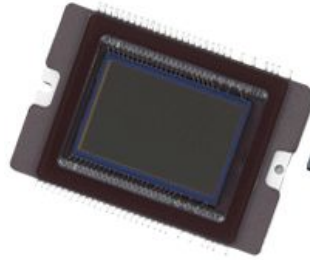


History of Digital Photo

Difference between Film & Digital

Film cameras record images on light sensitive FILM

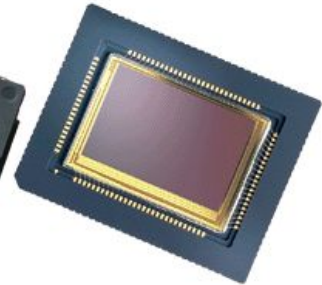
Digital cameras record images on a digital Sensor



Canon CMOS
sensor,
EOS 400D



Sony CCD
sensor,
Nikon D2X



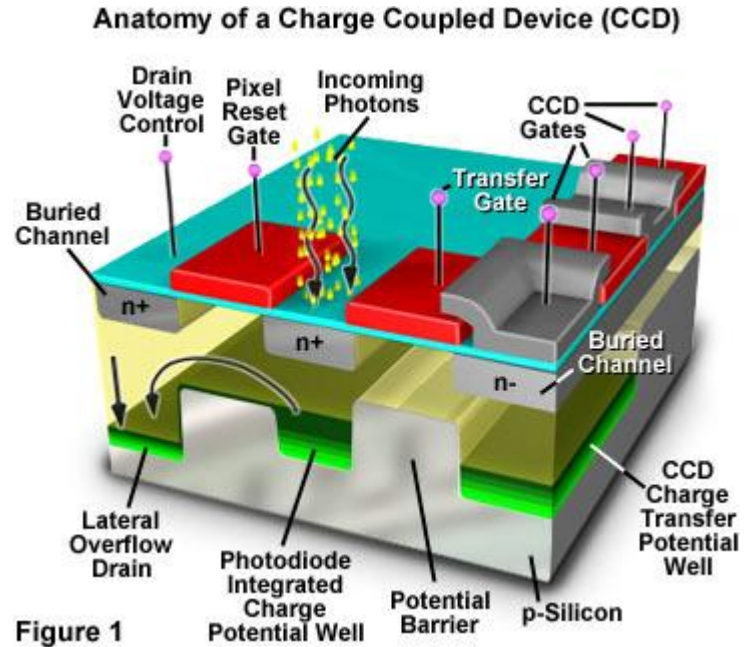
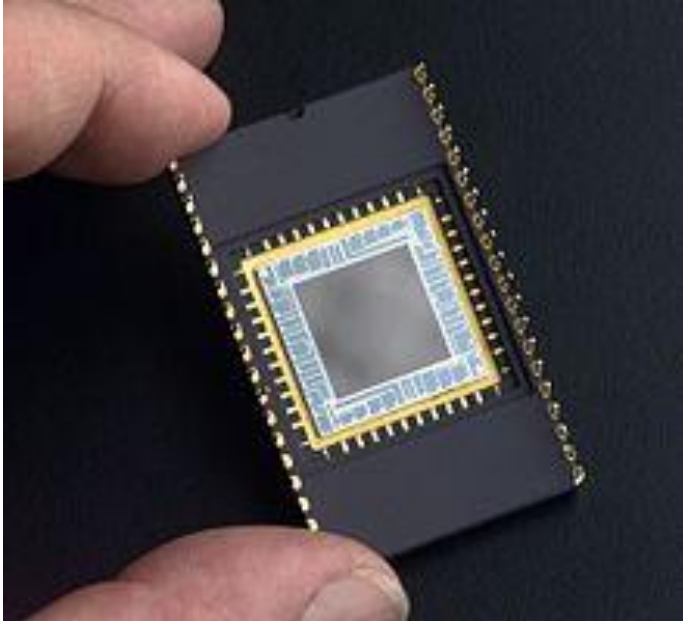
Foveon X3
sensor,
Sigma SD14

The CCD

Charged Coupled Device

Is an integrated circuit etched onto a silicon surface forming light sensitive elements called pixels. Photons incident on this surface generate **charge** that can be read by electronics and turned into a digital copy of the light patterns falling on the **device**.

