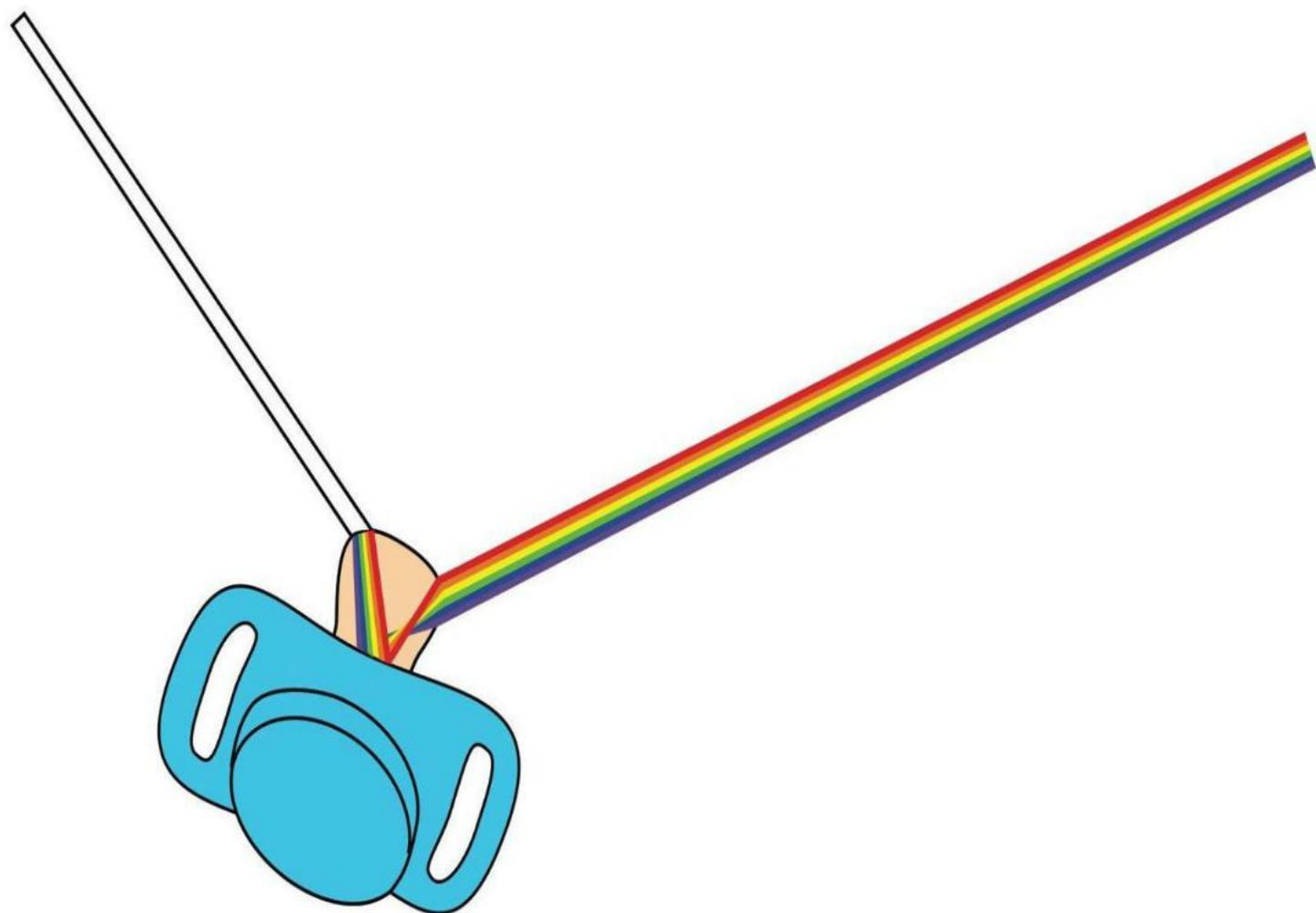


Optical Physics

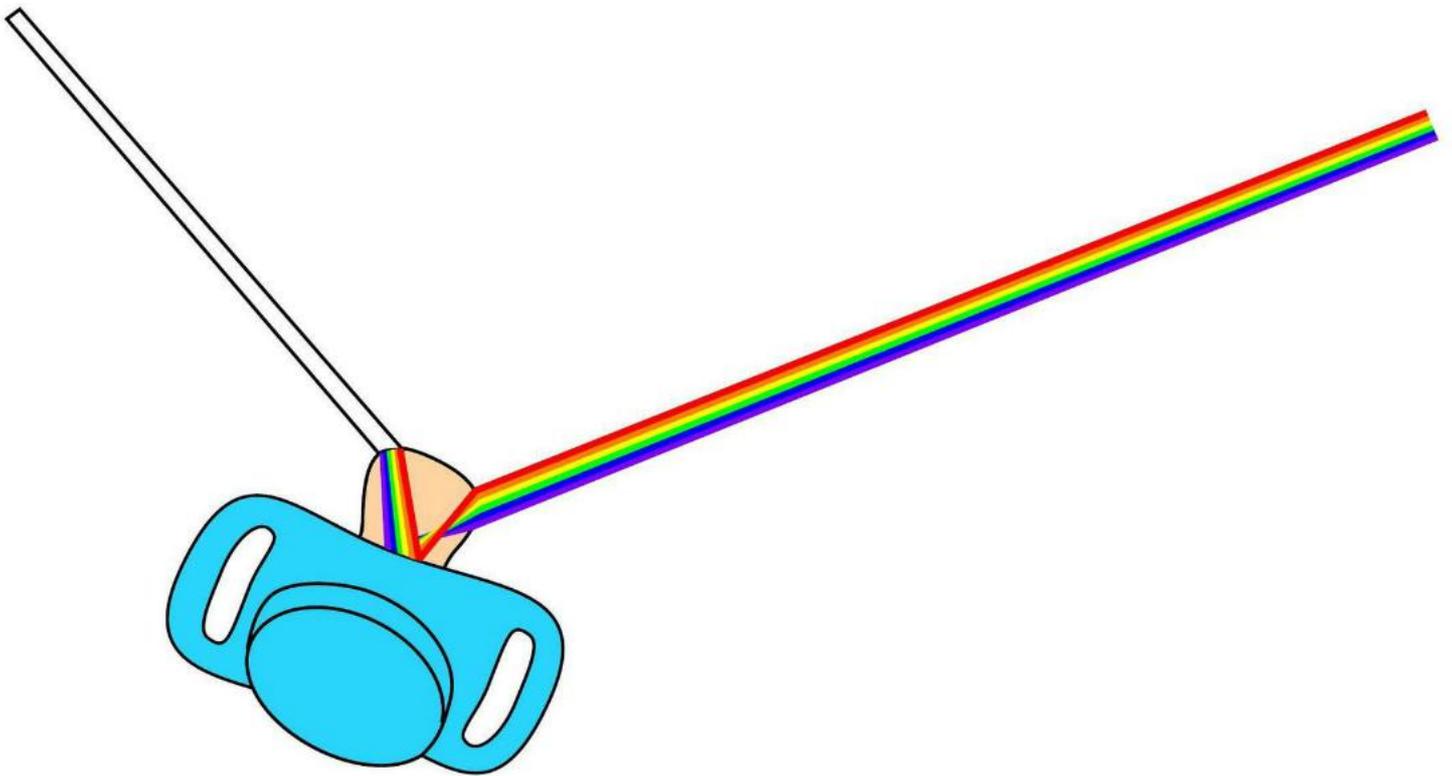
光学物理

for Babies

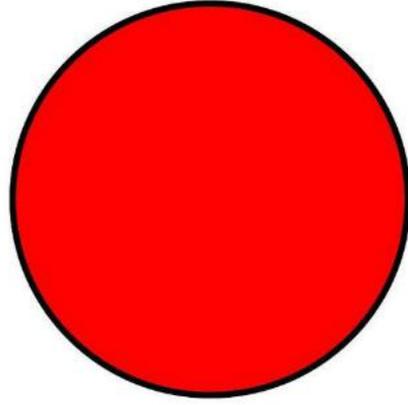


by Chris Ferrie

Optical Physics for Babies

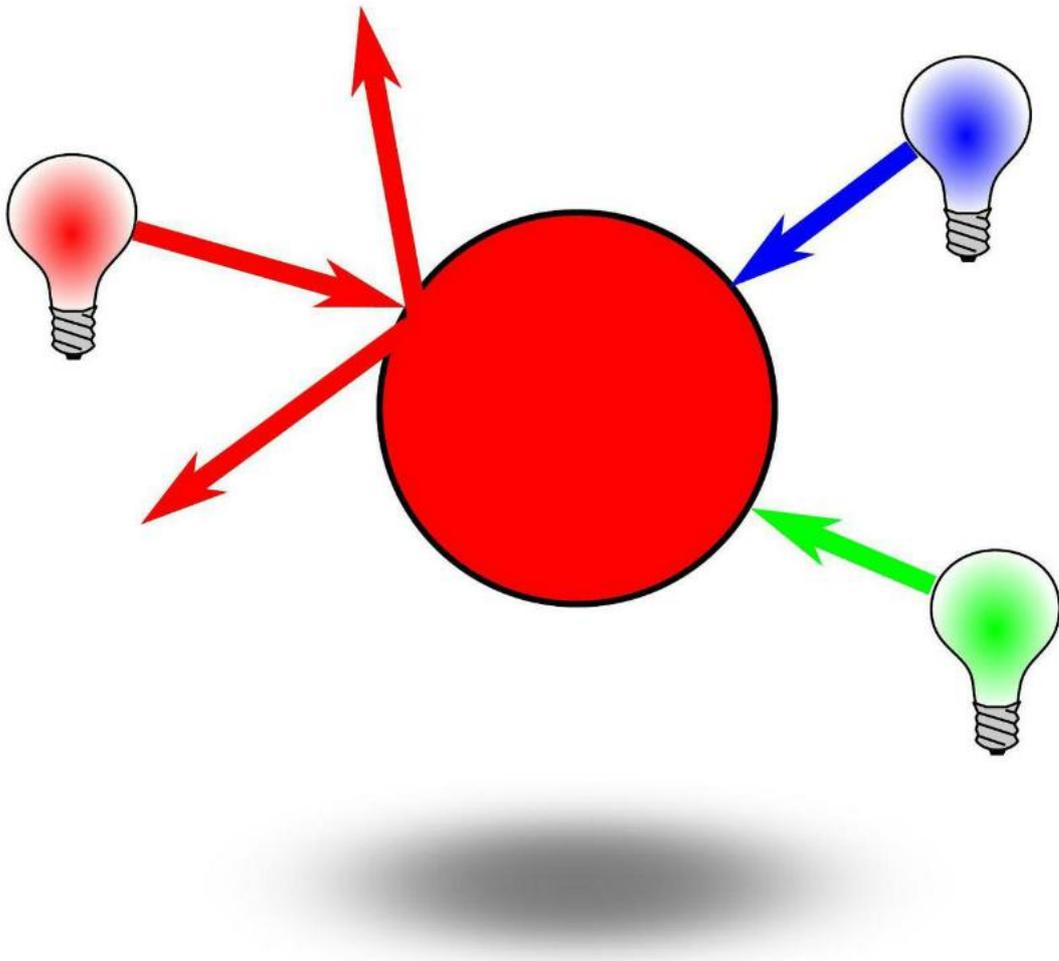


