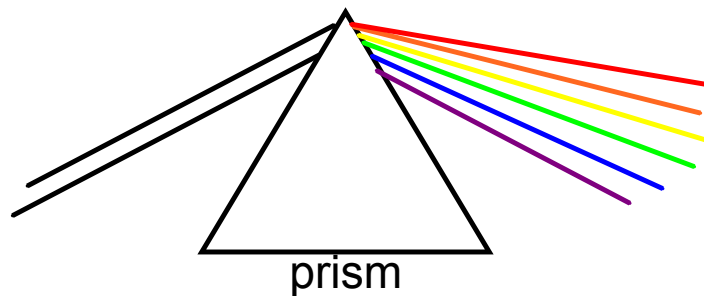


Light: What do we know?

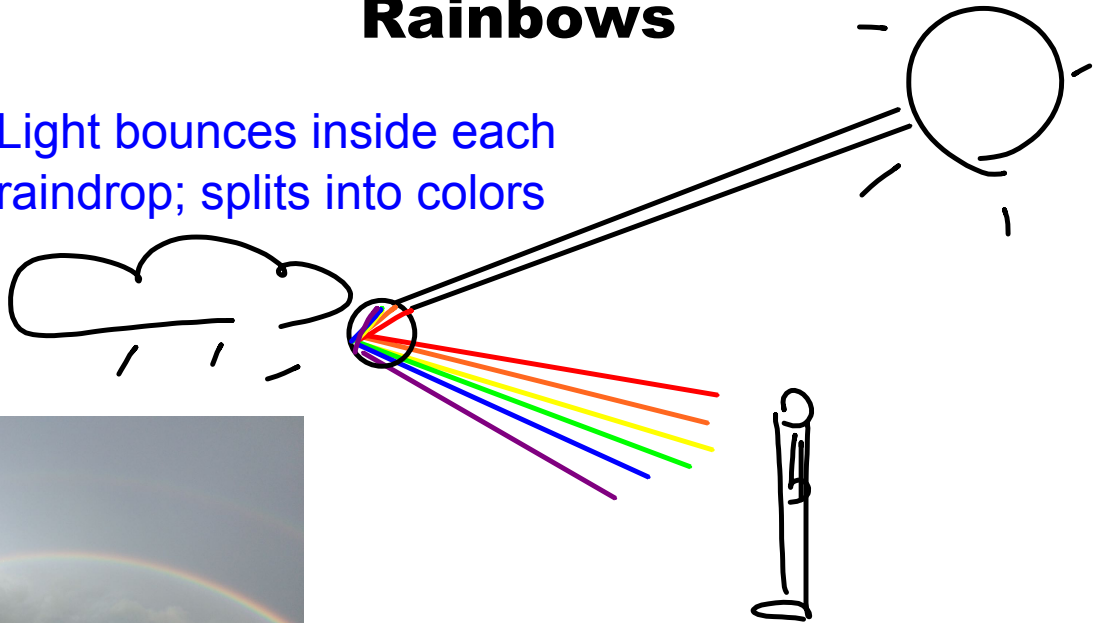
It's fast 300,000,000 m/s

White light can be split up into colors
(each frequency of light bends at a slightly different angle)



Rainbows

Light bounces inside each
raindrop; splits into colors



Sun must be behind you; rain in front

speed of light: 300,000,000 m/s

**frequency is
color**

800 trillion Hz

V



B



G



Y



O



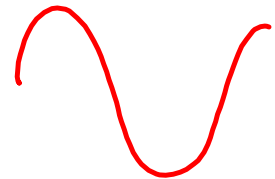
R



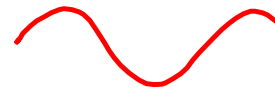
400 trillion Hz

**amplitude is
brightness**

BRIGHT



DIM



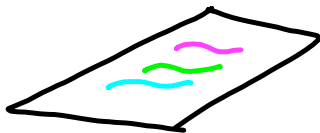


"Black Light"