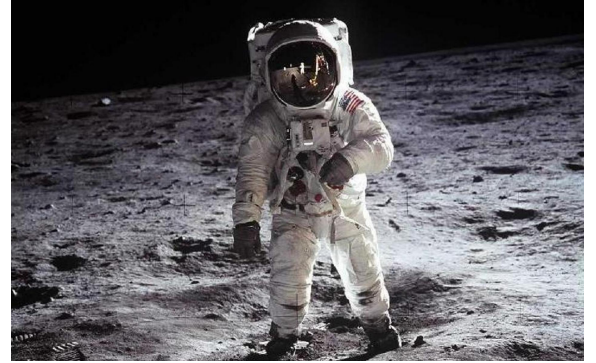
CCD



CCD

Invented in 1969 (same year we walked on the moon!)

By Willard Boyle & George E. Smith



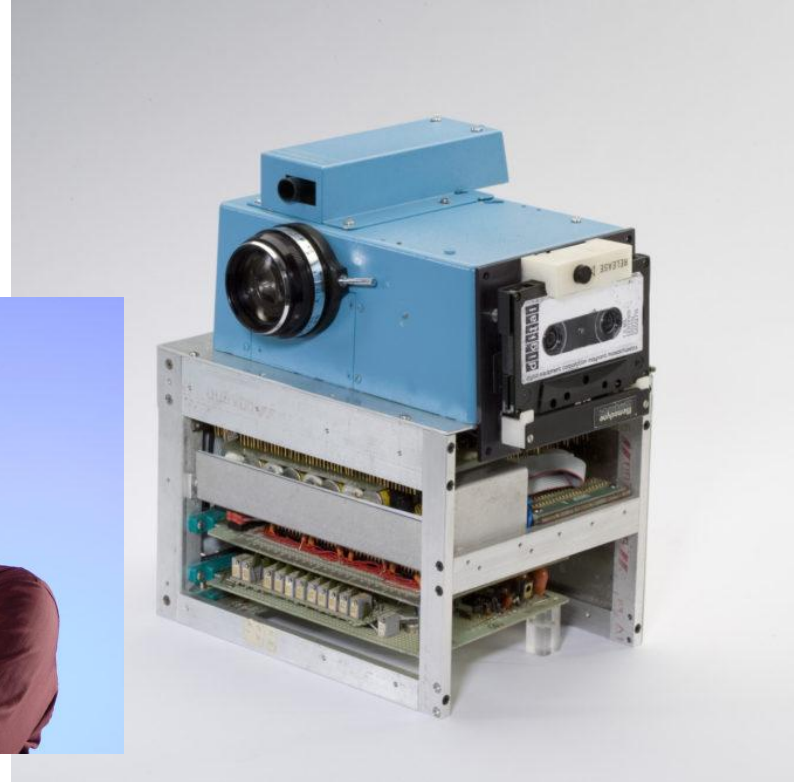
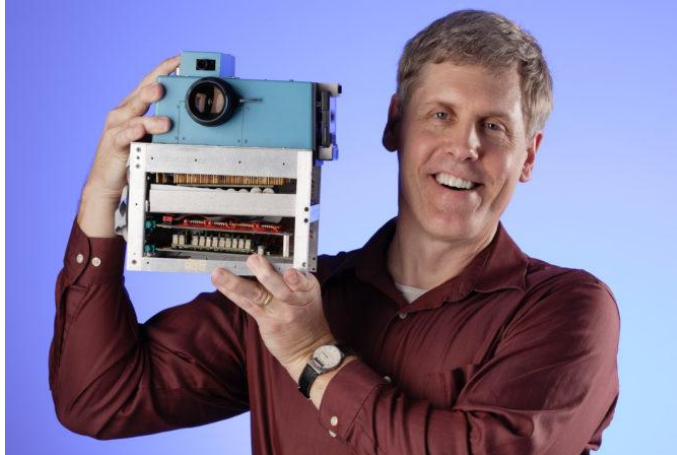
Importance:

This device takes the place of film in old film analogue cameras. It is where the digital image is recorded.