by Chris Ferrie



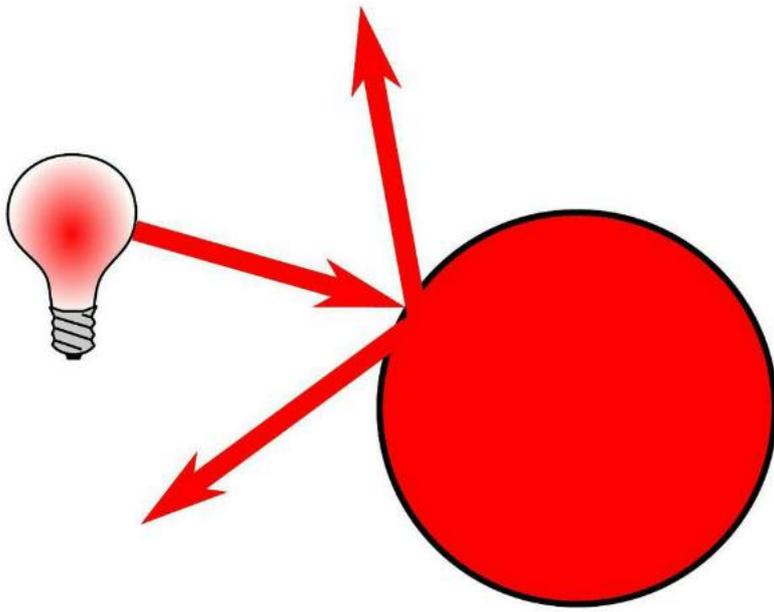
This is a ball.

这是一个球



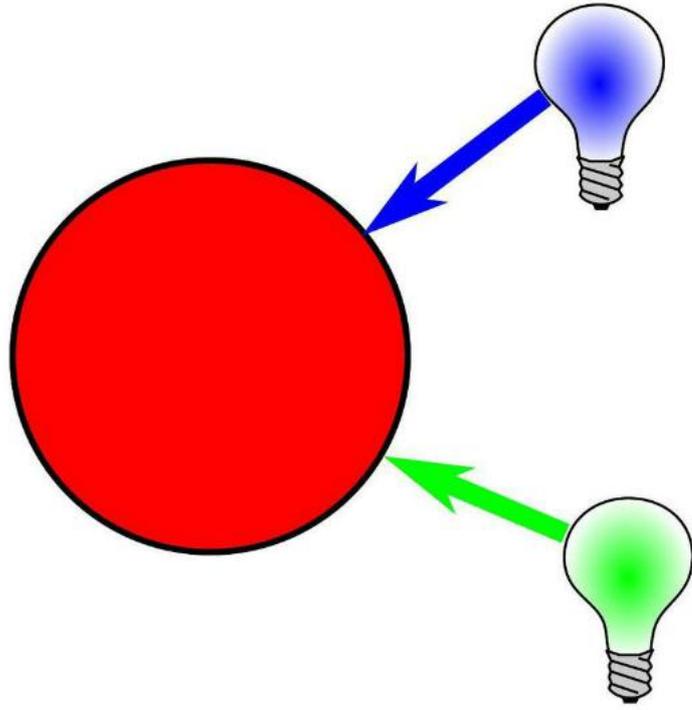
This ball is red.

这个球是红色的



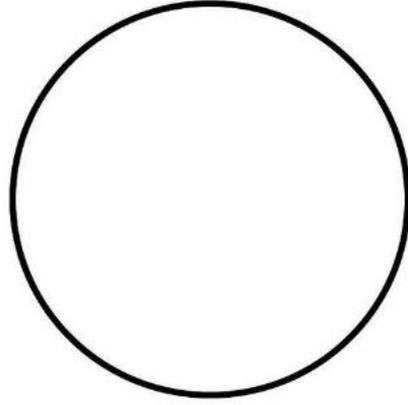
It reflects **red** light.

