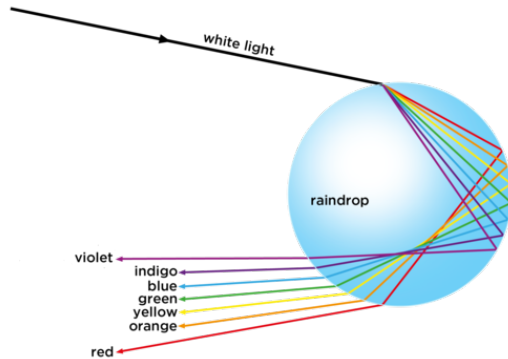




Rainbows are more than just pretty colors we see during a rain storm. They happen by 3 optical phenomenon called refraction, reflection and dispersion that happen when light enters and then exits a raindrop.

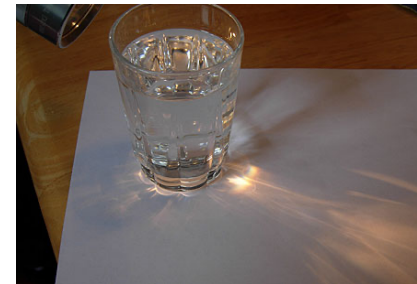
The incoming sunlight first refracts, or changes direction and disperses, or spreads out, when it enters the raindrop. The light then reflects off the back side of the drop. Finally, the light refracts and disperses for a second time as it exits the drop and we see the white light spread out to all the colors of the rainbow.



We don't see rainbows every time it rains, though. Three things need to happen in the sky to see a rainbow. First, there have to be water droplets in the air. Second, the sun has to be behind you. Third, the sun has to be low in the sky. When we put all these things together we end up in the center of the arch of a rainbow.

Do we have to wait for a rainstorm to see a rainbow? Of course not! We can create our own rainbows right in our own home.

There are two ways we can do this. The first requires a glass filled with water and a sheet of white paper under it. Either use a flashlight, or put this setup next to the window with the sun shining in and voila! a rainbow.



The other method is to put a mirror in a dish of water. Have the mirror face the sun. Place a white sheet of paper in line with where the mirror reflects the sunlight. The sun rays will enter the water, refract and bounce off the mirror to your sheet of paper.

