

LET'S MAKE A NEWTON'S DISC!

From the time of the Romans, people noticed that spinning objects with color and markings create a blurred image. In the year 165, Ptolemy observed this about a spinning potter's wheel. The colors aren't really mixing together, it's just that our eyes can only "see" about 15 light changes per second. Isaac Newton was the first to investigate how this observation was connected to the nature of light. In nature, a rainbow is light being refracted (by water droplets) into the colors of the visible spectrum. On a Newton's disc, the spinning colors are being seen and interpreted by our brains as "white." For an interactive online flash version visit:

<https://tdflashzone2.000webhostapp.com/Newtons-Disk/>

TO MAKE YOUR OWN DISC, YOU'LL NEED:

- A PIECE OF CARDBOARD
- A PENCIL, SCISSORS, AND A GLUESTICK
- SIX COLOR MARKERS (Red, Orange, Yellow, Green, Blue, Violet)
- A LONG PIECE OF YARN

STEP 1: Using the markers, color in the six segments below. Remember "ROY G BIV!"

STEP 2: Using the gluestick, glue the colored circle to your piece of cardboard.

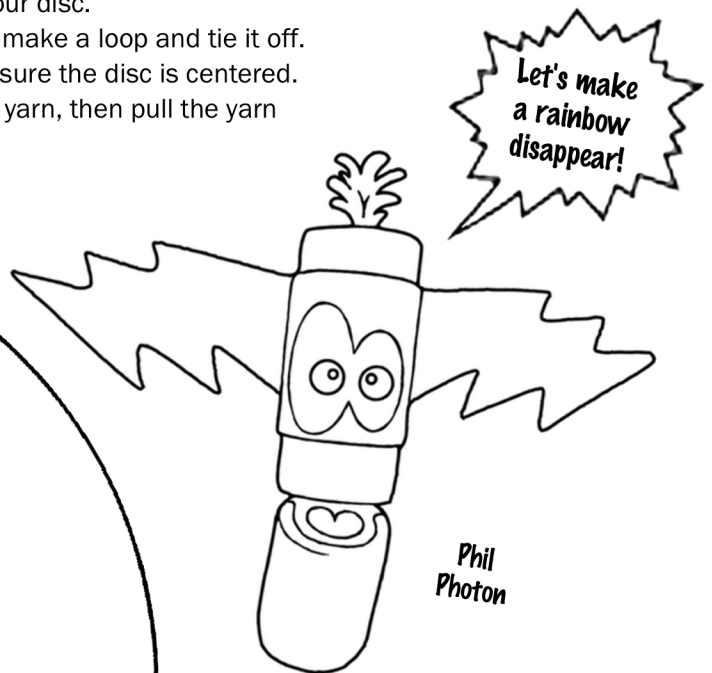
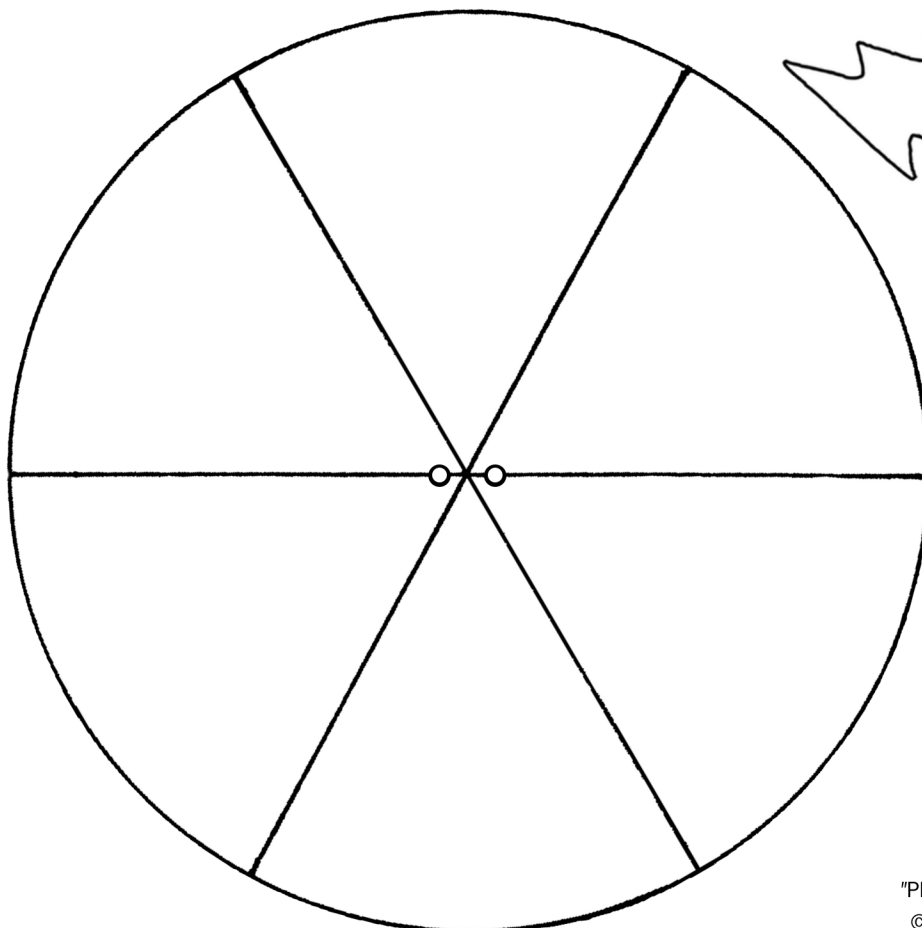
STEP 3: Using the scissors, cut out the cardboard circle.

STEP 4: Use the pencil to poke two holes in the center of your disc.

STEP 5: Thread your piece of yarn through the two holes to make a loop and tie it off.

STEP 6: Put your thumbs in the yarn and pull it tight. Make sure the disc is centered.

STEP 7: Twirl the disc quickly (like a jump rope) to twist the yarn, then pull the yarn to make the disc spin. OBSERVE!



With a pencil, punch two holes in the middle of the disc. Thread the yarn through these holes and knot it.