它反射红色的光



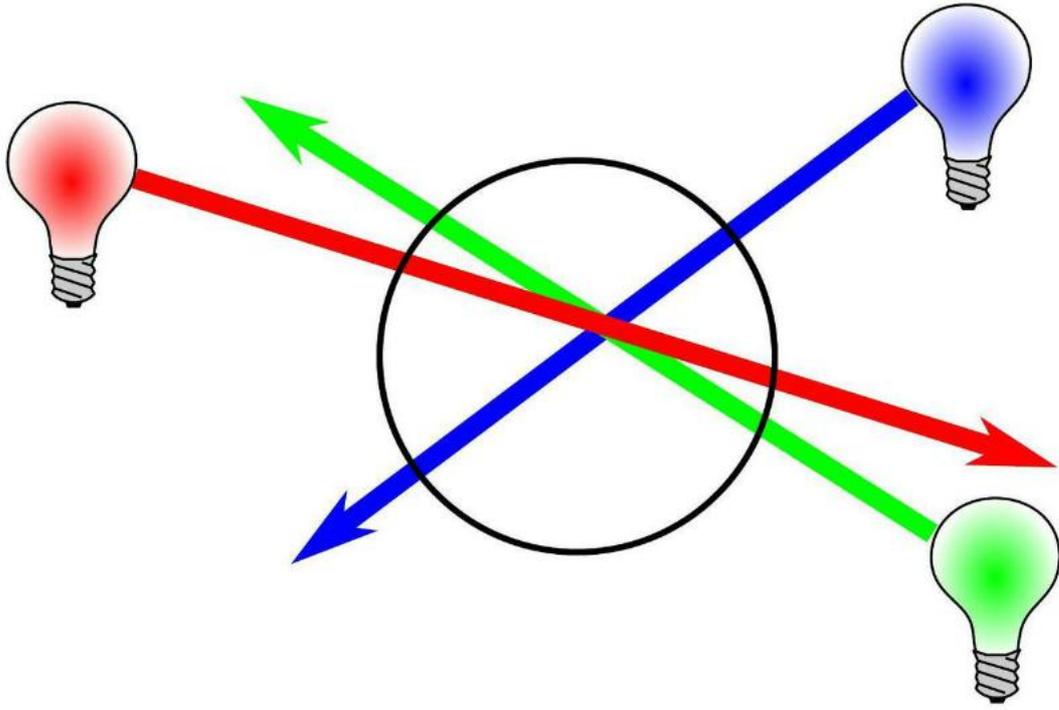
**It absorbs blue
and green light.**

它吸收了蓝色和绿色的光



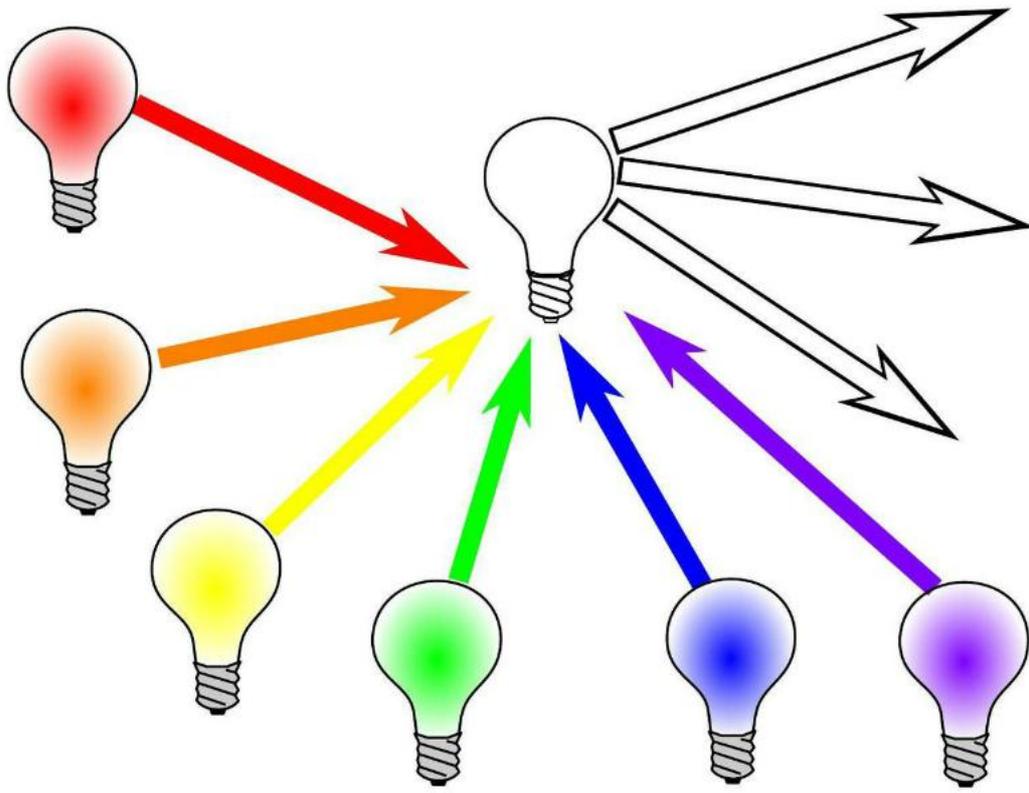
This is a clear ball.

这是一个空的球



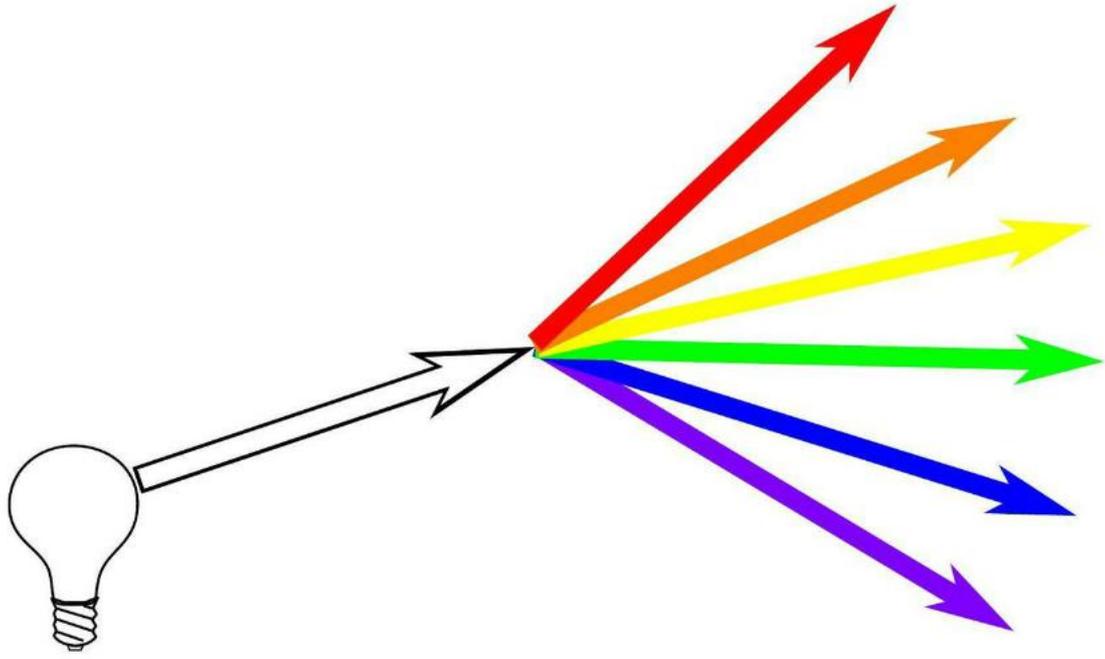
**All colors pass
through it.**

所有的颜色都能穿过它



**All the colors
combine to make
white light.**

所有的颜色相结合产生白色的光



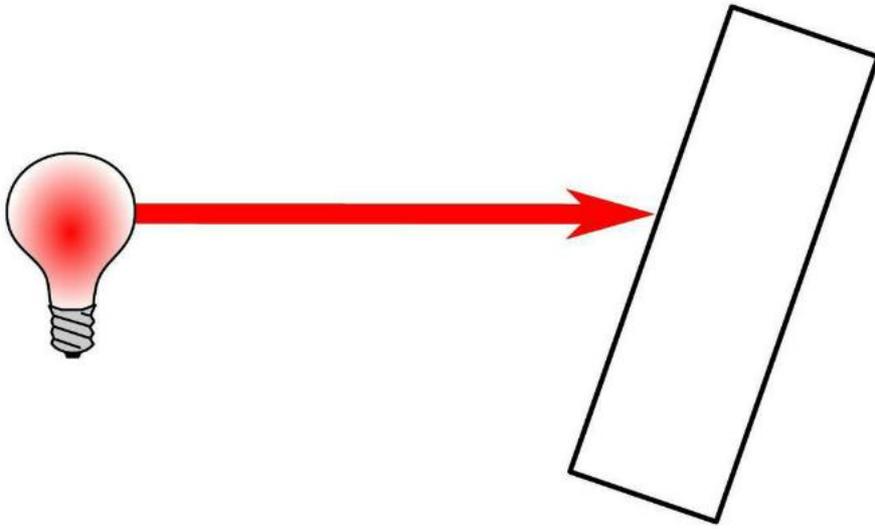
**And white light
contains all the
colors.**

