MISSION: LAUNCH!

Junior tech challenge

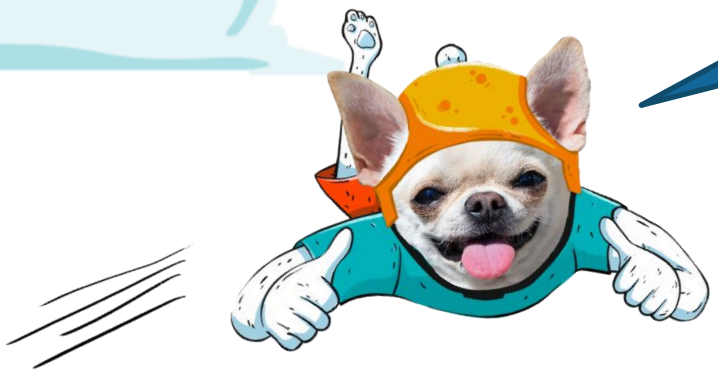
The practical side of science and tech

RÉSEAU TECHNOSCIENCE

Together for a new scientific generation

Setting the stage

The Challenge

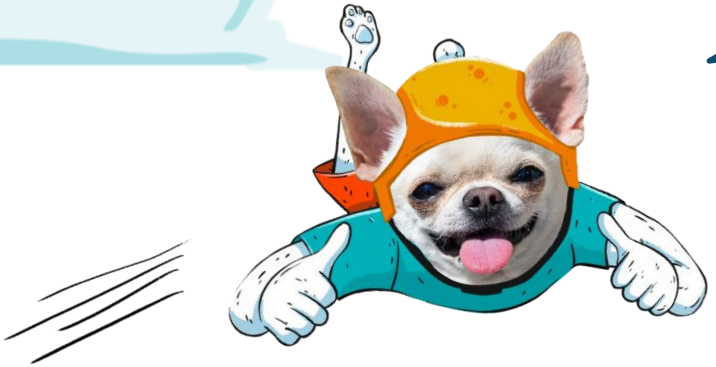


Hello Junior Tech Designers! Your expertise is needed!

Setting the stage

The Challenge

The water level near our homes is rising.



Setting the stage

The Challenge

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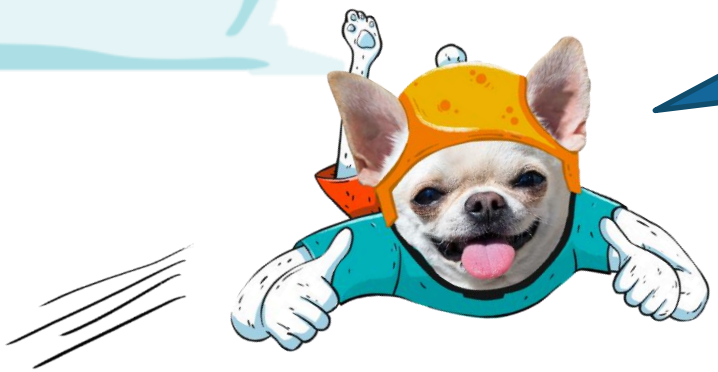

