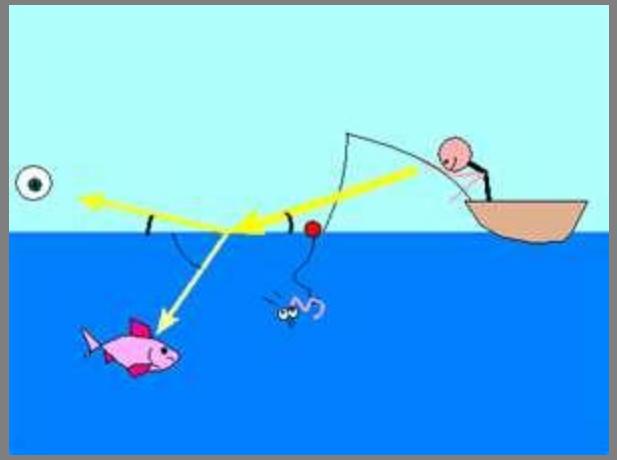
Refraction

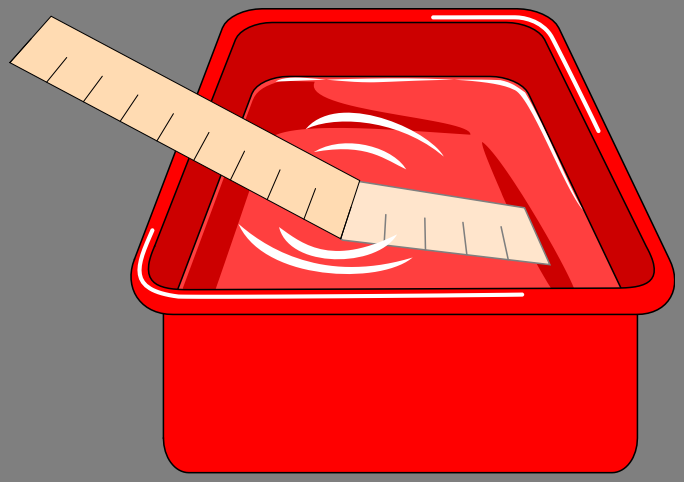


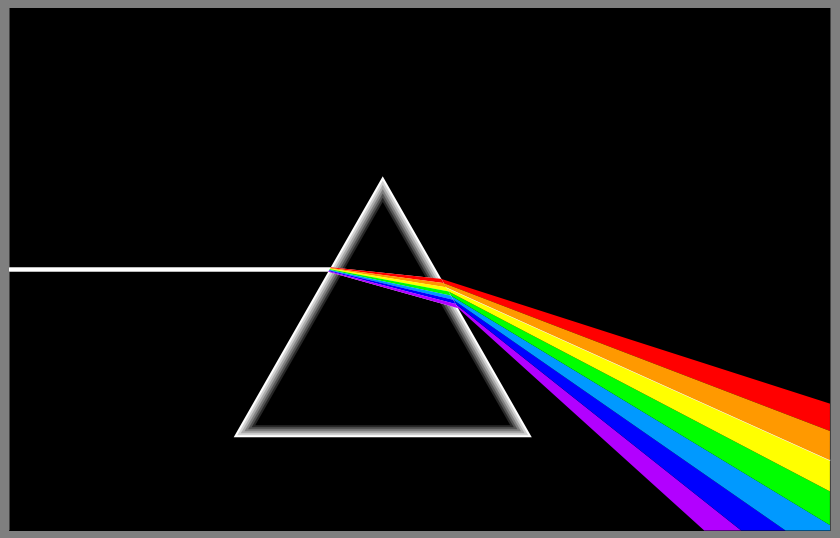
Refraction

- The turning or bending of light as it passes through different medium

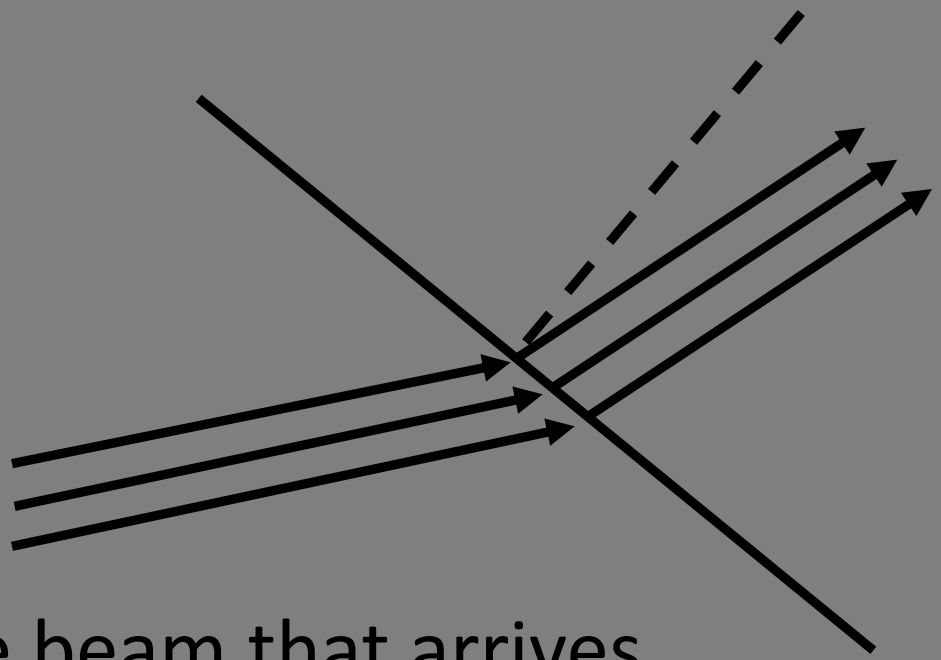
Refraction

Light bends *towards* the normal in a denser material