并且白色的光包含所有颜色



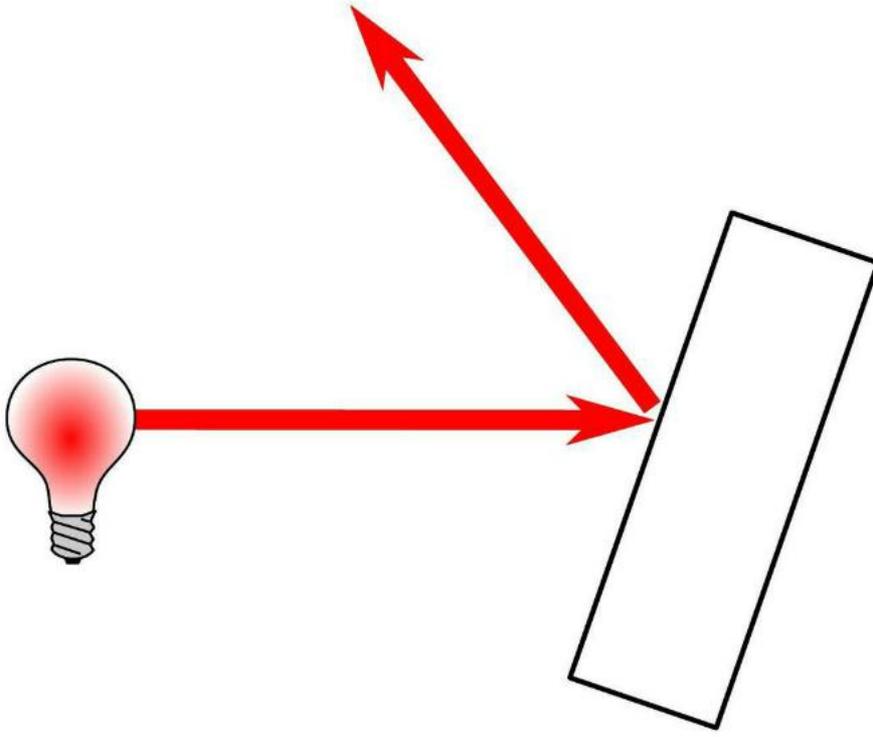
Light travels in a straight line...

