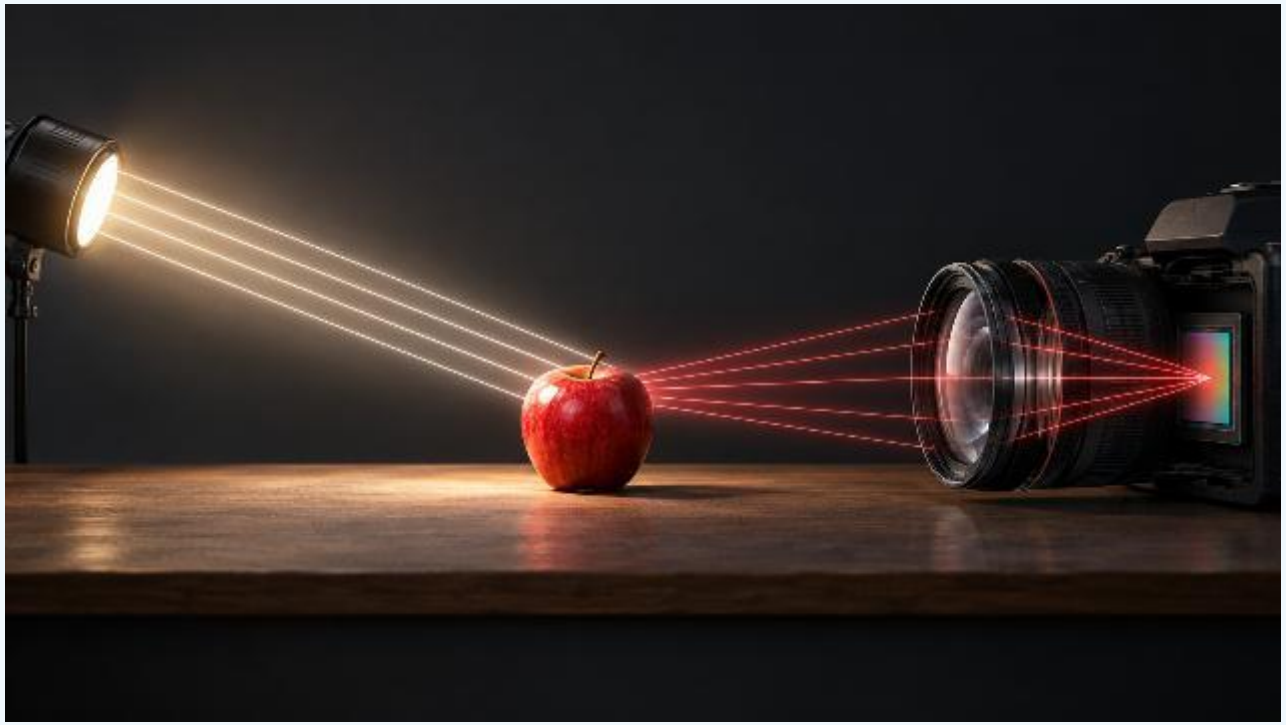
The photographic connection

Your camera is essentially asking:

How many photons are reaching my sensor, and what wavelengths do they contain ?

That information becomes your photograph.

Light → subject → reflected light → lens → sensor → photograph



Points to remember

- Light is composed of particles (photons), which normally travel in straight lines.
- Light sources produce light at different wavelengths and in different mixes of wavelengths.
- White light (sunlight) is a mix of all the different colours (visible wavelengths).
- Colours arise because materials reflect that colour (wavelength) but absorb other colours.
- Photons reflected from different surfaces and angles reach the sensor through the camera lens.
- If no light reaches the sensor, there is no photograph.