Digital Camera's are 35 times more sensitive than film.

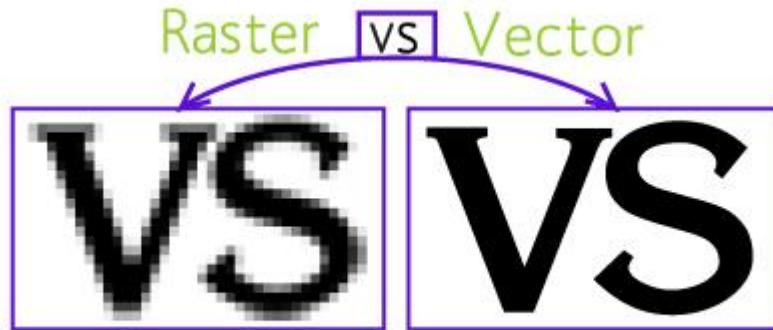
FIRST (Marketable) CAMERA!

- Sony Mavica
- Invented by Steve Sasson
- In 1975
- <https://vimeo.com/22180298>



PHOTOSHOP

- Invented by Thomas Knoll in 1988
- Raster based
 - a **raster** graphics **image** is a dot matrix data structure, representing a generally rectangular grid of pixels, or points of color, viewable via a monitor, paper, or other display medium.



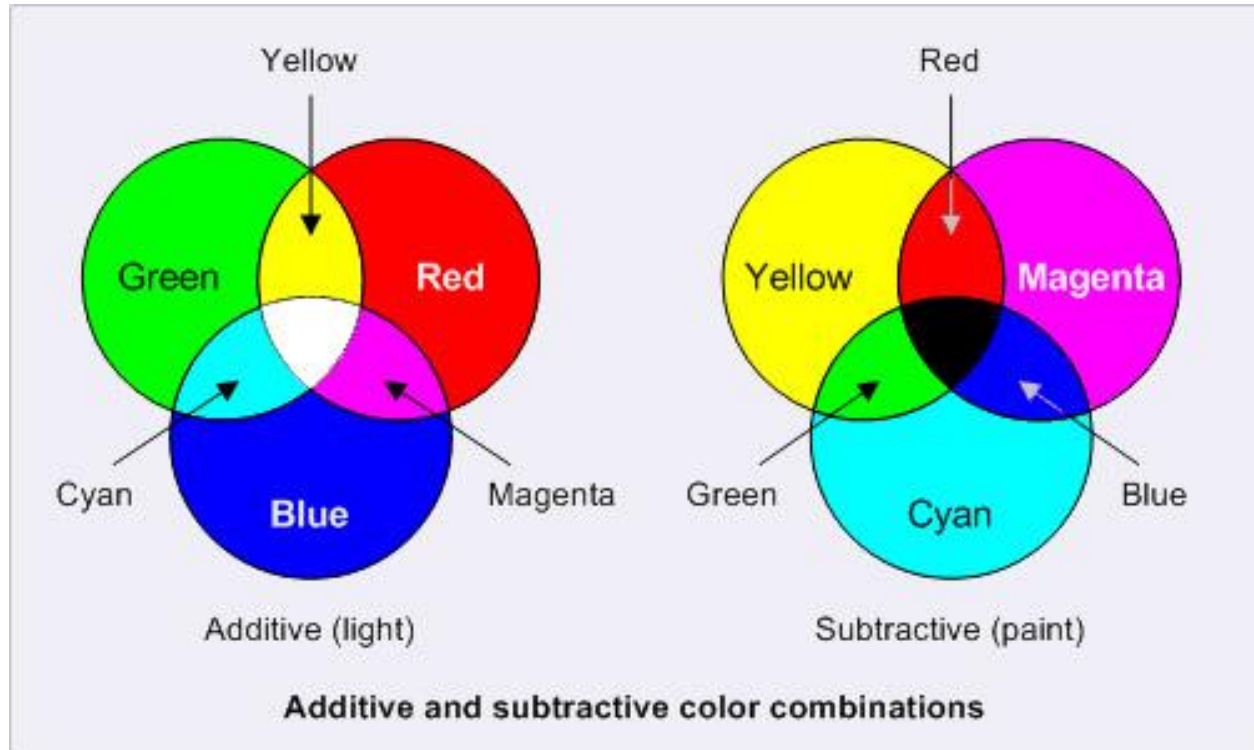
© vector-conversions.com



DID PHOTOSHOP INVENT PHOTOSHOP?