光以直线传播



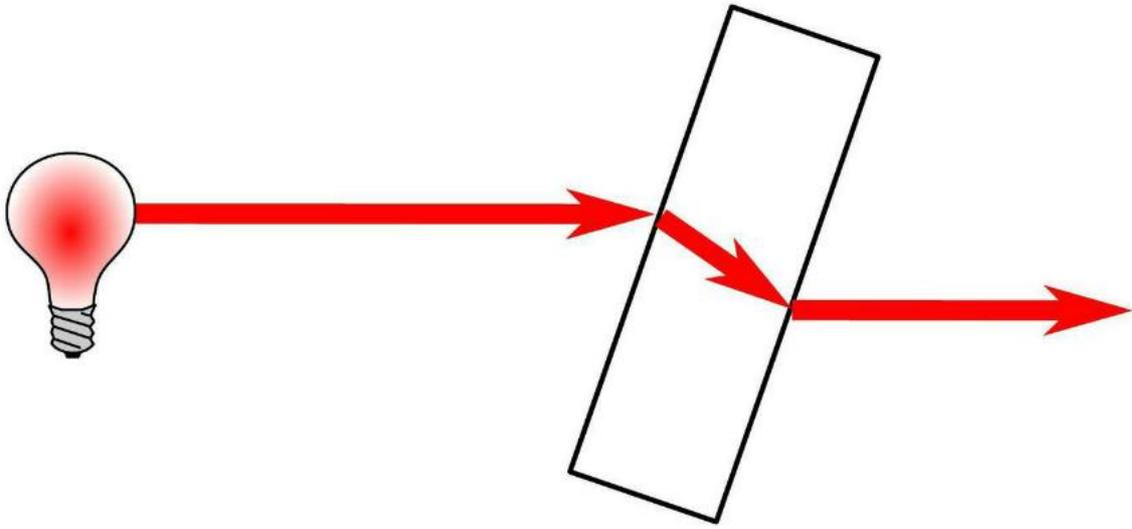
**until it hits
something.**

直到它遇到了障碍



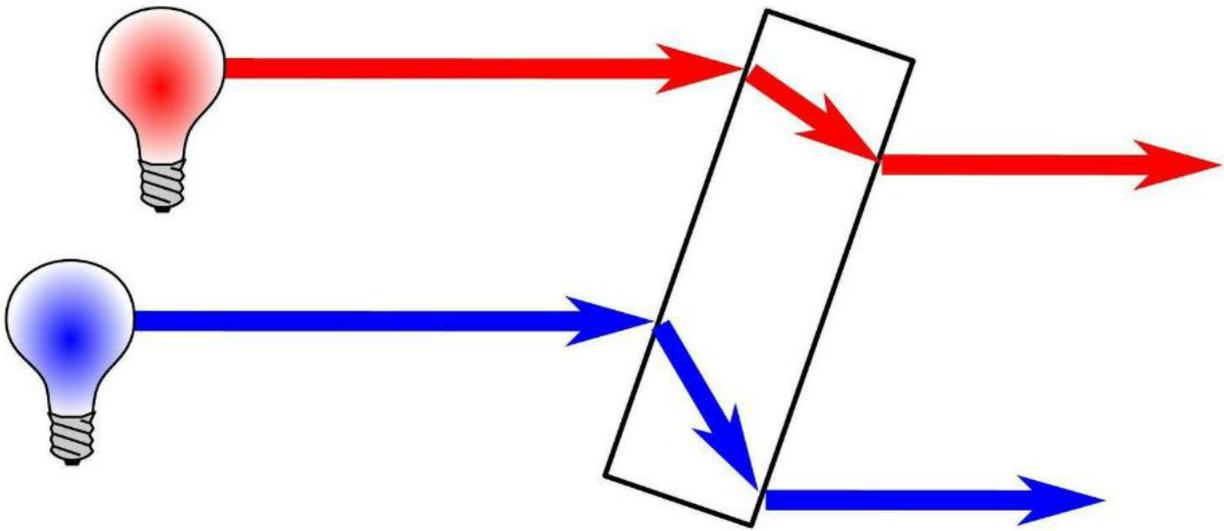
It can be reflected,

它可以被反射



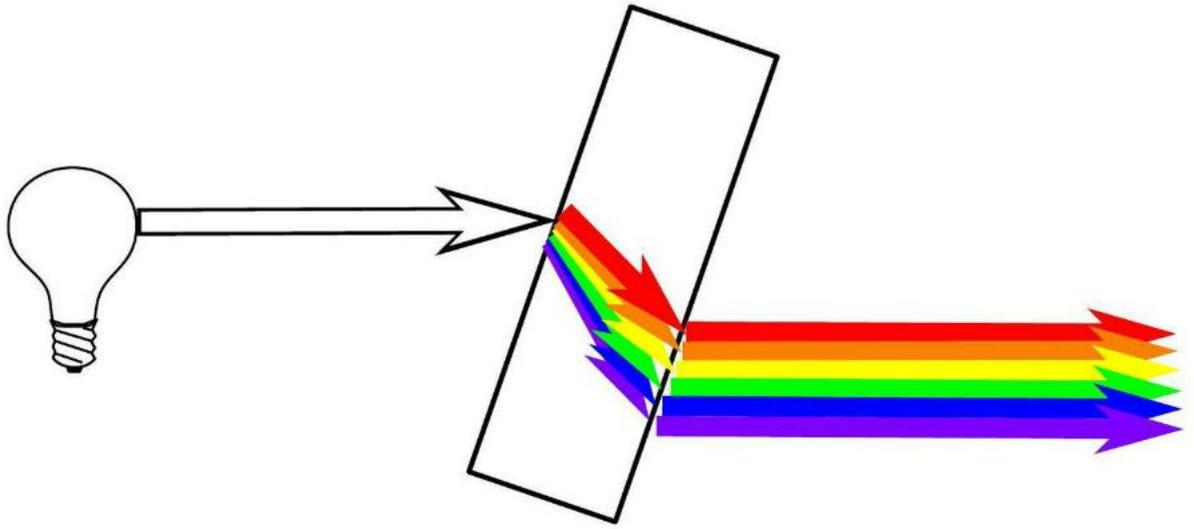
or refracted.

或者折射



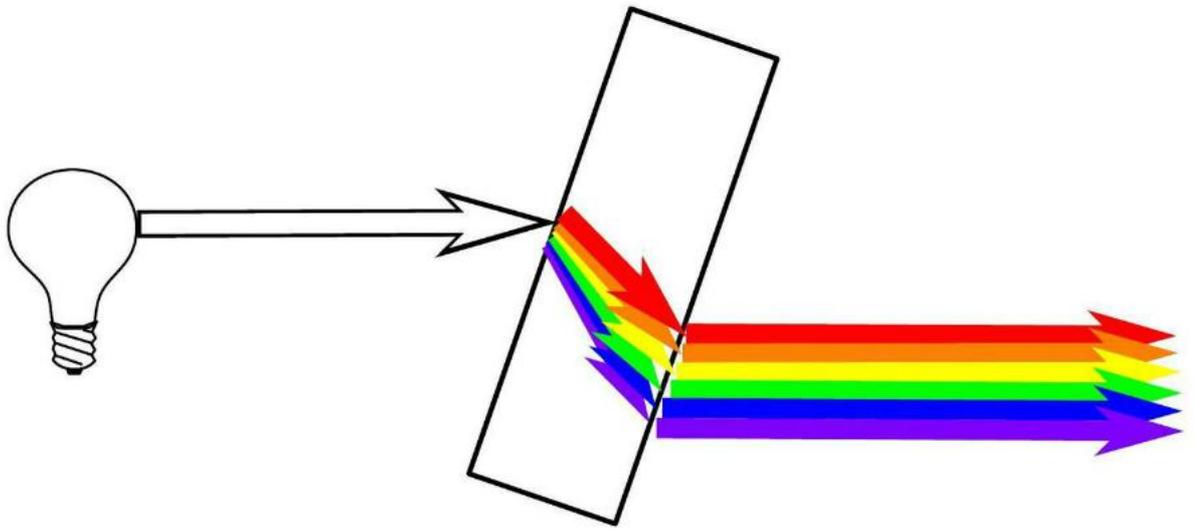
Red is refracted
less than **blue**.

红色的光折射的角度小于蓝色的光



**This is how white
light turns into
the colors.**

这就白色的光变成彩虹的原因



**We call this
dispersion.**

我们把这个叫做分散

Least refracted to

少的折射到多的折射:

most refracted:

Red

红

Orange

橙

Yellow

黄

Green

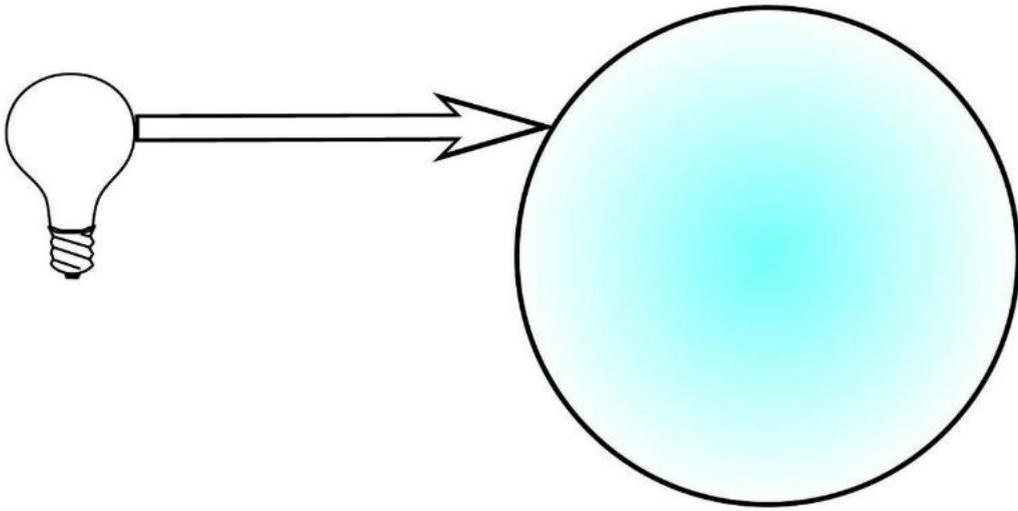
绿

Blue

蓝

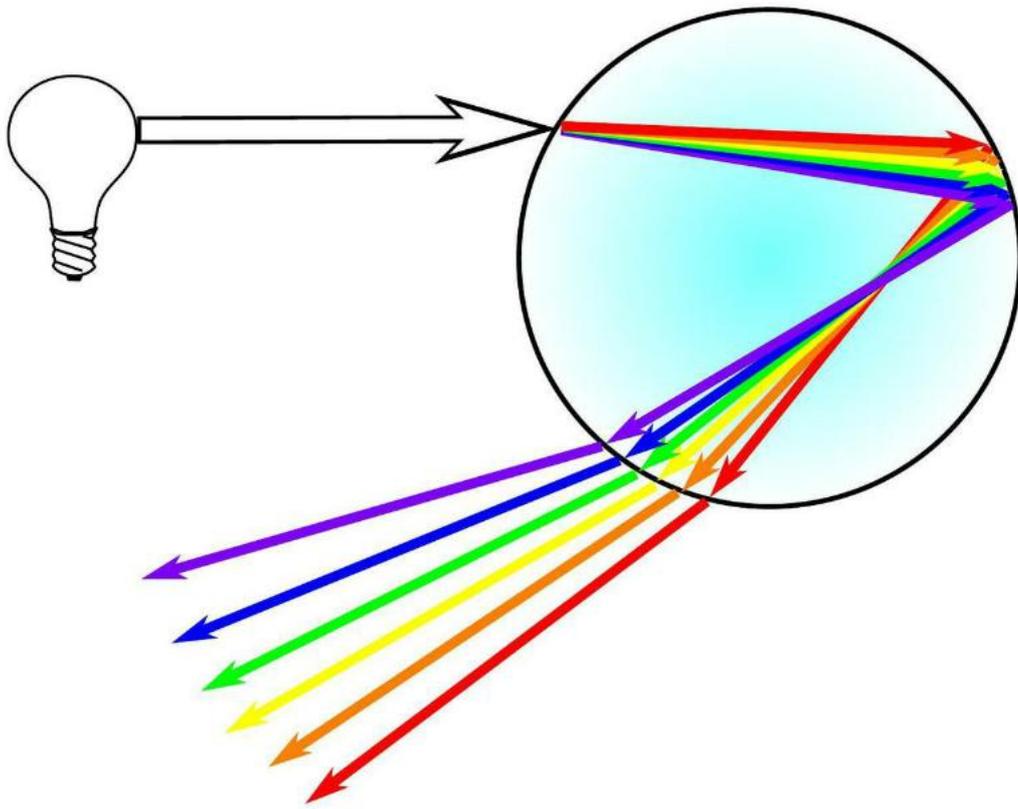
Violet

紫



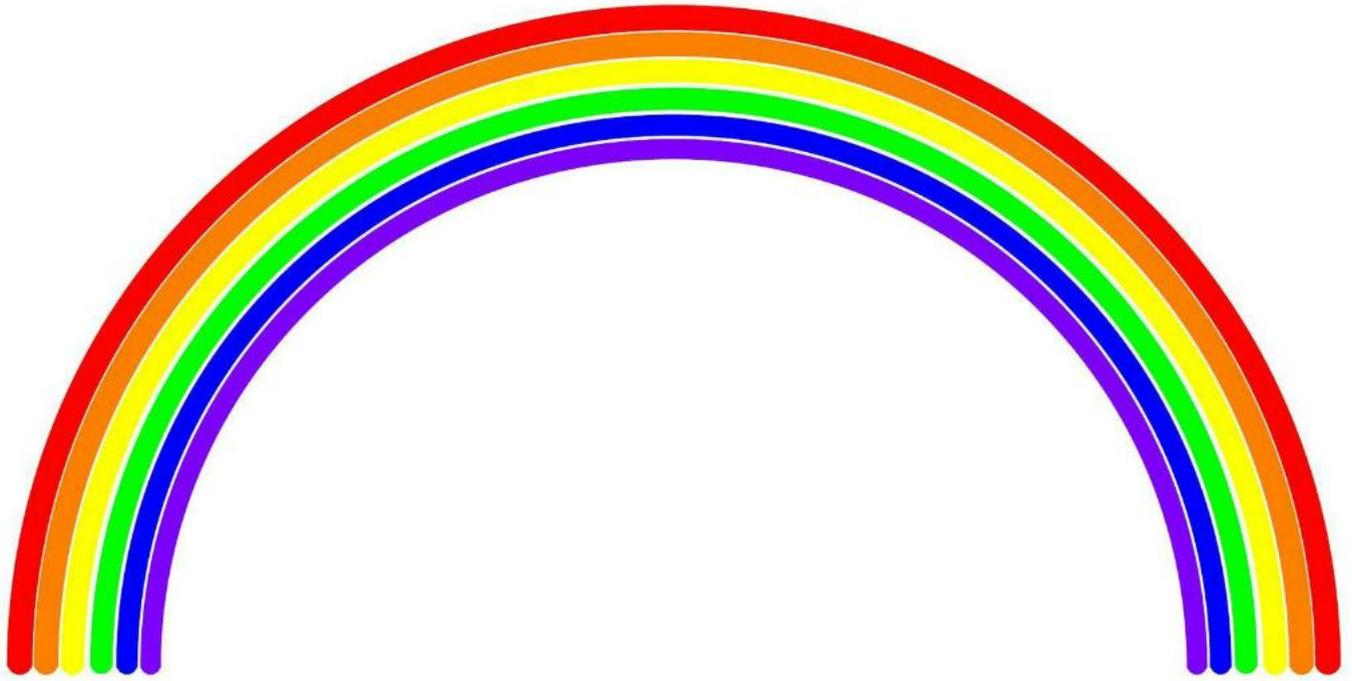
**If white light
hits a rain drop...**

如果白色的光遇到了一个雨滴。。。



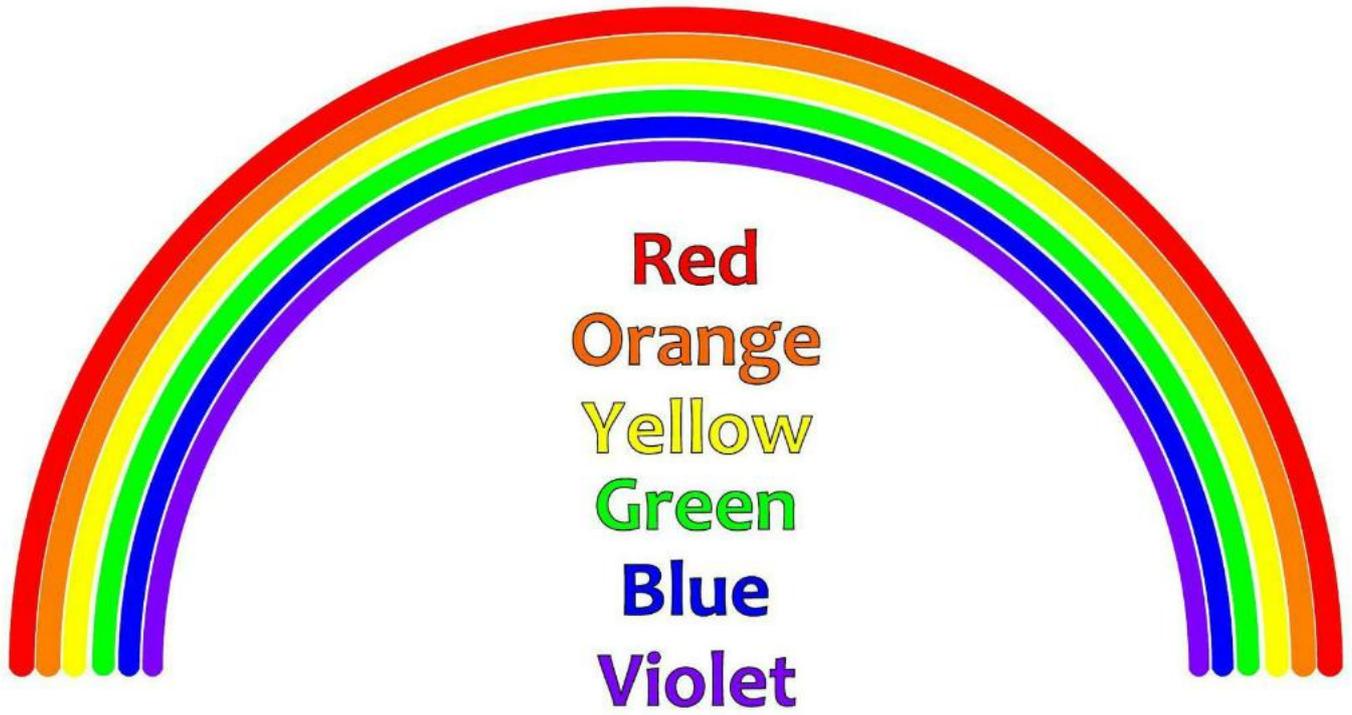
out comes a
rainbow!

