

# Farmerettes - STEM Challenge

We intend this STEM challenge to complement Good in Every Grain's Farmerettes content. Students will work in groups of two to four students to solve the problems presented on the challenge cards using only the materials provided to create a prototype of a piece of equipment that will solve the problem. We have provided examples of materials, but use your imagination!

**Objective:** To solve open-ended challenges faced by farmers and/or the Farmerettes with time and material constraints.

**Materials:** Fill a paper bag for each team with everyday items. Do not provide glue, tape, or scissors to encourage greater creativity.

- Paper lunch bags, one for each team
- Challenge cards (print the following page and cut the cards out. Each card will have tips on the back about teamwork.)
- Items for creating a structure (popsicle sticks or tongue depressors, cardboard strips or toilet paper rolls, wood skewers, yogurt containers)
- Items for making a surface (cardboard or paper squares, coffee filters, aluminum foil, fabric scraps)
- Items for attaching (paper clips or brad clips, bulldog clamps, rubber bands, chenille stems [pipe cleaners], safety pins, twist ties, lengths of string)

**Preparation:** Fill a bag for each team. Be sure to include a challenge card! You could give each team the same challenge and materials or mix it up. Provide just enough material to meet the challenge but not enough to overwhelm students or leave them with material left over. Example: one bag could have a toilet paper roll, a coffee filter, two chenille stems, two bread clips.

**Go!** Ensure students understand what a prototype is and instruct them to create a prototype of something to solve a problem faced by a farmer or a Farmerette using only what is in the bag.

Allow time for students to read the teamwork tips on the back of the challenge card before beginning the activity. Give students a set amount of time (20 minutes) to come up with an idea and create a prototype. As time permits after the activity or on another day, have students explain their solutions to the class.

*This activity kit has been produced by the Grain Farmers of Ontario to provide a STEM activity to accompany Good in Every Grain's Farmerettes 2022.*





I need to move  
a large amount  
of produce from  
my field to a  
storage bin.

I need to store  
grain in a  
waterproof unit  
for the whole  
winter.

I need to bring  
water to my  
field in an  
efficient way.

I need to prepare  
the soil for  
spring planting.

I need to  
organize seeds  
for long-term  
storage.

I need to a  
container to hold  
my peaches  
without  
damaging them.

**Tip: Ask each team member to contribute one idea!**

**Tip: Brainstorm together! All ideas are welcome. Make sure everyone has a chance to share.**

**Tip: Decide together on what needs to be done and who will do each part.**

**Tip: Consider the pros and cons of each person's idea. Listen respectfully to them all.**

**Tip: Check in with each other every 5 minutes and share what you've done.**

**Tip: What is each person's favourite thing to do? Draw? Search for information? Find out what each student likes best. Can they start with that job?**