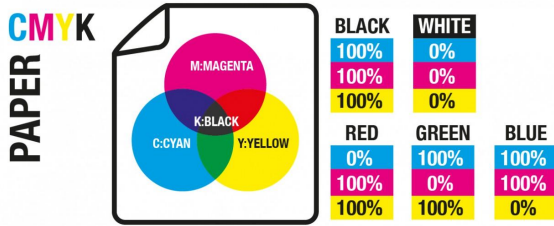
KNOLL!

LIGHT & COLOR

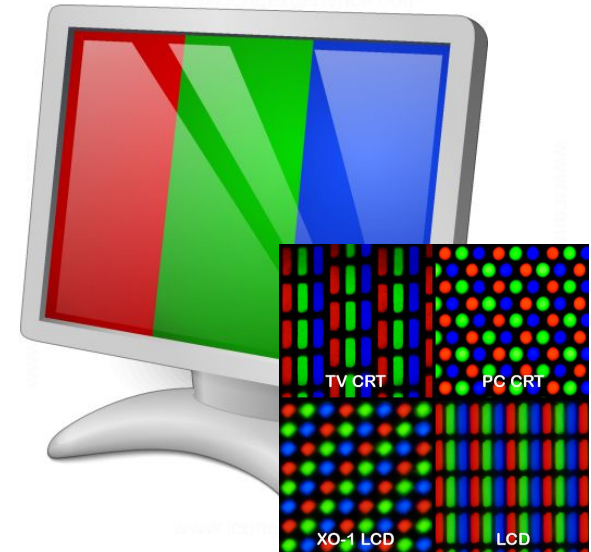


CMYK vs. RGB

CMYK is a subtractive color model, **used** in color **printing**, and is also **used** to describe the **printing** process itself. **CMYK** refers to the four inks **used** in some color **printing**: cyan, magenta, yellow and key (black).



RGB is **used** for the sensing, representation and display of images in electronic systems, such as televisions and computers, though it has also been **used** in conventional photography.



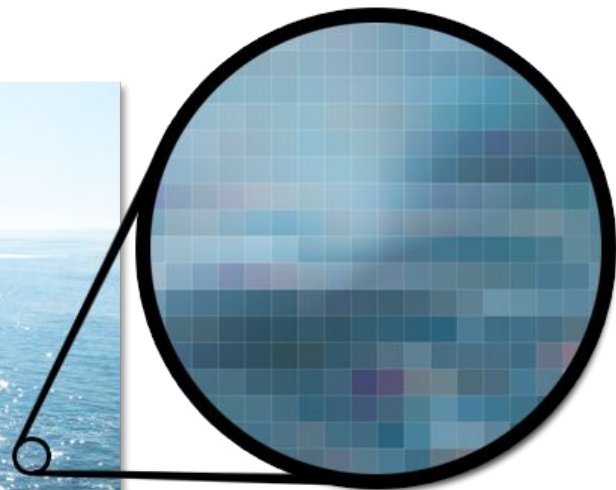
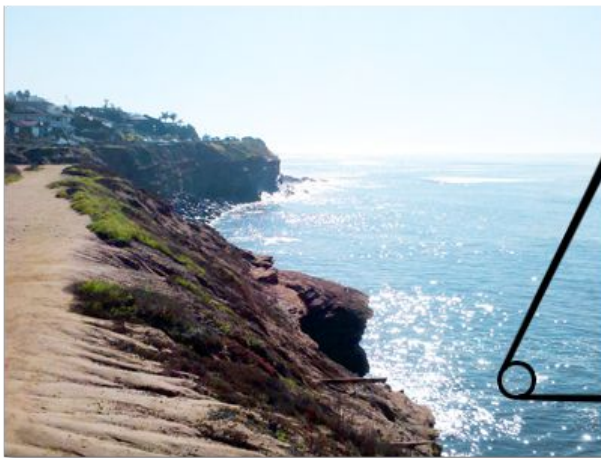
PIXELS

Digital photographs are made up of little squares of COLOR called pixels.

