

Name:

Date:

Class:

# Unbeweavably Strong STEM Station

STEM Station: Stronger Strap Challenge

Grade Level: 2nd-3rd Grade | Time: ~30 minutes | Group Size: 3–4 students

## Your Challenge

*Your backpack strap broke! Instead of throwing it away, can you fix it using only paper? Your goal: Build a paper strap that is strong enough to hold a backpack and help the planet by reusing instead of tossing things in the trash.*

### Step 1: What is the Problem? (5 min)

Talk with your group: What happens if your backpack strap breaks? How could you use paper to make a stronger strap?

Challenge Question: How can we make paper strong enough to hold a backpack? Write or draw an idea on your group's whiteboard or chart.

### Step 2: Look and Imagine (5 min)

Look at your building supplies: 2–3 sheets of paper and scissors. Think: Can you fold, roll, braid, or layer the paper to make it stronger? Each person draws a quick idea of what the strap could look like.

### Step 3: Build Your Strap (10 min)

Now it is time to create. Work with your team to build a paper strap. Everyone helps. Use only the materials on your table. Try out your ideas from the sketch.

### Step 4: Test It! (5–7 min)

Let us see if it works. One team at a time: Hold each end of the strap, carefully lift the backpack, and see if it holds or breaks.

### Step 5: Share and Reflect (3–5 min)

Talk as a group: What worked well? What could be better? Write or draw your 2 Stars and 1 Wish on a slip or on your whiteboard.

Remember: Fixing and reusing helps keep things out of the landfill. You are solving problems like a real engineer and helping the planet.

**\*\*If you want to extend this activity, instead of using the backpack with a fixed weight, make it a challenge to see how much weight the strap will hold. Find something in the classroom that has a standard weight and multiple available (the same book, unopened bottles of glue, etc.). Add the items one at a time until the strap breaks. See who can create a strap to hold the most weight!**

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