

## Bridge Building Challenge!

We almost never think about bridges. We roll over them every day and yet, their design and engineering are a mystery. In this challenge, you are asked to make a simple bridge using a cereal box and 1-meter of masking or cello tape. Here is how it works:

**Your Challenge:** Build a bridge using one cereal box and 1-meter of tape. Place the bridge between the backs of two chairs of the same size. Tie a string around your bridge and attach the other end to the bucket. The bucket should be only 10 cm off the ground. Add water to your bucket. 100ml of water = 100 grams, or 1 liter of water = 1 kg.

Slowly add water to your bucket and record how much water you added until the bridge fails. How much water will your bridge support? Make a video of your bridge and post it to Google classroom

### Supplies:

- 1 cereal box. Cut it open on a long crease. This is the ONLY cardboard you can use to create the bridge.
- 1-meter of masking or cellophane tape. No duct tape!
- 1 bucket, optional: an additional bucket as a reservoir of water to add to your bridge bucket.
- 1-meter of string.
- 2 chairs with high backs.
- 1 measuring cup
- cm ruler

### Process

**Step 1:** Think of what makes bridges strong. Design a structure that holds up the most water.

**Step 2:** Using scissors and tape, fold, cut and tape your bridge.

**Step 3:** Rest the bridge between the backs of two chairs that are exactly 30 cm apart.

- ▲ Do not tape the bridge to the chairs.
- ▲ We suggest that you do this outside.
- ▲ It's also helpful to have an extra bucket to dip your measuring cup in.
- ▲ Keep a good record of how much your bridge holds!
- ▲ Video your progress until it fails! Then post it Google classroom

Your setup should look like this:

