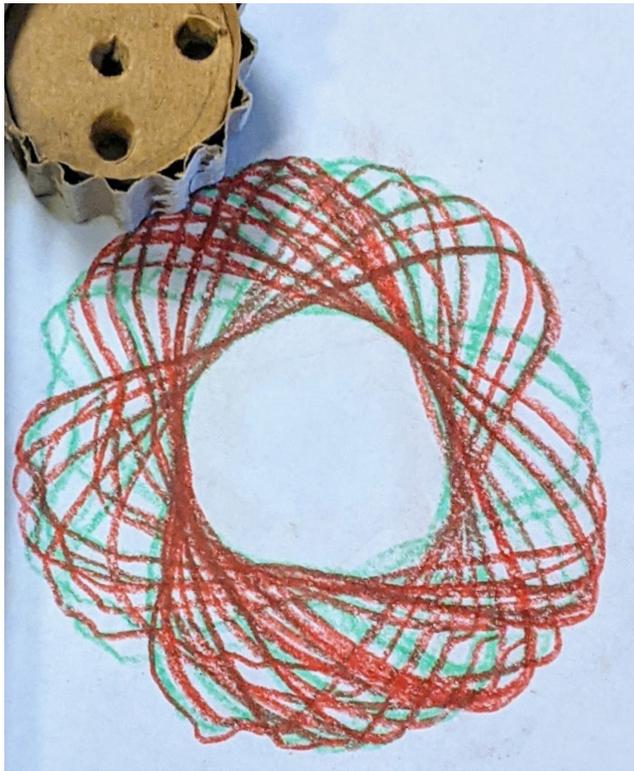


# MATHEMATICAL ROULETTE



British artist Zarah Hussain explores the power and necessity of breathing in her new exhibition, *Breath*, on view through June 2021. The artist uses mathematics and the traditional spiral form to translate our universal need for breath. Explore the creation of mathematical curves and different spirals by making and using a homemade mathematical roulette — a geometric drawing device that produces curve drawings in a variety of shapes and sizes.

To watch this process, visit [YouTube.com/PeabodyEssexMuseum](https://www.youtube.com/PeabodyEssexMuseum)

## SHOW US!

We want to see your mathematical roulette drawings. Share your photos using #PEMpod or #peabodyessex

## SUPPLIES

- 3 pieces of corrugated cardboard (2 large pieces around 6 to 8 inches, 1 small piece around 4 inches)
- Scissors or X-Acto knife (with assistance)
- Craft glue
- Pencil
- Colored markers or pencils
- Large cup (about 4 inches in diameter)
- Small cup (about 2 inches in diameter)
- Paper

## INSTRUCTIONS

**Step 1:** Gather your cardboard, pencil, scissors and the two cups to trace.

**Step 2:** Trace the large cup in the center of each of the two large pieces of cardboard. Then trace the small cup on the small piece of cardboard to create a cardboard circle. Cut out the circles you traced with either scissors or an X-Acto knife.

**Step 3:** Layer and glue together the two large cardboard pieces to create a layered square frame.

**Step 4:** Cut narrow strips of cardboard ( $\frac{1}{2}$  inch wide) and separate each strip to reveal the corrugation inside. With this side facing out, glue the separated strips around the inside of the large circle and the outside of the small circle.

**Step 5:** In the small circle with corrugated cardboard around the edge, poke holes big enough for your marker or colored pencils. **Tip:** Differently placed holes will create different patterns.

**Step 6:** Lay the cardboard frame over a blank piece of paper. Place the small cardboard circle inside the empty circle of the square frame. Put a pencil in one of the holes of the small cardboard circle. Start tracing in a circular pattern. **Tip:** Keep the small cardboard circle in contact with the edge of the square frame as you move your pencil in a circle. Experiment by using holes in different spots. What shapes do you see?