Gives off Violet and Ultraviolet

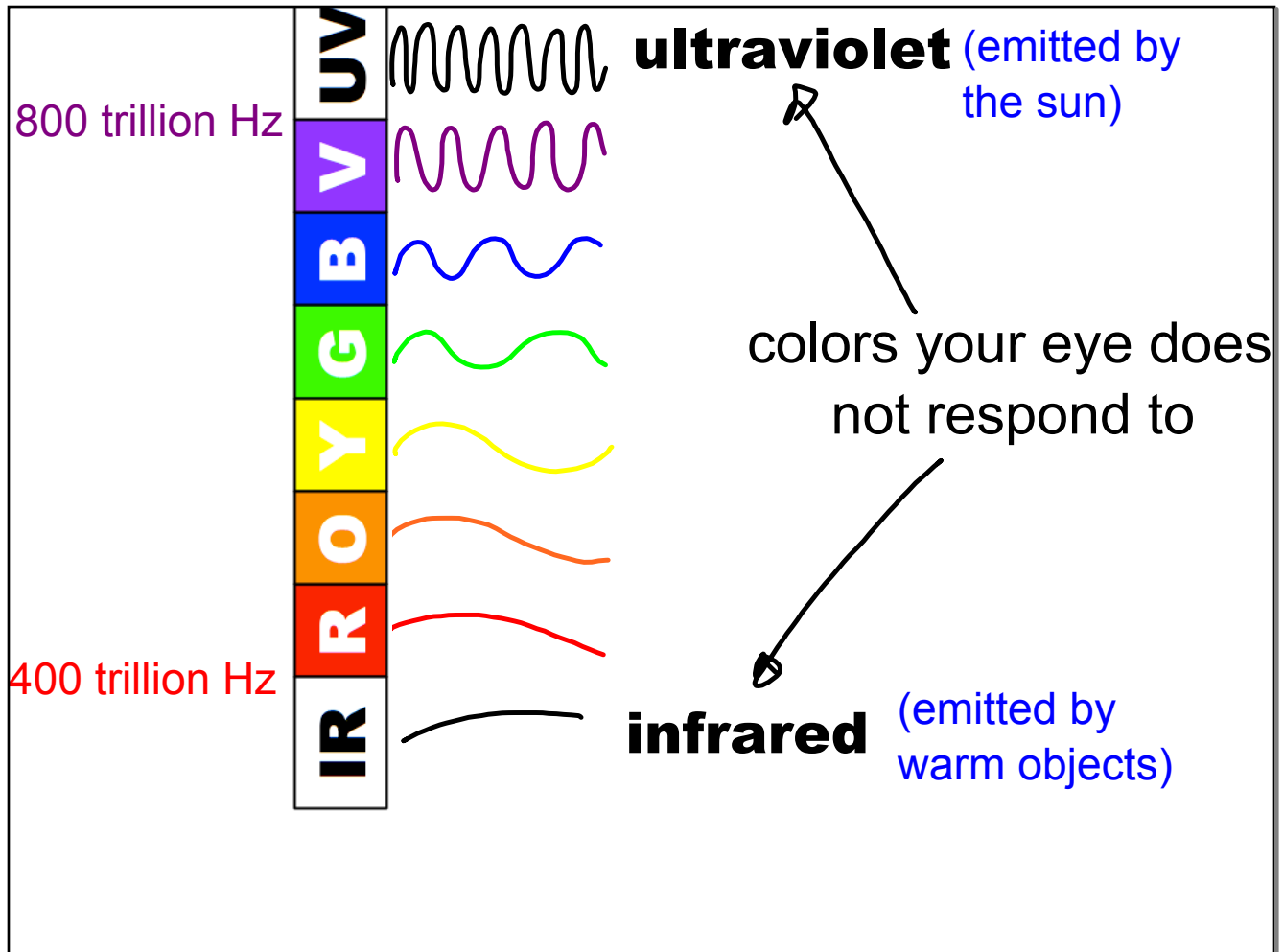
(you can see)

(you can't see)



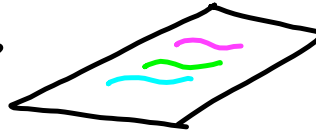
Some inks & dyes can turn
UV into visible light.