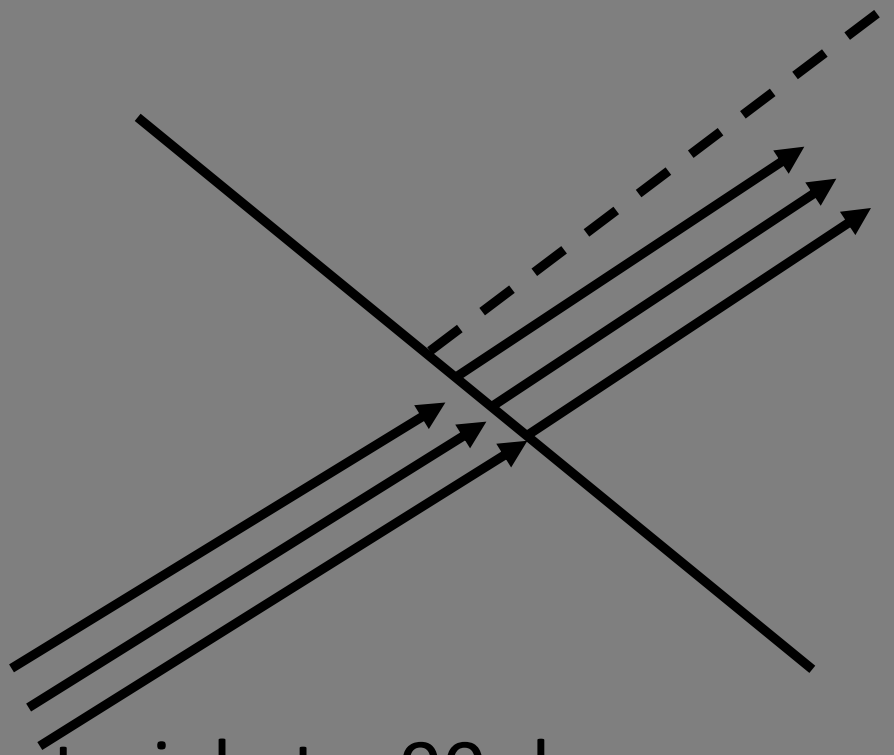


Refraction happens because the light slows down in the material



(the part of the beam that arrives first slows down first)

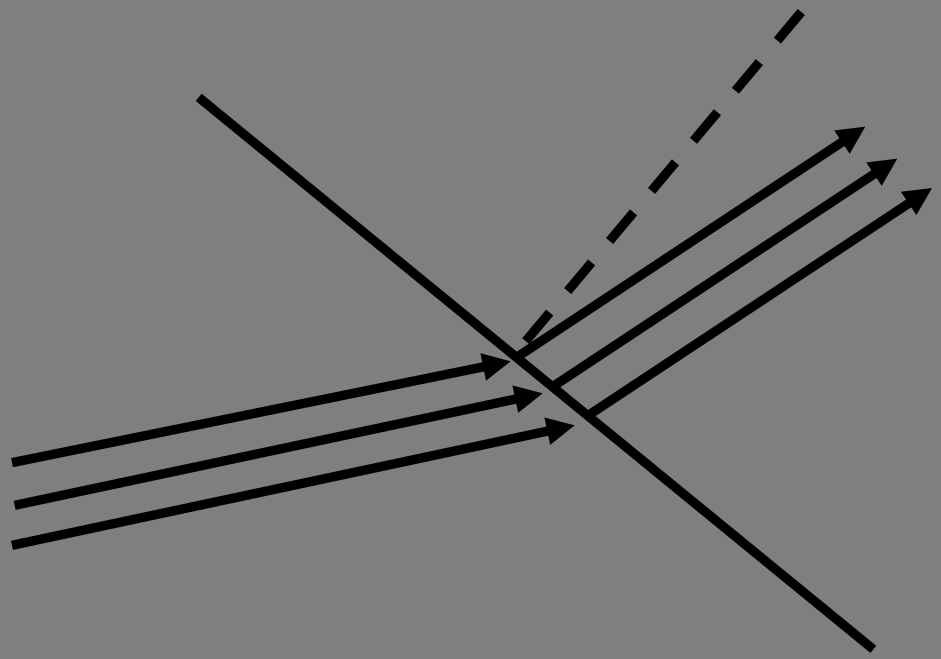
Refraction



-If Light enters the material at a 90 degree angle.