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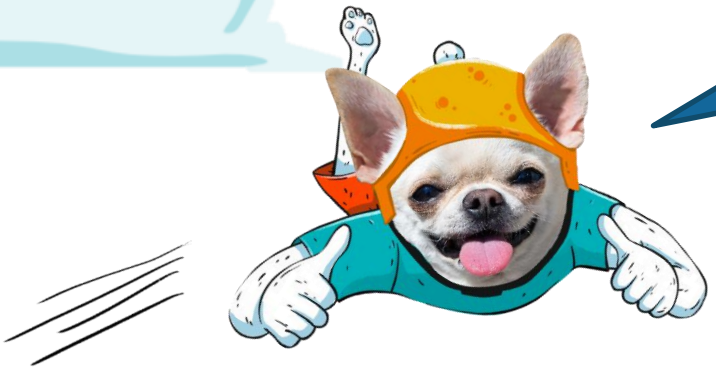
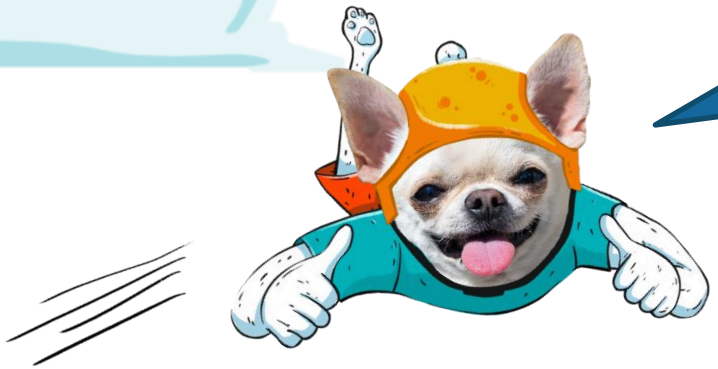
The Challenge



How can we help them keep their homes safe from the rising water?

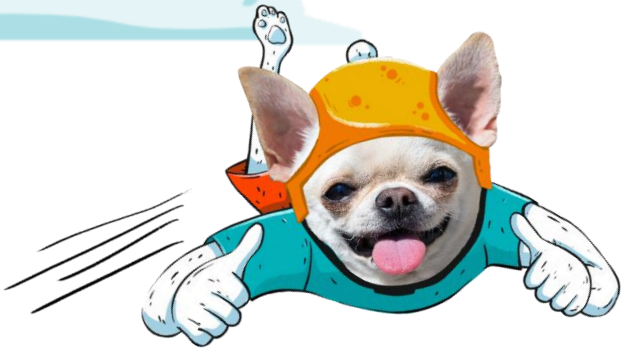
Setting the stage

The Challenge



Setting the stage

The Challenge



I would like to propose a solution!

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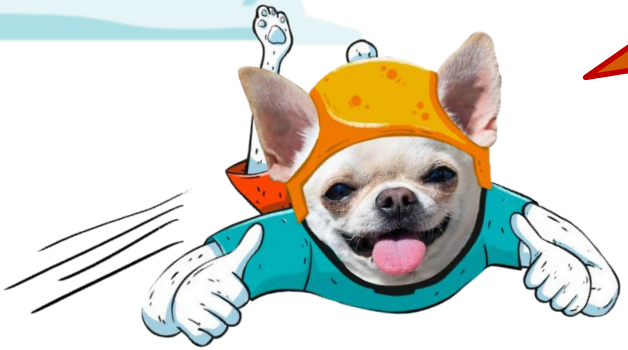
Setting the stage

The Challenge

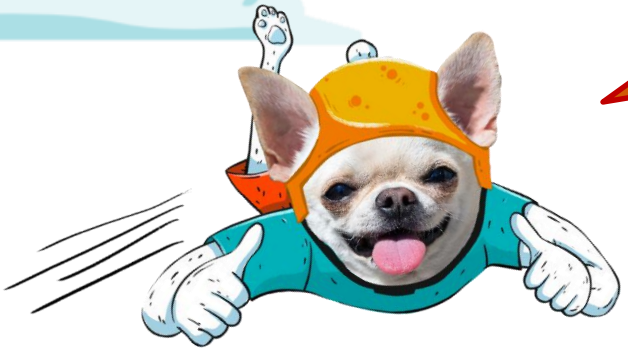


I was thinking that building a prototype that could launch sandbags onto the island might work!

Setting the stage

The Challenge

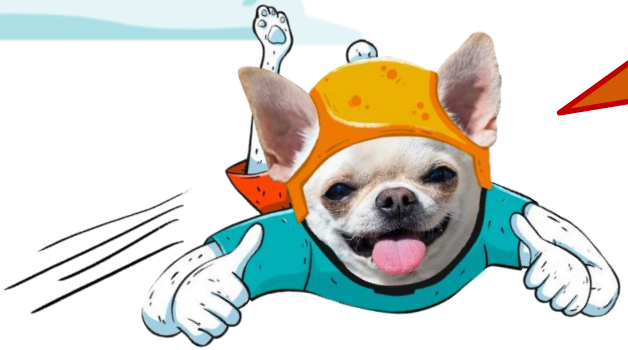
Your friends could use the sandbags to build a barrier against the rising water.