"fluorescent colors"



above
800 trillion Hz

ultraviolet

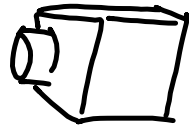


Some inks & dyes can turn UV into visible light.

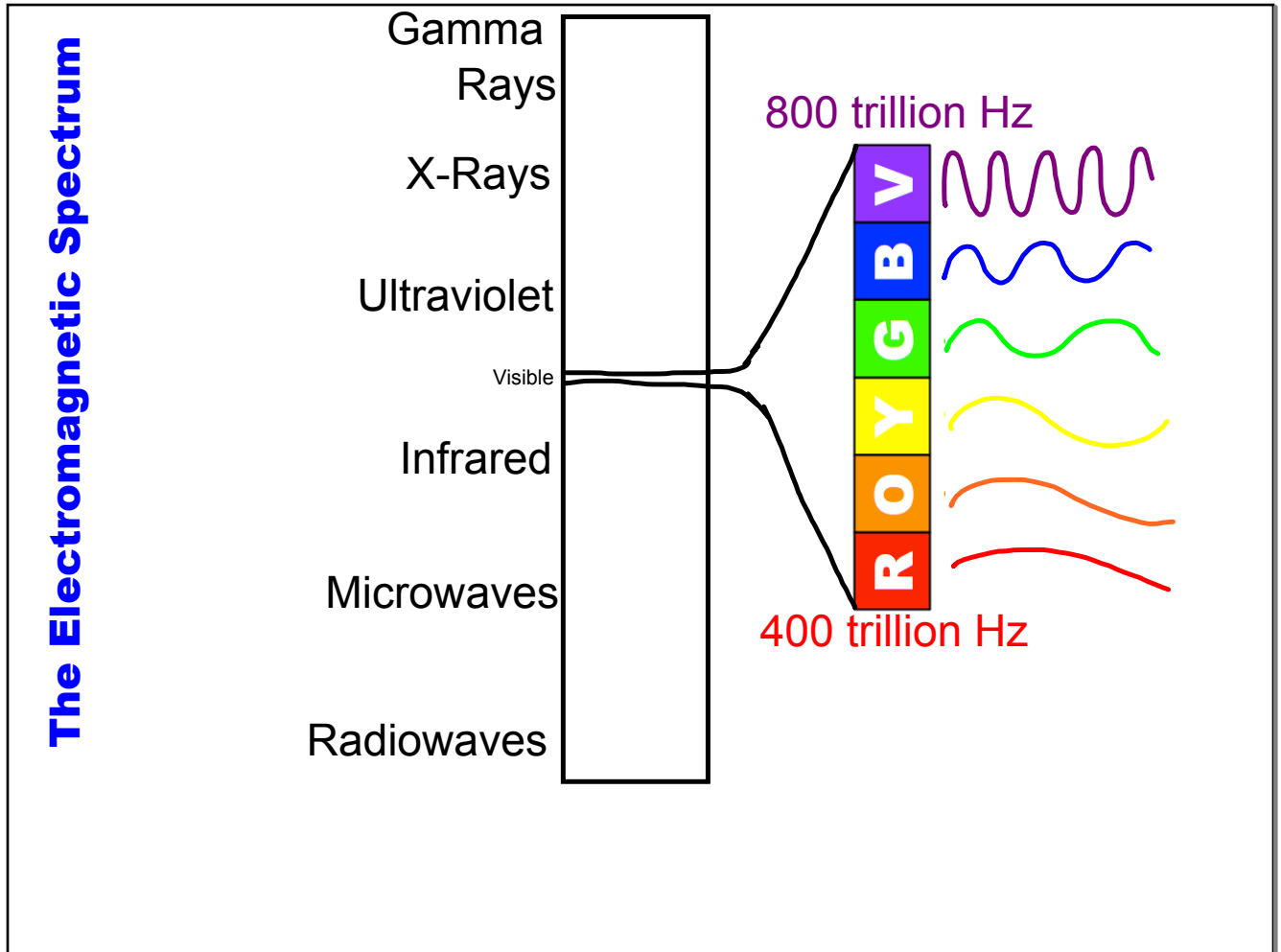
"fluorescent"