-The light ray slows down and its direction does not change

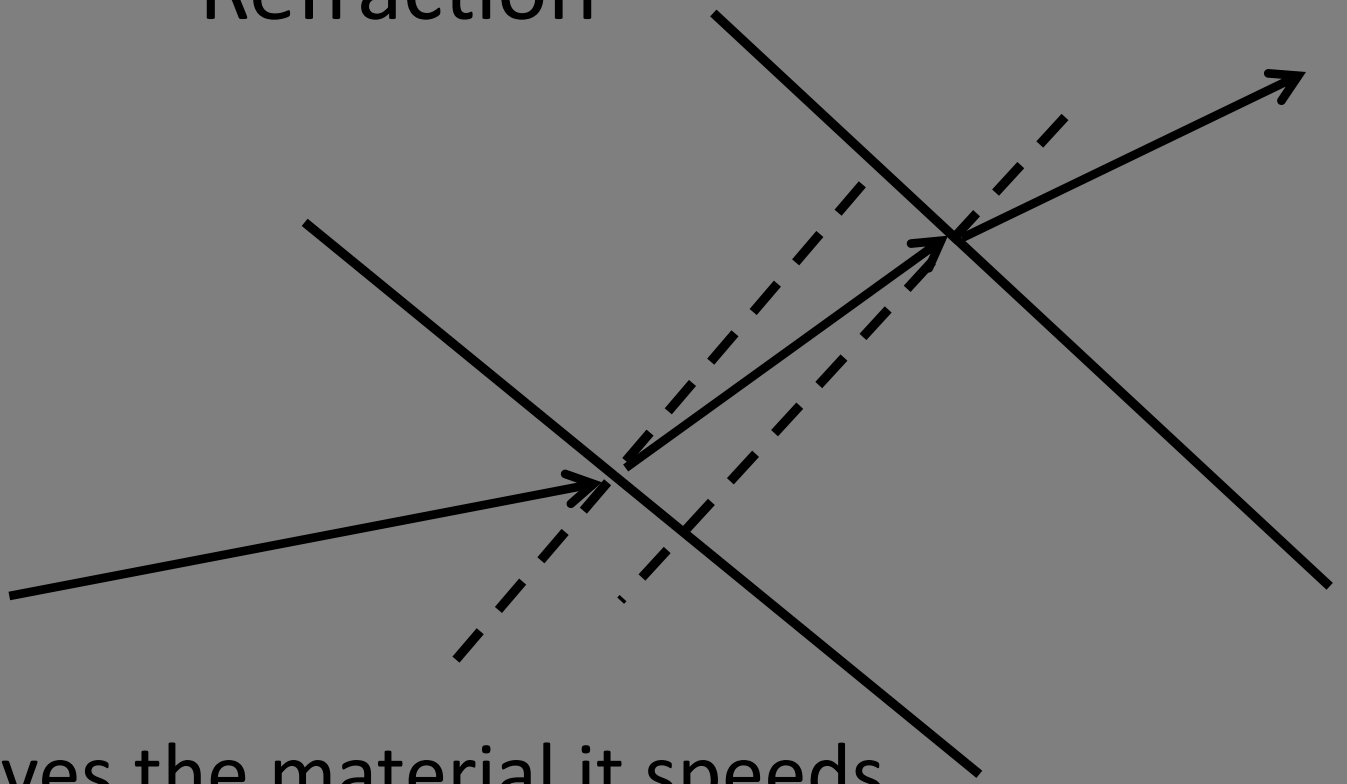
Refraction



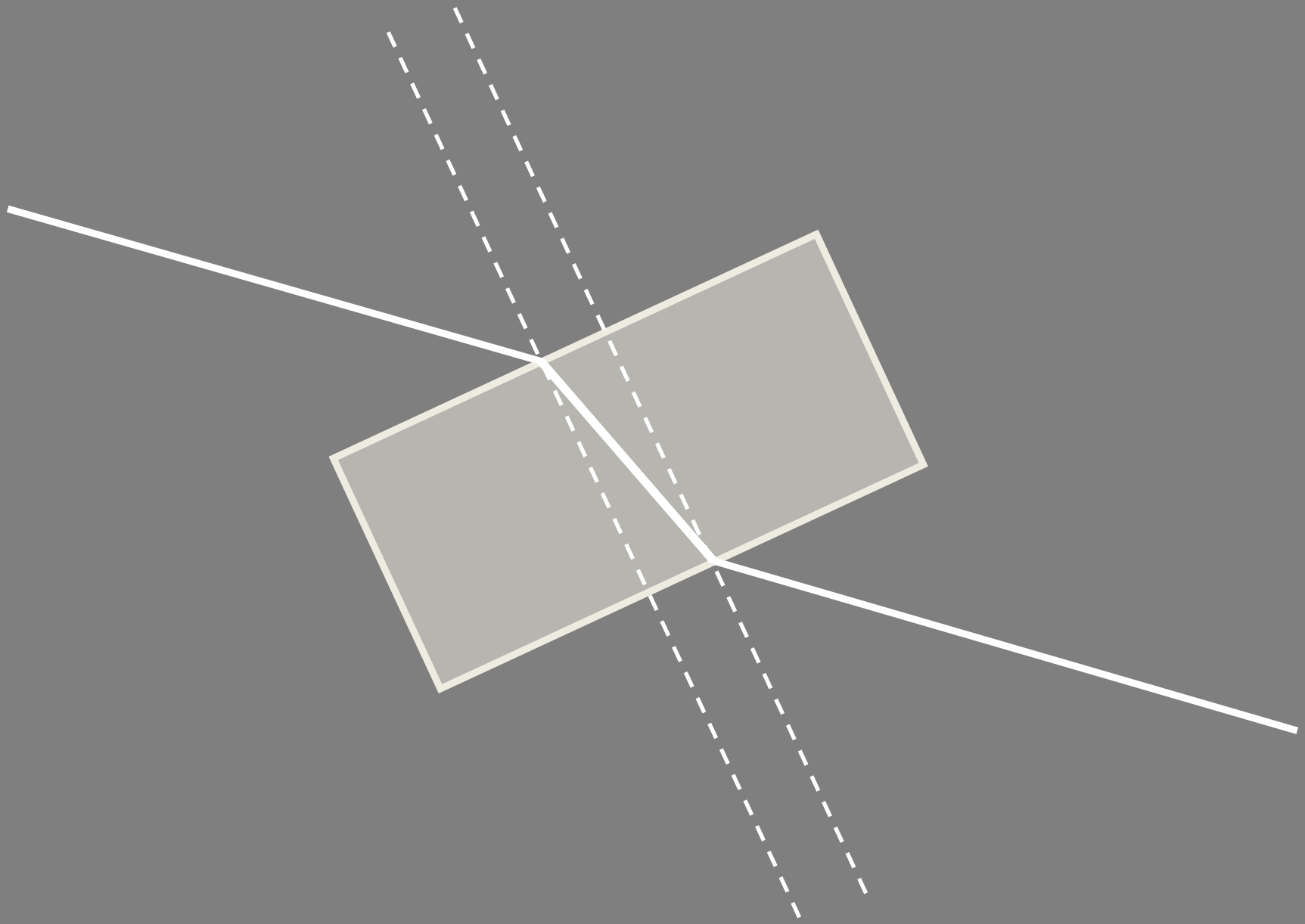
Light entering material at an angle, slows down.