就出现了彩虹！



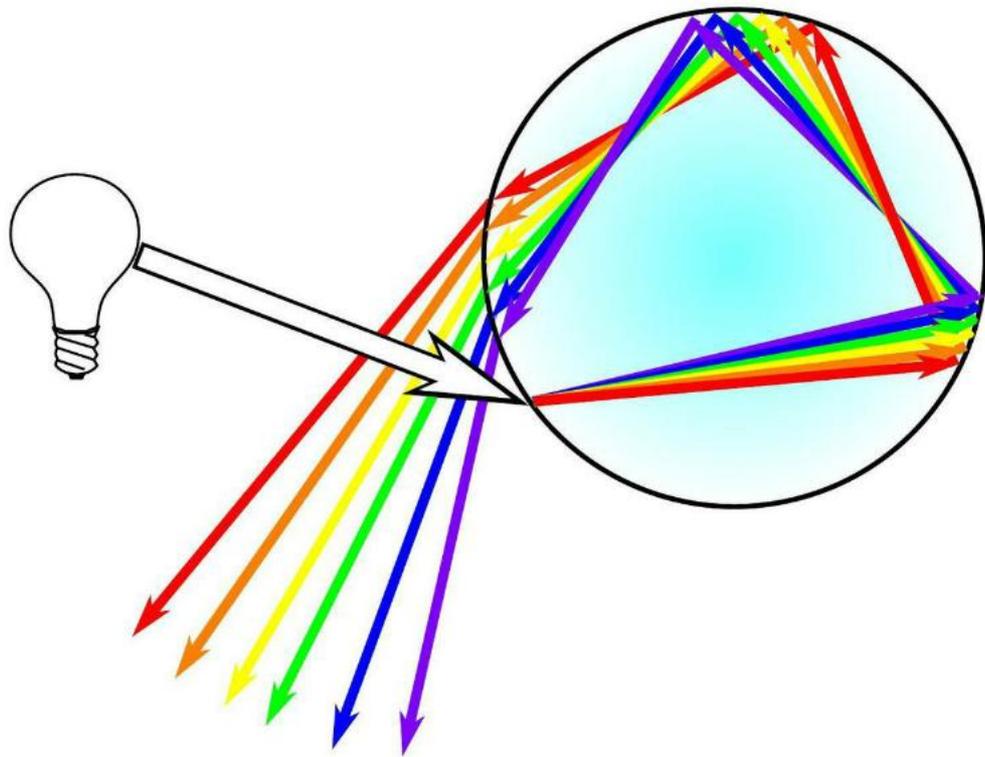
**On a sunny and
rainy day, it looks
like this.**

在一个阳光明媚的雨天，它看起来像这样



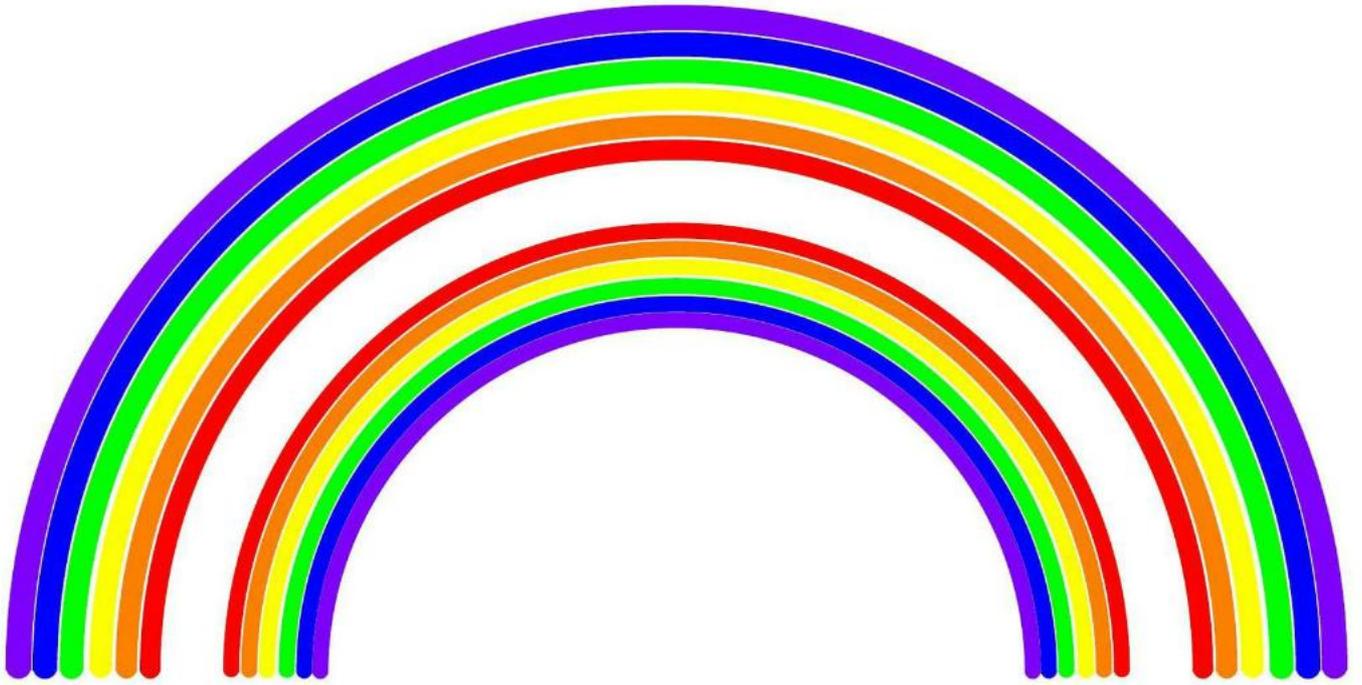
**Remember the
refraction order!**

记住折射的顺序！



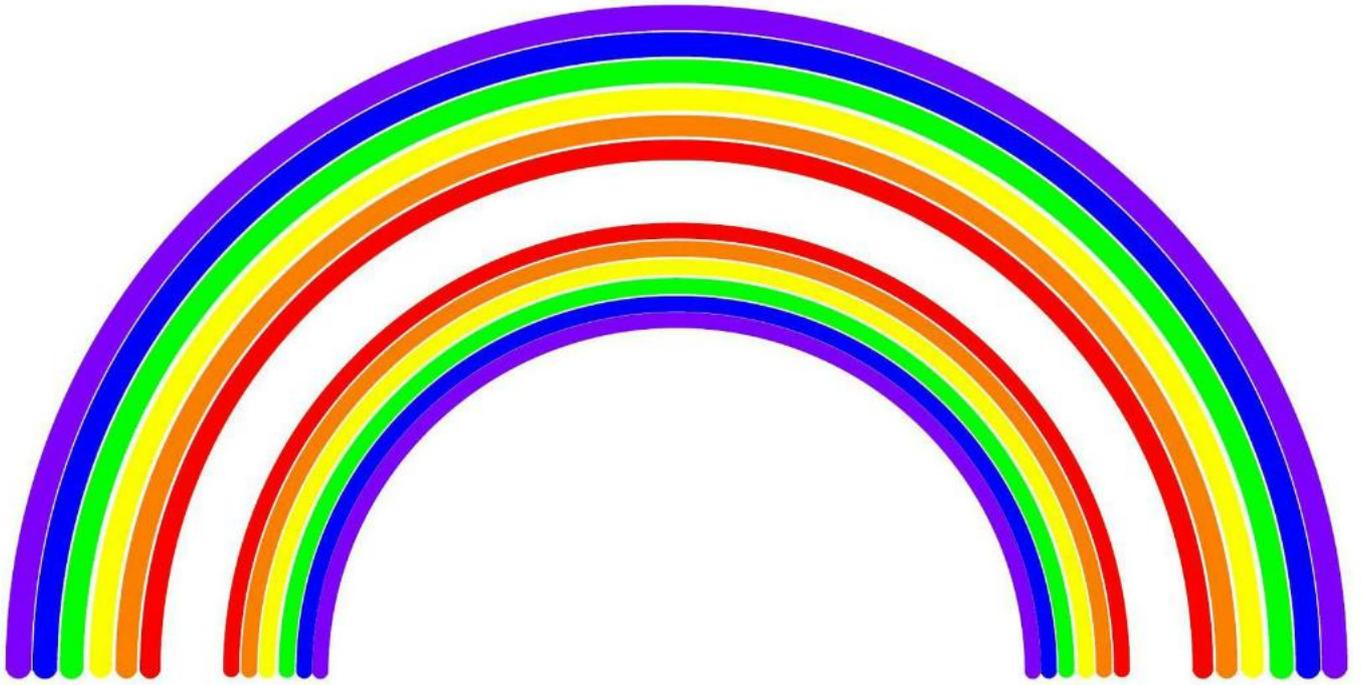
**The light can be
reflected two times
inside the rain drop.**

