Spirograph sets are a geometric drawing activity, first sold in 1965, which produce artistic, elliptical roulette curves. To create repeated curves, a small shape with geared edges moves repetitively around the inside of a larger, geared shape. Create your own household version of a spirograph and read more about its engineering and history! In honor of Earth Day, get inspired by this video illustration of the Earth and Venus orbiting around the Sun.

RECOMMENDED AGE/SKILL LEVEL:
Recommended for Children 8+, younger kids can participate once the disc is made.

MATERIALS

- Corrugated cardboard
- Scissors
- Scotch tape roll or other empty, round form
- Pens in various colors
- Small circular “stencils” (plastic and glass shown here)
- Medium to thick rubber band
- Hole punch if available
- Blank paper

INSTRUCTIONS

- Trace a circular shape onto corrugated cardboard, using a round shape as a “stencil.” Make sure your shape is only half the size of your tape roll or smaller. One is fine, or trace two different small sizes.
- Cut out your circle using scissors.
DIY SPIROGRAPH

- Carefully punch a hole in your cardboard using scissor points. The hole should not be right in the middle - try making it off to the side. Do not point the scissors toward yourself or your fingers at any time - set your cardboard on a work surface and firmly push and twist. Try using a hole punch if you have one.
- Make one or two more holes in different places on the cardboard. When your holes are finished, they should be big enough for the tip of a pen to go through.
- Wrap your rubber band around the outside of your cardboard disc. It doesn’t have to be pretty - the rubber band will create friction between the inside of the tape and the moving disc. The rubber band should cover the whole corrugated edge, and fit tightly without bending the cardboard.
- Set your disc on an inside edge of the tape roll, and choose a hole and position to start. Put your pen in and start rolling the disc carefully around the inside of the tape. Hold the tape roll completely still while you do this.
- Give yourself some practice time! Try out different colors, holes, and positions.

REFLECTION QUESTIONS:

- How does a spirograph work? Research it online.
- Are there other tools and materials you could use to make this project work?
- What happens if you punch a hole right in the middle of the cardboard disc?

ADDITIONAL RESOURCES

CONNECT Socially AND LEARN MORE

Facebook & Instagram: @MuseumofCraftandDesign
Twitter @SF_MCD

Websites
MCD museum store: Hypotrochoid art set
Cut out and Fold up: Ellipse with a Cake Pan “Spirograph”