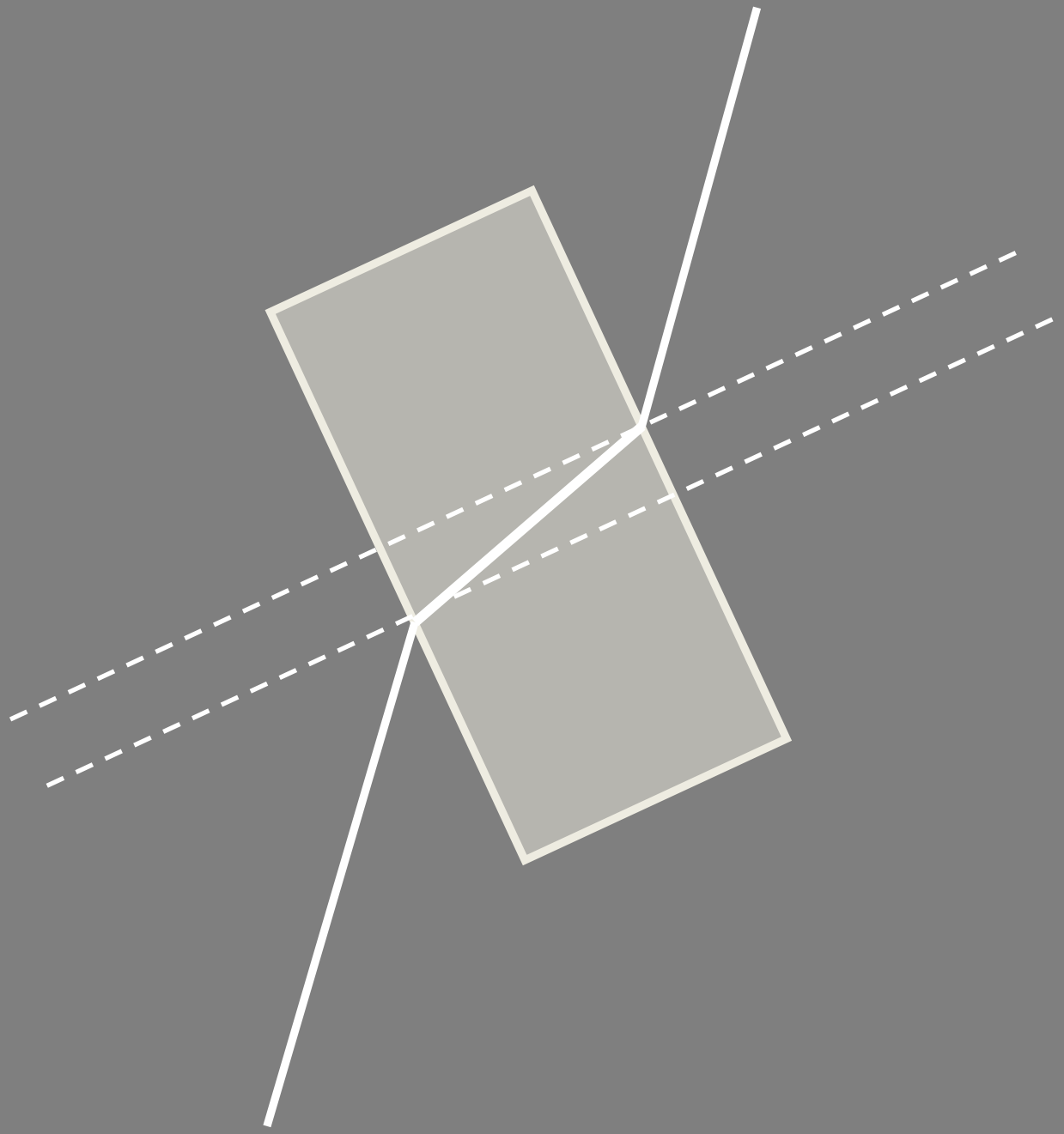
It will refract toward the normal

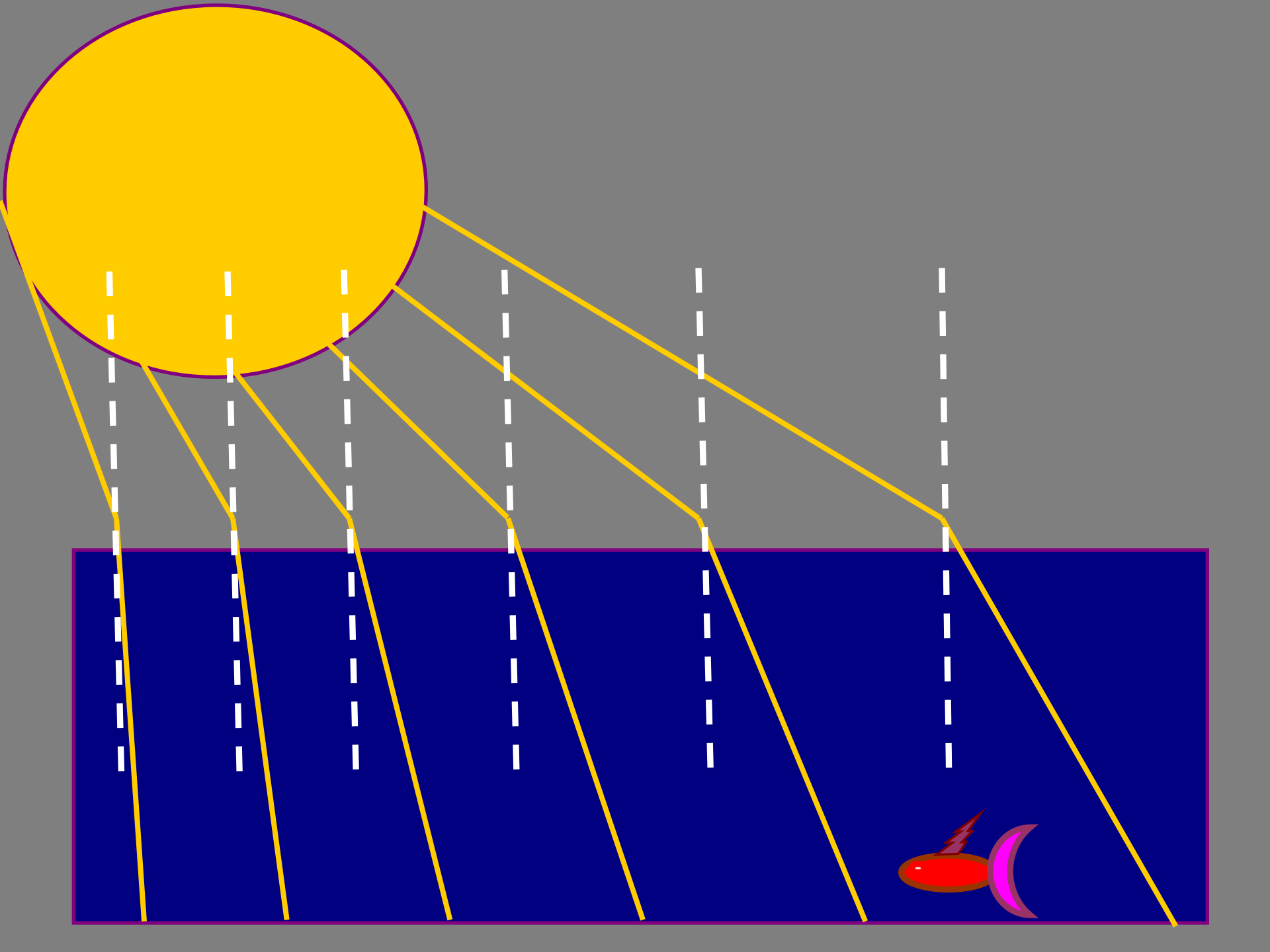
Refraction