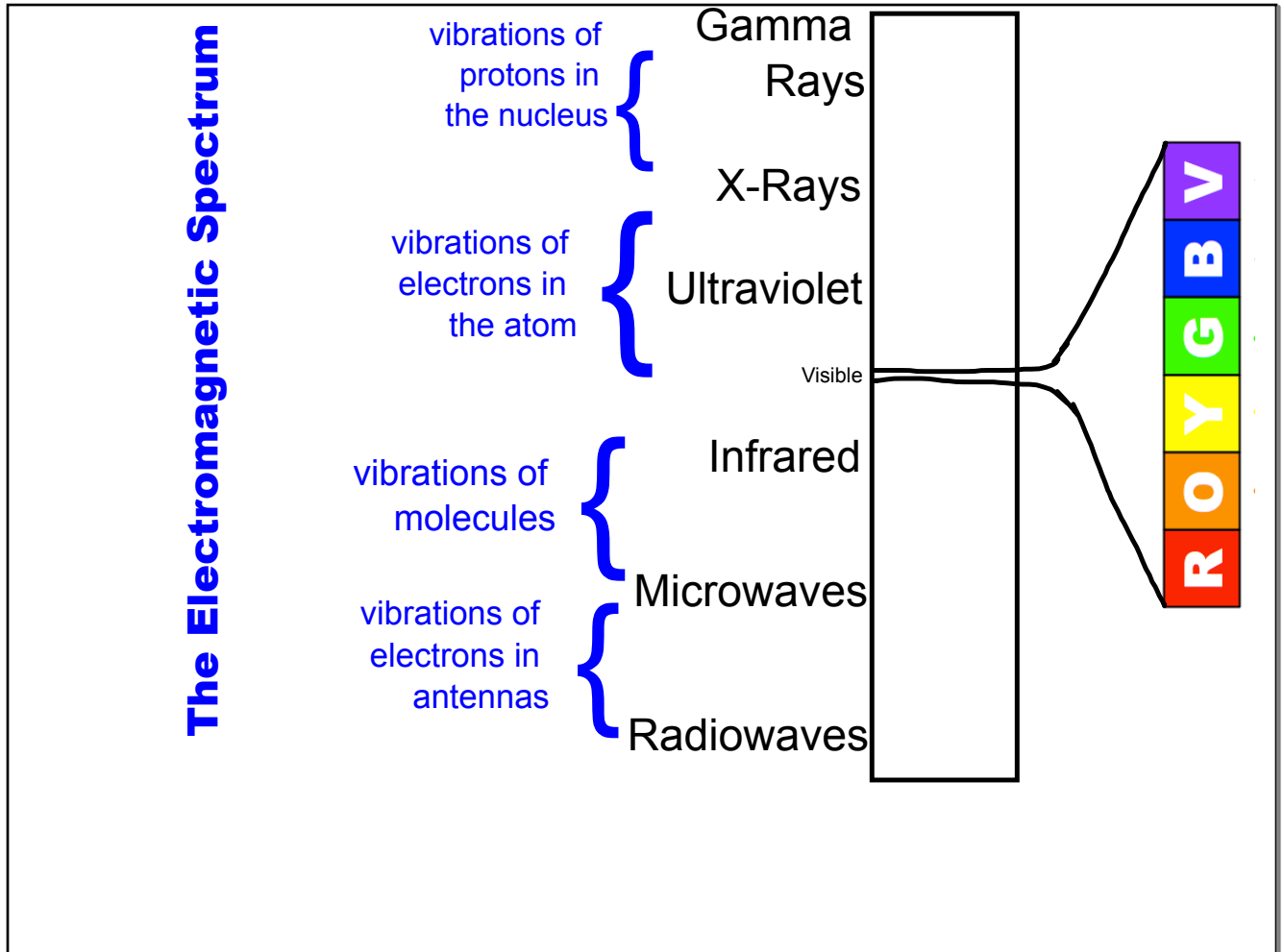
below
400 trillion Hz

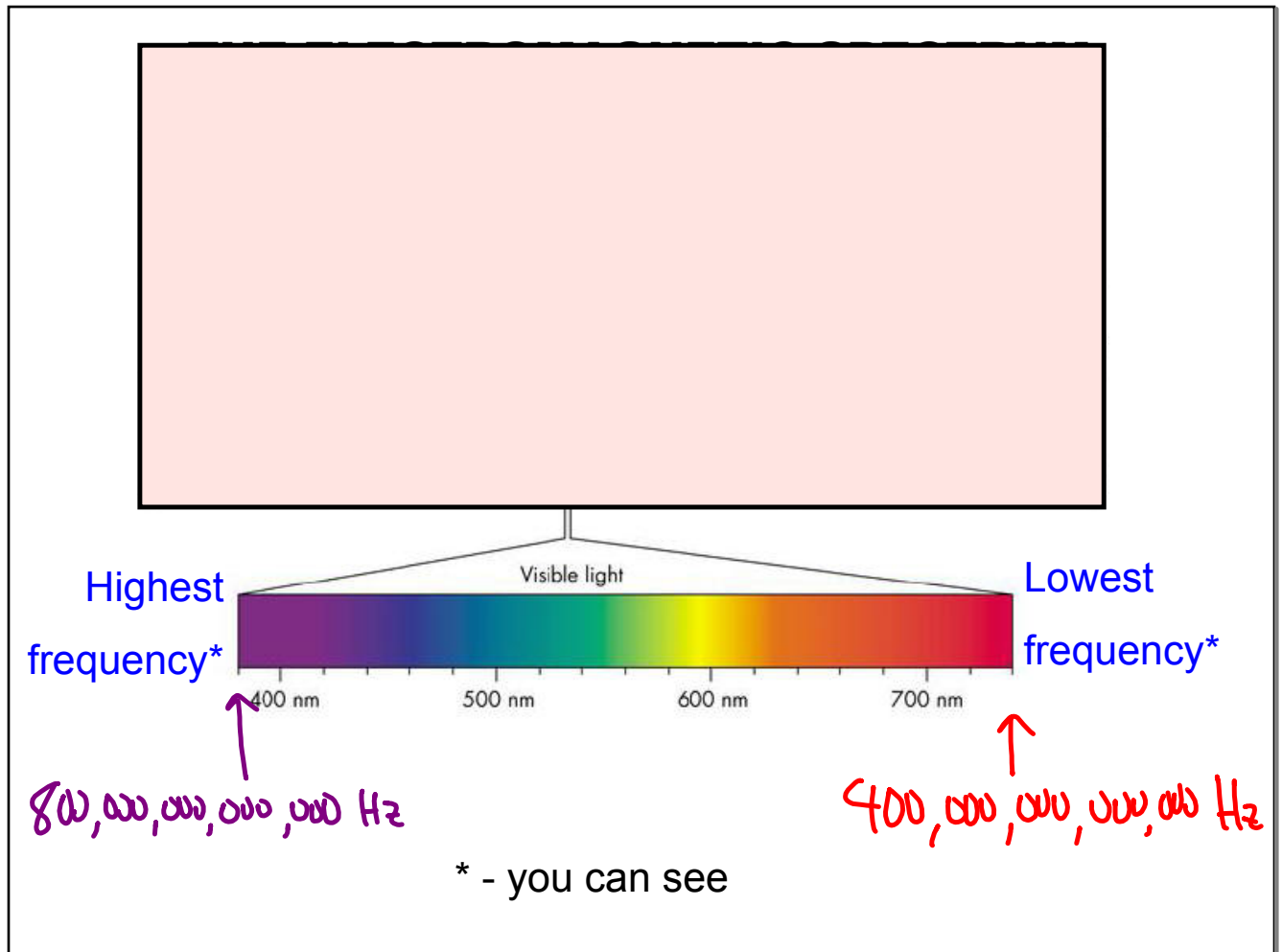
infrared



Some cameras can turn IR into visible light.







All color comes from the light.

White light is the whole 

Paints, inks and dyes can only subtract out colors.

**The color you see is what is
left after the subtraction.**