Setting the stage

The Challenge

You will need to collect the materials necessary to build your prototype.



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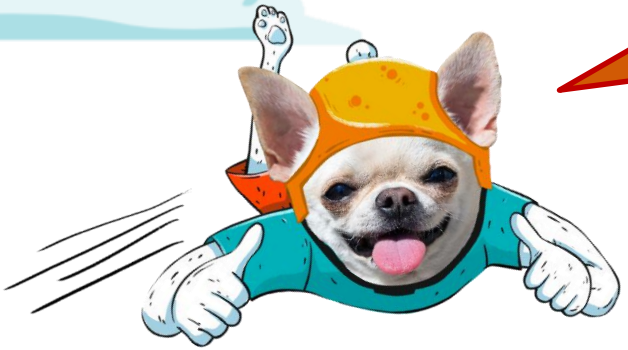
Setting the stage

The Challenge

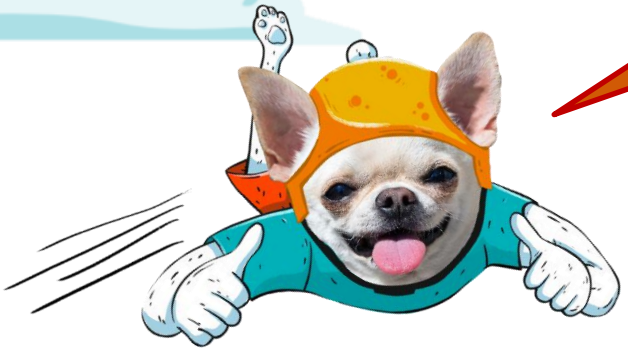


The sandbags must be able to reach the farthest island.

Setting the stage

The Challenge

Your friends are counting on you!



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Setting the stage

The Challenge

To build a prototype that is able to launch sugar packets at mutiple targets.

Setting the stage

The Challenge

An Additionnal Challenge for Cycle 3

For Cycle 3 students, the sugar packets must be launched by a **mechanical trigger**. This mechanical trigger must be something other than the participant's hand: a button, a pin, the cutting of a string, etc.

The prototype must be able to remain armed before being triggered.

Rules

Summary* of Rules - Design

2.1 Only the materials authorized on the list can be used when building the prototype.

- Paper fasteners
- Elastic bands
- Wooden skewers
- Wooden coffee stir sticks
- Cardboard boxes ♻
- Empty tin cans (*edges must not be sharp*) ♻
- Lids of any kind ♻
- Milk or juice cartons ♻
- Egg cartons ♻
- White liquid glue (*washable and non-toxic*)
- Hot glue (*in the Finals the use of a glue gun will not be permitted*)
- Pencils
- Plastic spoons ♻
- Pipe-cleaners
- Clothes pins
- String
- Bulldog clips
- Plastic containers ♻
- Tape of any kind
- Paper clips
- Used pen tubes ♻
- Cardboard cups ♻

♻ Ask students to bring in materials from their recycling bins at home!

NOTE : This presentation mentions only a few rules. Check the website for the complete list.

Rules

Summary* of Rules - Design

2.1. Only the materials authorized on the list can be used when building the prototype.

2.3. The prototype must be able to fit into a closed cardboard box designed to hold 5,000 letter-sized sheets.

2.4. The prototype must be able to stand on its own without anything securing it to the ground or to the inclined plane.

2.5. The projectile is a sugar packet of approximately 42 mm x 64 mm weighing between 3-4 g. The pack can be folded in half and taped together.
It cannot be attached to the prototype.

NOTE : This presentation mentions only a few rules. Check the website for the complete list.