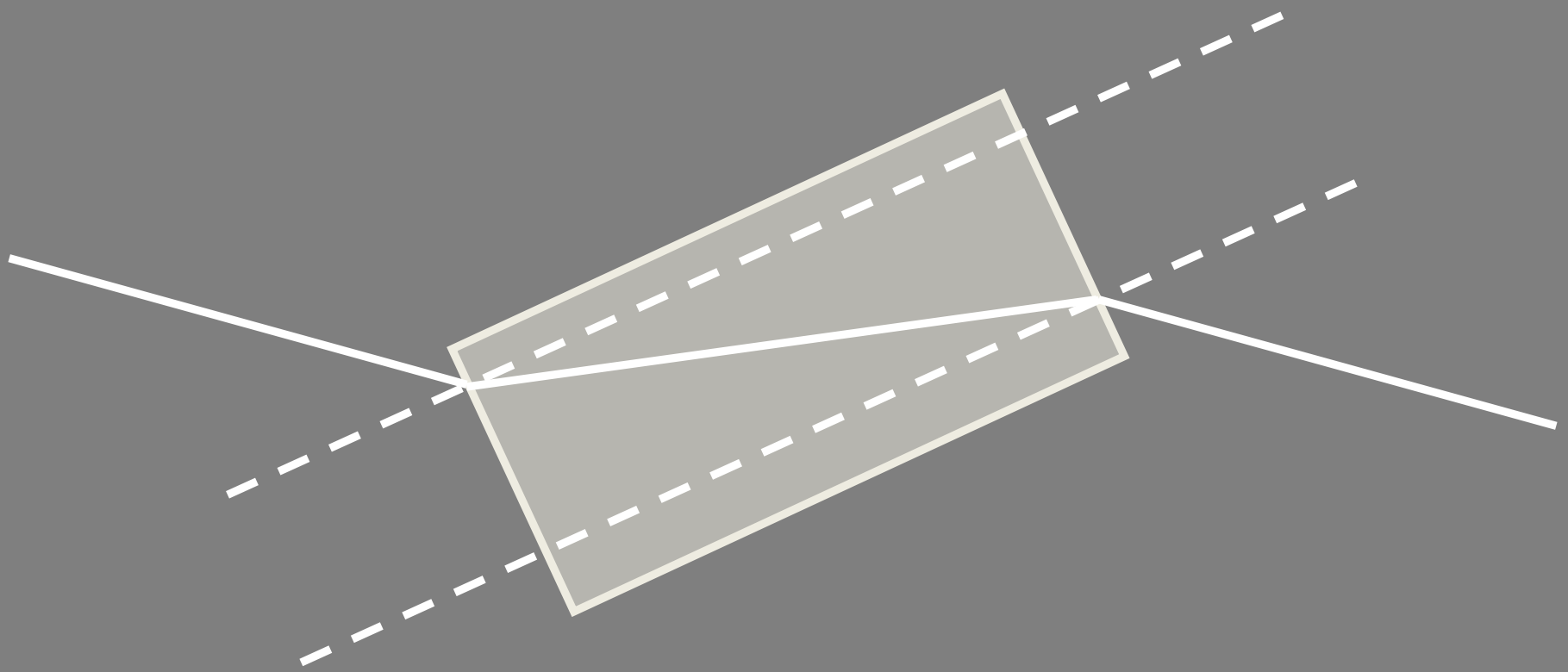


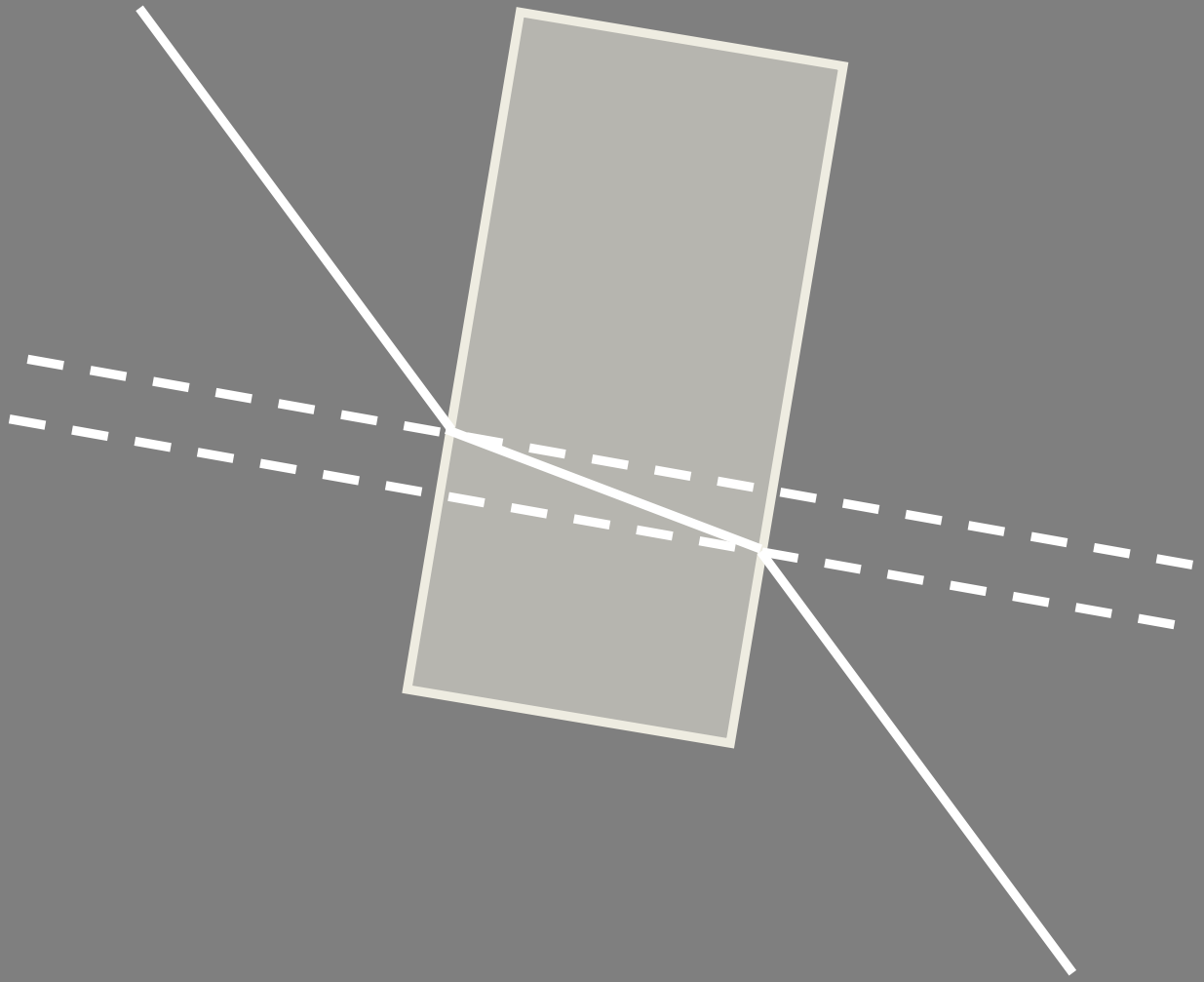
-As the ray leaves the material it speeds up and refracts away from the normal