光在雨滴里面折射了两次



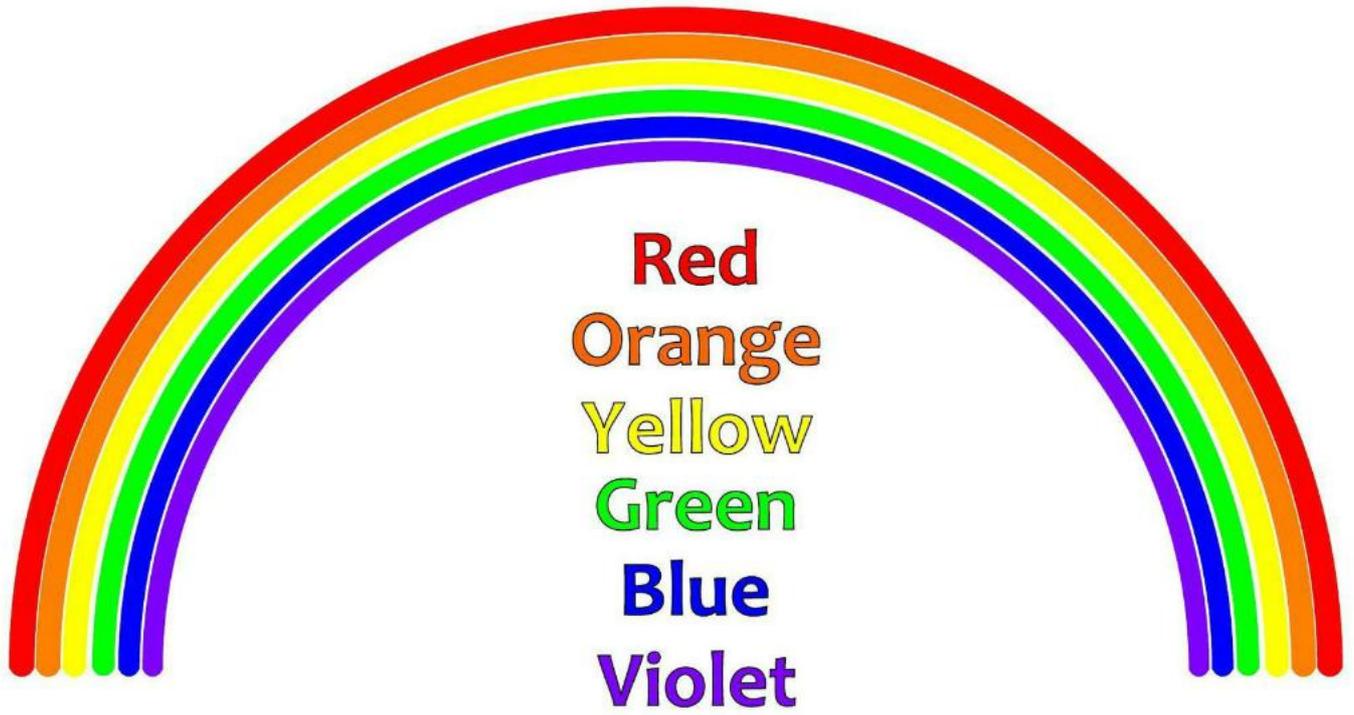
**This makes a
second rainbow!**

这产生了第二个彩虹！



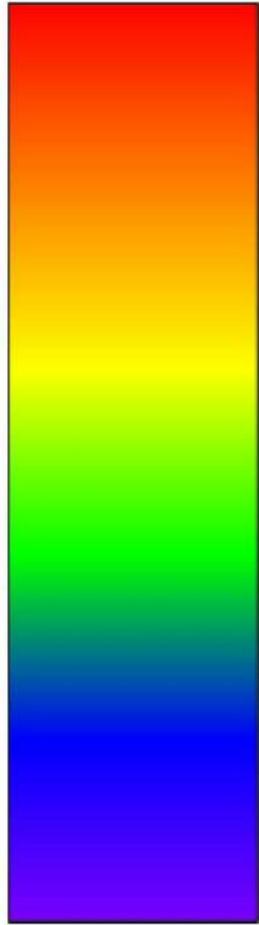
**But the order of
the color is
reversed.**

但是颜色的顺序是相反的



**There are also more
colors than these.**

还有比这个更多的颜色



Red

Orange

Yellow

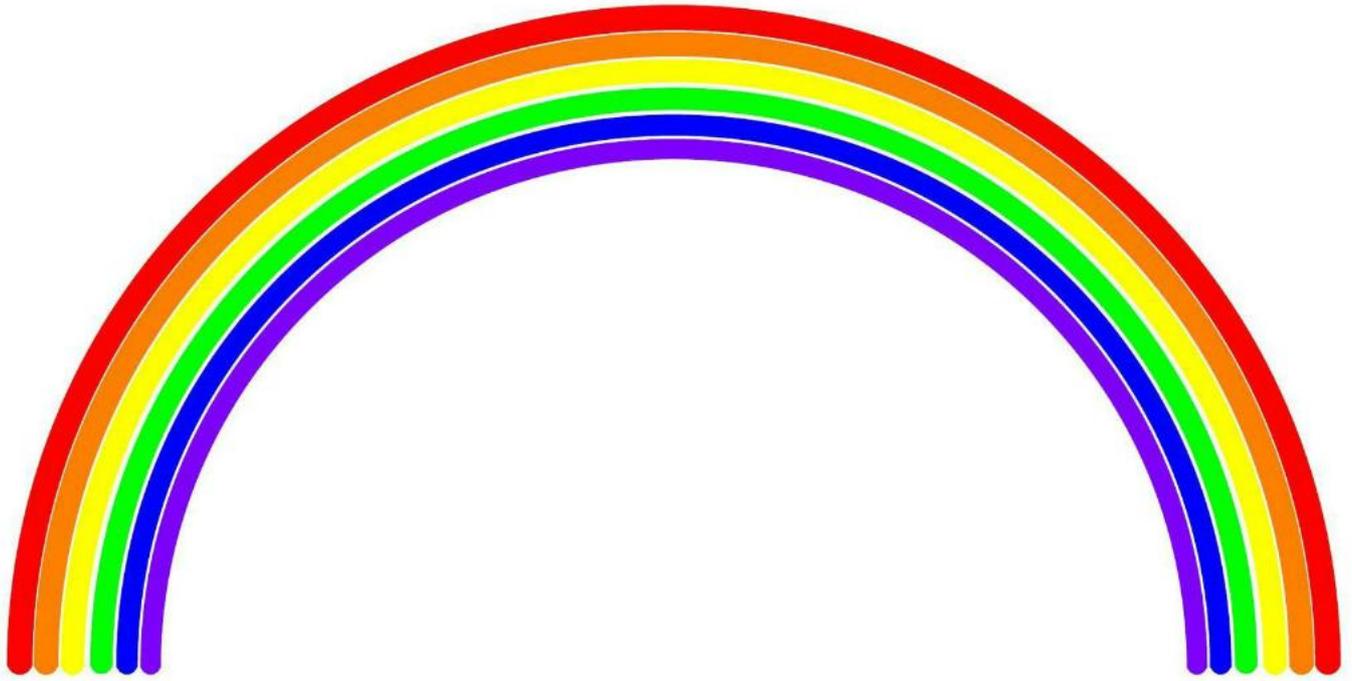
Green

Blue

Violet

**There is a whole
spectrum of colors.**

这有一个颜色的整个光谱



We imagine
rainbows like this.

我们想象这样的彩虹



**But they look more
like this.**

但是它们看起来更像是这样



**So on the next
sunny and rainy day,
see if you can spot
a rainbow.**

所以在下一个阳光灿烂的雨天，
看看你能不能看到彩虹