

Techbridge Girls is committed to supporting our community by providing access to high-quality at-home STEM activities for our girls and curating resources for families and educators. The below activity was designed to empower girls to lead fearlessly by learning and teaching others while sheltering in place.

You are an engineer who just designed a brand new amazing egg delivery system! But something went wrong and there's trash blocking the tube! You need to remove the blockage as soon as possible.

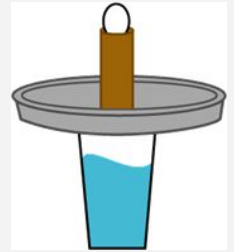
1 Get your materials.

You will need:

- Cardboard Tube (empty toilet paper roll, empty paper towel roll)
- A pie pan or a plastic plate
- Raw Egg or small Ball
- Water
- Cup (Large enough to fit an egg inside)

2 Setup

1. To set up the egg obstacle fill a cup $\frac{3}{4}$ full with water.
2. Next, balance a pan on top of the cup.
3. Place the cardboard tube in the center of the pan and set the egg on top of the tube.
4. The cardboard tube MUST be centered over the cup for this to work.

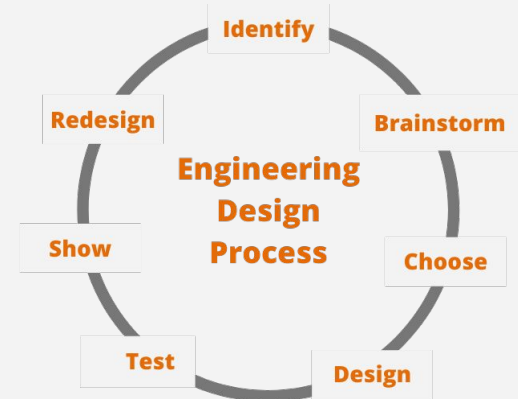


3 Criteria and Constraints.

Criteria: make the egg fall directly into the cup with only one swing of the hand.

Constraints:

- You cannot reposition the egg obstacle
- You can only touch the obstacle once with your hand



3 Reflection

Why did this happen? There are certain rules of movement that let **physicists** know how objects will move. The first rule of motions says that objects won't move unless they are given a push or pull. The egg is at rest atop the cardboard tube. When you hit the pie pan you are putting that in motion. The edge of the pie pan snagged the cardboard tube causing it to go into motion as well. The egg is not in motion, however, since you knocked the support out from underneath the egg it remains at rest for only a nanosecond before gravity pulls it straight down, causing it to drop into the water!

SHARE! With permission from your parents or guardians, please post a photo of your completed project on Facebook, Twitter, or Instagram, and tag @techbridgegirls so we can see your great work!

We are proud to support our girls' STEM journeys by providing resources to overcome barriers and to thrive and lead in STEM.