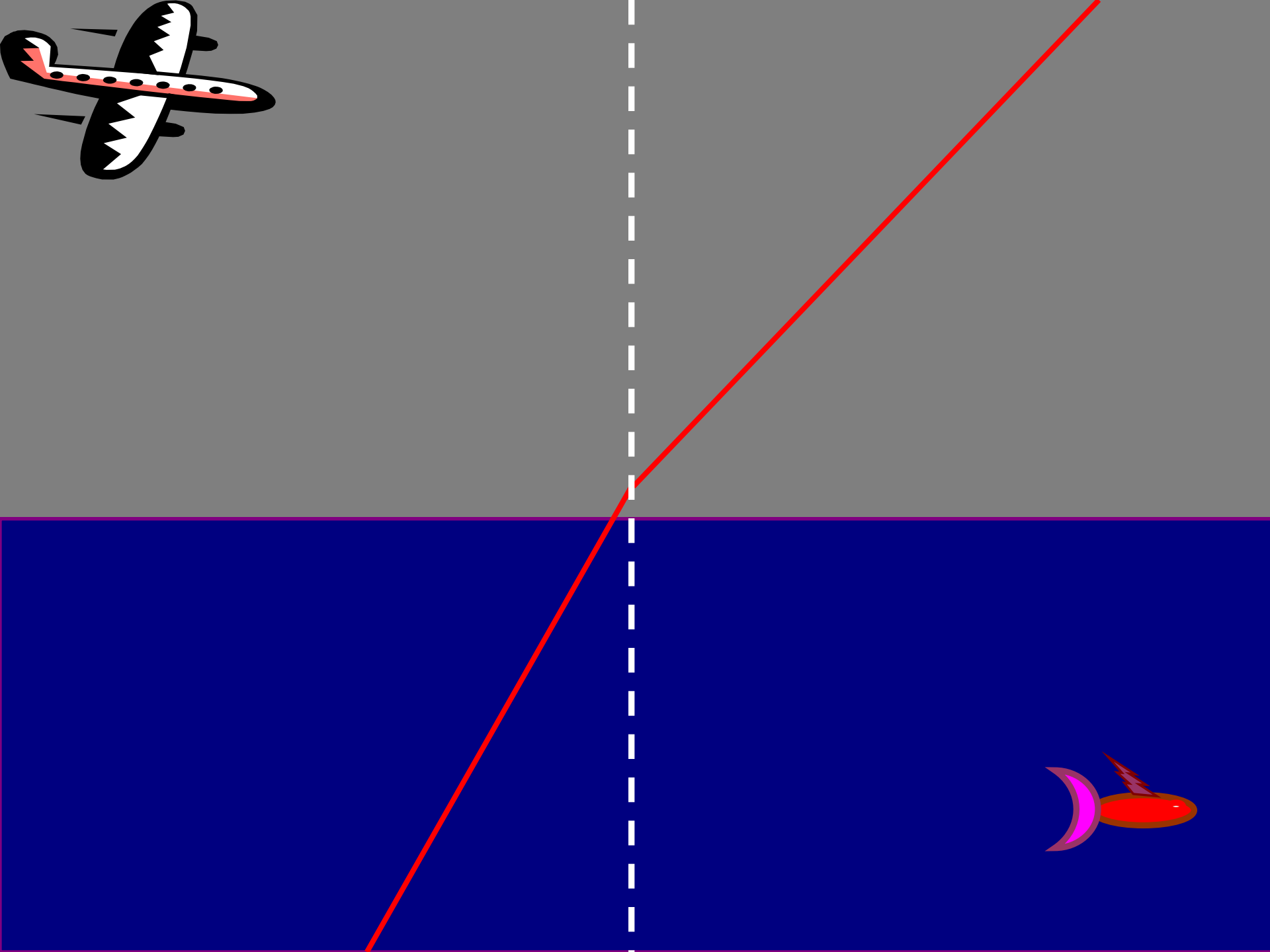


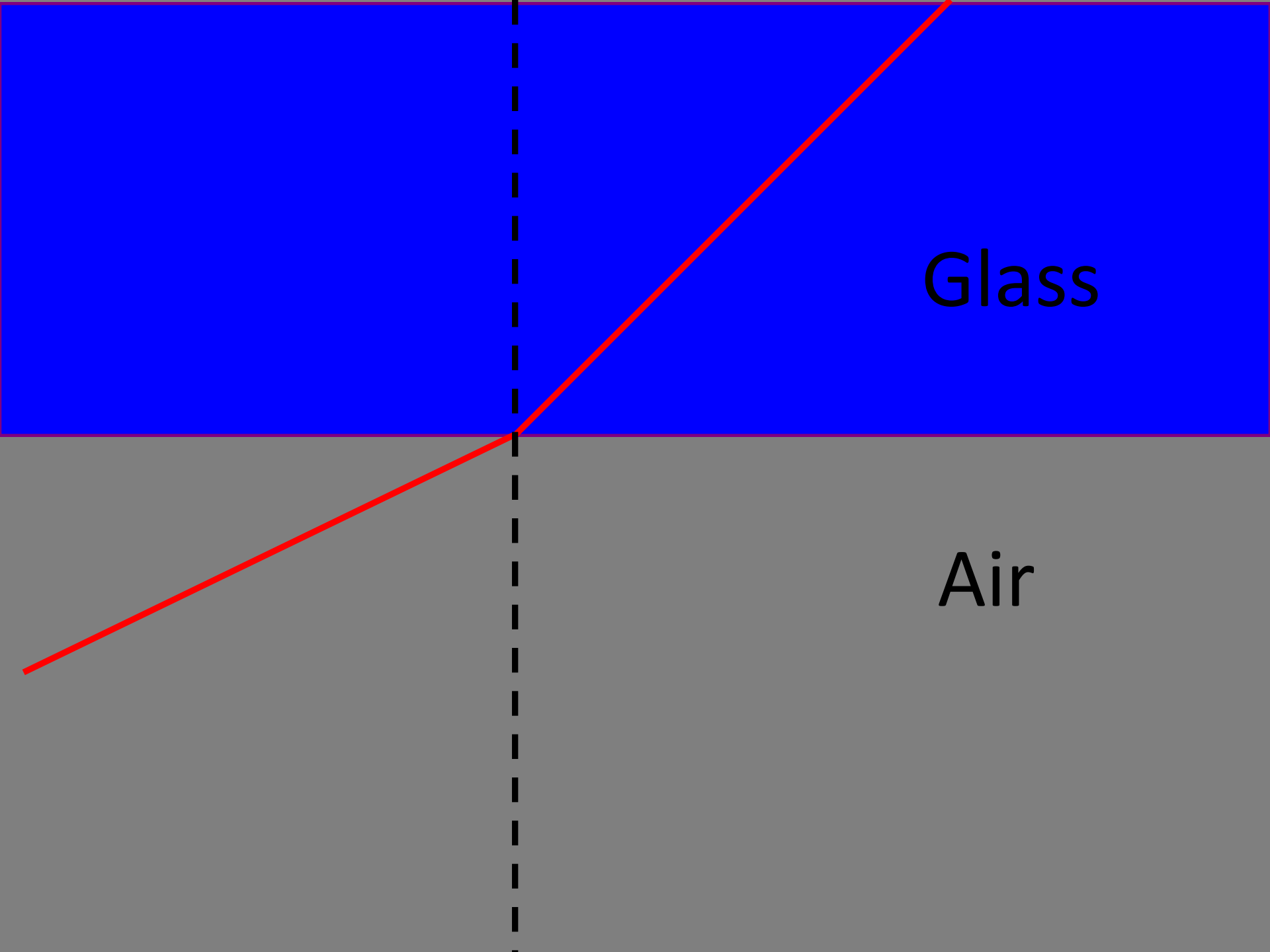






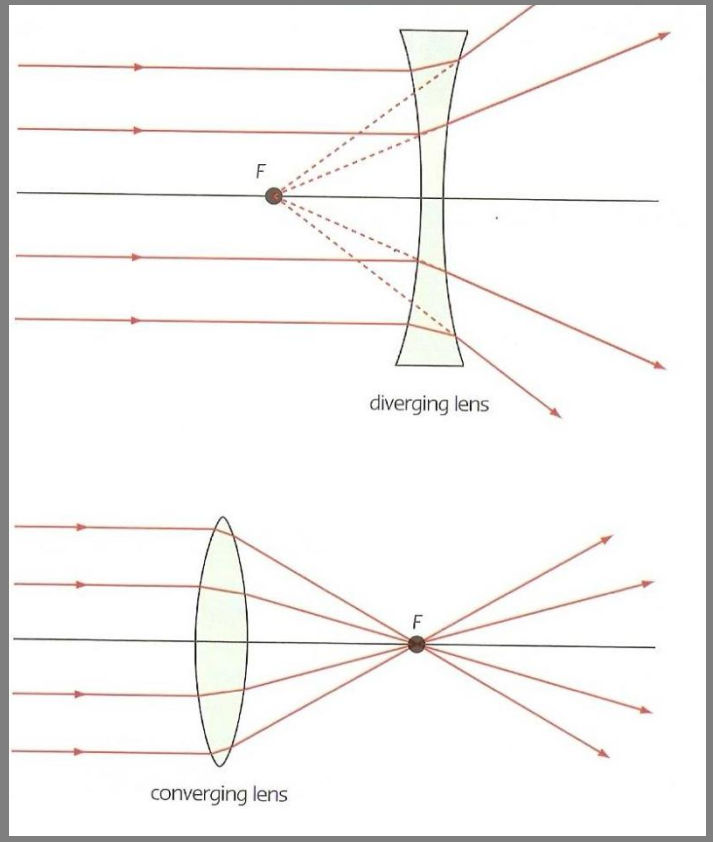





Glass
Air

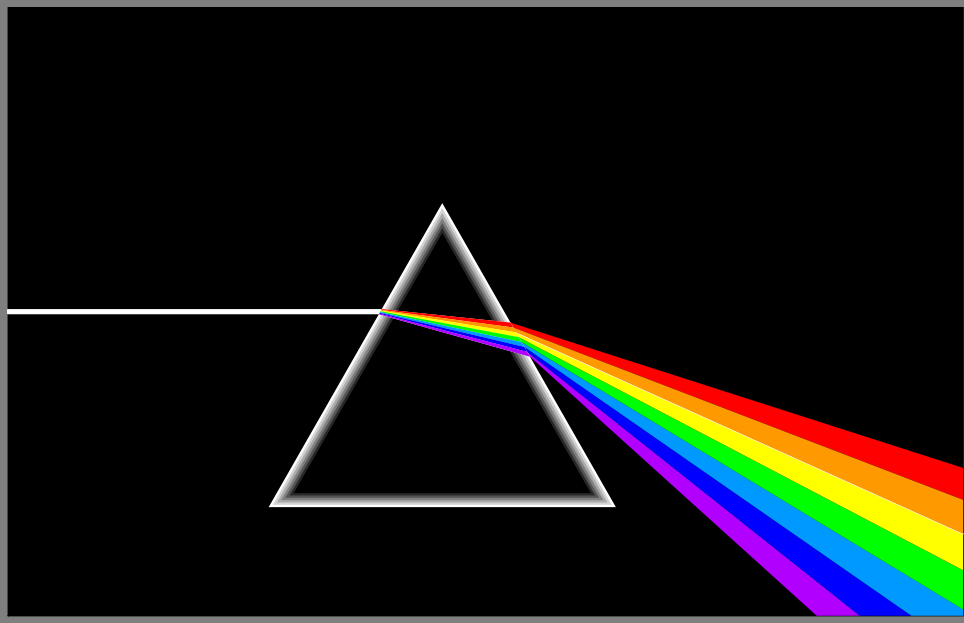
Refraction Of Light

- Refraction can be very useful in lenses
