Build Your Own SynchroDisc Spinner

**Supplies:**
- CD or DVD, electrical tape
- 3V Button-cell Battery
- Light Emitting Diode
- Dot Candy, Toothpick
- Tape, Glue Gun, Penny

**What to do:**
1. Light up your LED by putting the long lead of LED next to (+) side of battery, the short lead next to (-).
2. Use two small pieces of tape to attach each lead of the LED to each side of the battery to keep the LED lit.
3. Glue the battery with lit LED to the colorful side of the CD. Glue a penny to serve as a counterweight.
4. Place a toothpick in the center of a Dot candy. Insert the Dot curved side down into the center of the CD.
5. Dim the lights and spin your disc as fast as you can! Your SynchroDisc will emit light and brighten up the room!

**The Science of SynchroDiscs**

Electrons from the battery flow through the LED in one direction. The electrons are charged particles that move through a special material inside of the LED and release energy in the form of photons. When you attach this light emitting diode to a disc and spin it, the electrons move in a circular motion and release brilliant photons of light, just like in a synchrotron!

Just like a spinning top, once you get the CD spinning around a vertical axis, it just doesn't want to stop! If you exert enough force (or torque) on your toothpick, the CD will continue spinning for a long time. For fun, try adding different amounts of weight (pennies) to different places around the SynchroDisc. Does it allow the disc to wobble more or less? Does it spin for a longer or shorter period of time?

**Did You Know?**

LEDs provide directional light emission. They can direct light right where it is needed! In this way, LEDs act like a synchrotron!