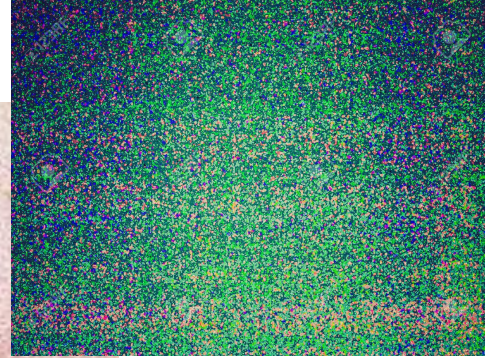
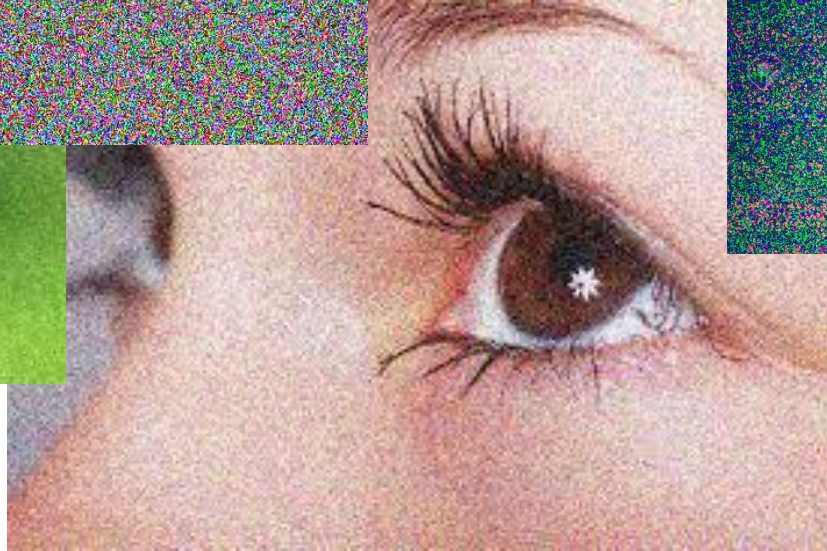
Pixels comes from two words:

Picture & Element

1 megapixel = 1 million pixels



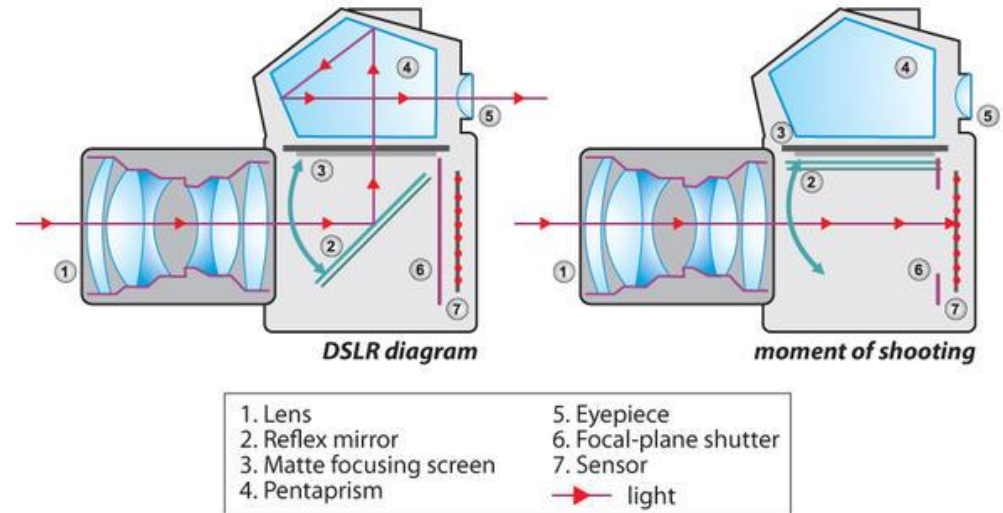
Another term for pixelated is NOISY



DSLR

Digital Single Lens Reflex

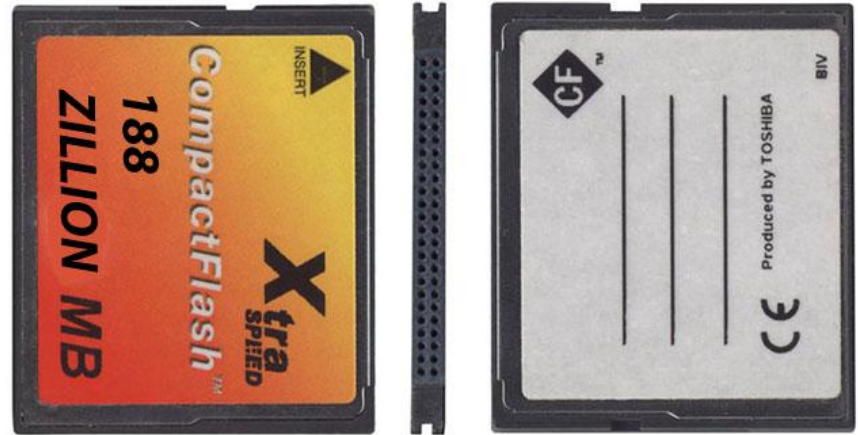
A **digital single-lens reflex camera** (also called a **digital SLR** or **DSLR**) is a **digital camera** that combines the optics and the mechanisms of a **single-lens reflex camera** with a **digital imaging sensor**, as opposed to **photographic film**. The reflex design scheme is the primary difference between a DSLR and other digital cameras. In the reflex design, light travels through the lens, then to a mirror that alternates to send the image to either the **viewfinder** or the image sensor. The alternative would be to have a viewfinder with its own lens, hence the term "single lens" for this design. By using only one lens, the **viewfinder** of a DSLR presents an image that will not perceptibly differ from what is captured by the **camera's sensor**.



Memory Cards

CF: Compact Flash

Larger in size. More memory. Used in Larger SLR cameras.



Memory Cards

SD: Secure Digital

Most common. Used in digital point and shoot & newer DSLR cameras. This is what we use for our canon rebels!



Fun Fact!

The Canon 5D Mark iv has BOTH CF & SD memory card capacities!

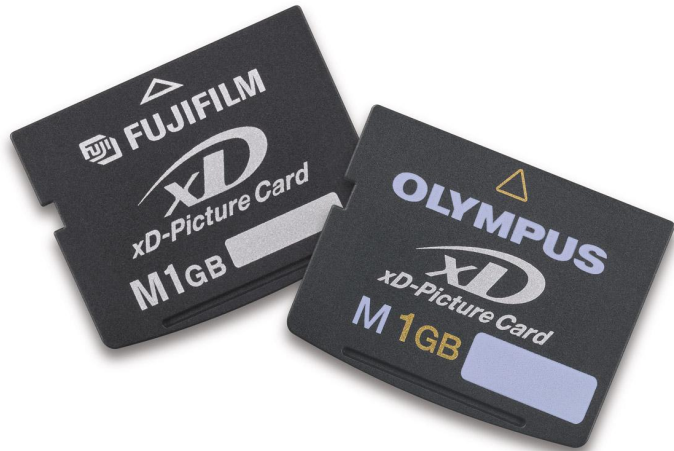


Memory Cards

XD: extreme Digital

½ size of SD cards.

Used in Olympus & Fuji



Micro SD: mini secure digital

Used mostly in *older mobile devices.



PRINT VS. DIGITAL REVIEW!

PRINT

COLOR MODE: CMYK

MEASUREMENT: INCHES

DPI: 300



DIGITAL

COLOR MODE: RGB

MEASUREMENT: PIXELS

PPI: 72