- A lens will focus light
- Concave
- Convex



Prisms

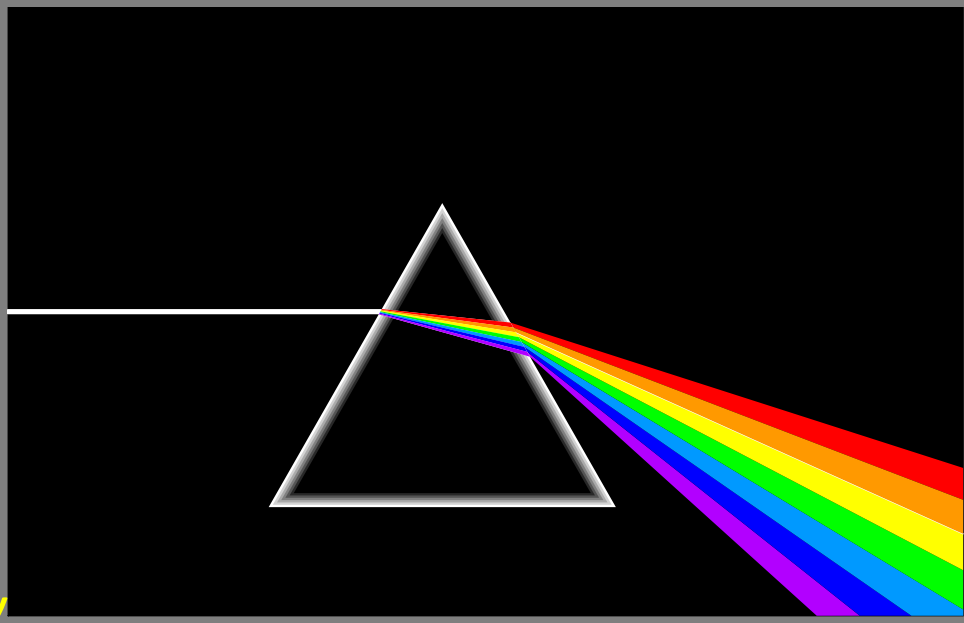
- All colour in white light travel at the same speed in a vacuum



PRisms

- White light is not a single colour; it is made up of a mixture of the seven colours of the rainbow.

We can demonstrate this by splitting white light with a prism:

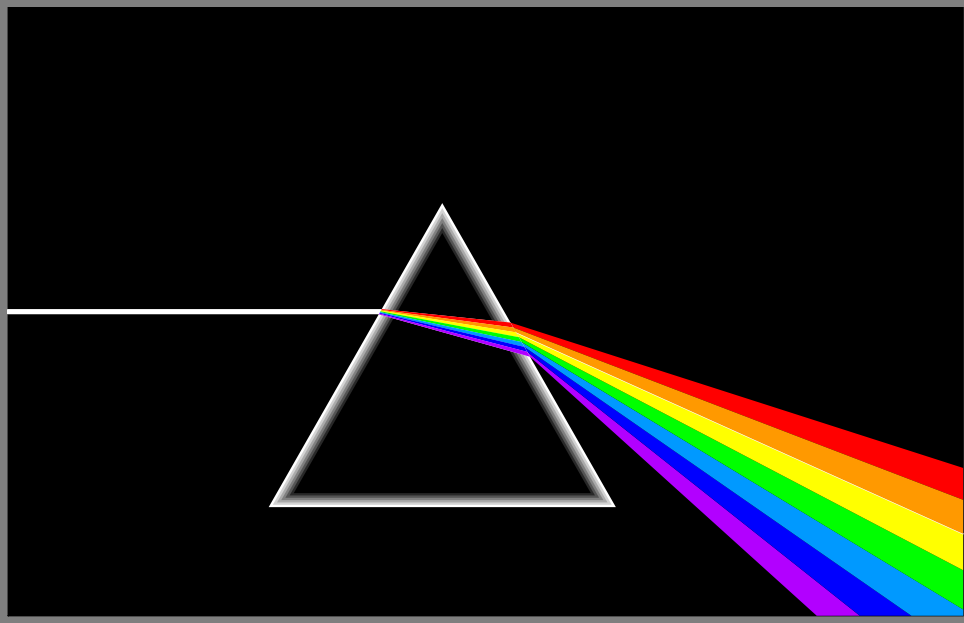


This is how rainbows are formed: sunlight is "split up" by raindrops.

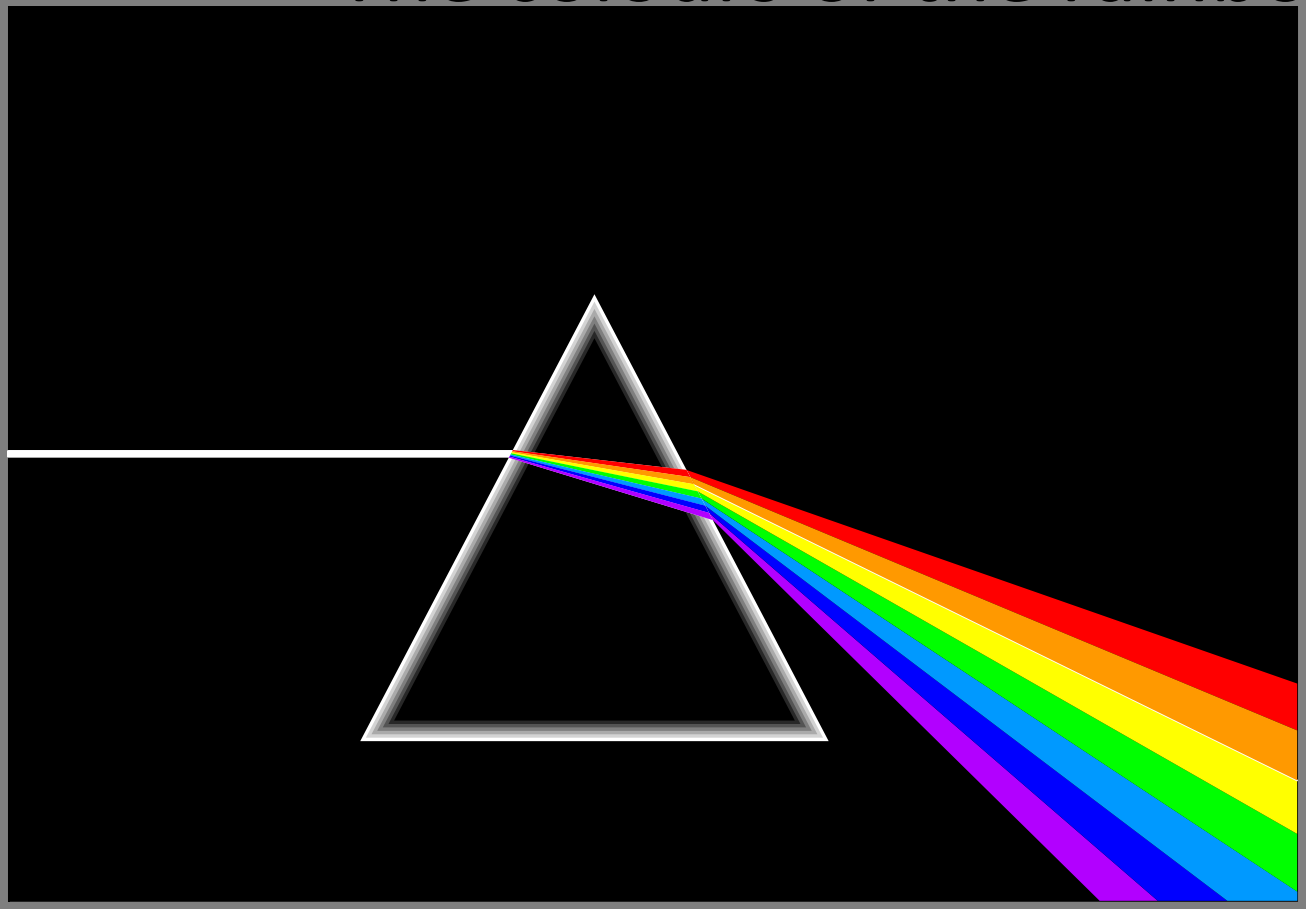
Prisms

- When the light hits a prism it refracts
- Refract at different rates

Red has a longer wavelength so it slows down less and is refracted at a smaller angle.



The colours of the rainbow:



- Red
- Orange
- Yellow
- Green
- Blue
- Indigo
- Violet

THE ELECTROMAGNETIC SPECTRUM