Rules

Summary* of Rules - Design

2.1. Only the materials authorized on the list [illegible]ed when building the prototype.

2.3. The prototype must be able to fit into [illegible]dboc[illegible]old 5,000 letter-sized sheets.

2.4. The prototype must be able to stand [illegible]out [illegible]o the ground or to the inclined plane.

2.5. The projectile is a sugar packet of approximately 42 mm x 64 mm weighing between 3-4 g. The pack can be folded in half and taped together. It cannot be attached to the prototype.

NOTE : This presentation mentions only a few rules. Check the website for the complete list.

Rules

Summary* of Rules - Procedure

3.4. Each team receives 10 packets of sugar, and has a maximum of two minutes to accumulate the most points by hitting the targets.

3.5. The prototype must be installed on the ground or on the inclined plane at the starting line of the appropriate cycle.

3.7. The prototype and the inclined plane must remain behind the starting line.

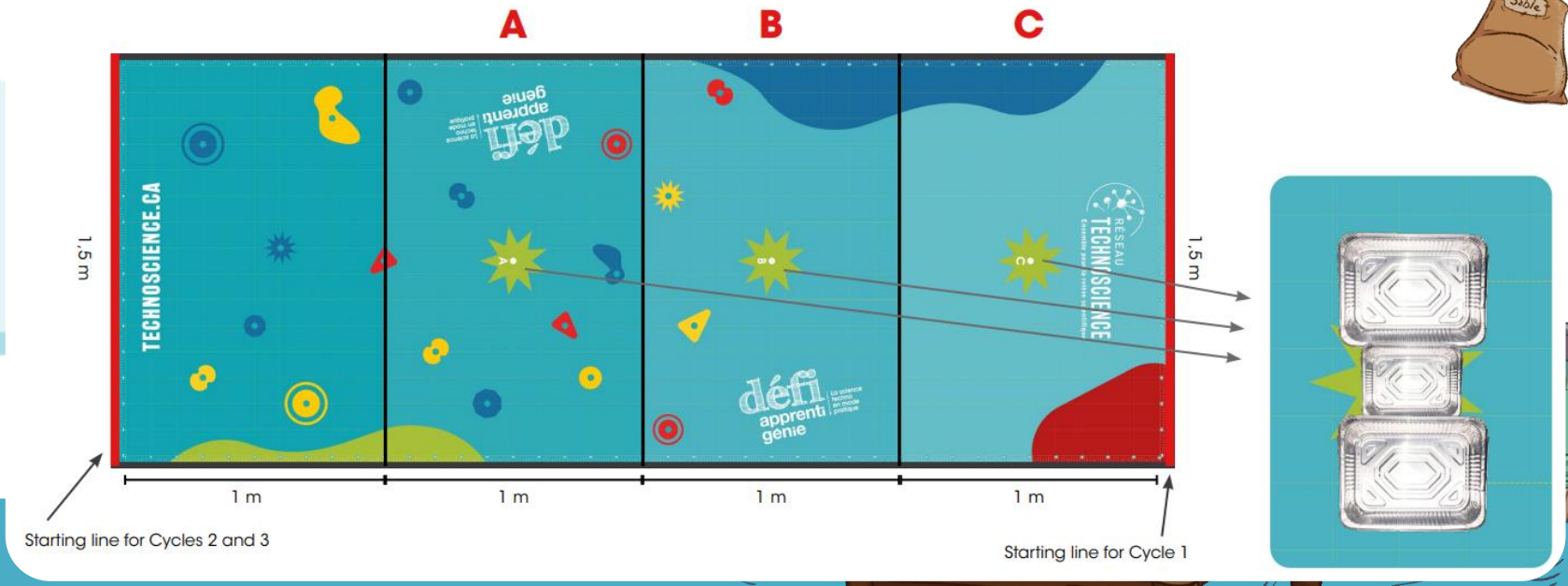
3.9. The team's turn ends if either of the following occurs:

- The two minutes are up;
- The 10 packets of sugar have been launched.

NOTE : This presentation mentions only a few rules. Check the website for the complete list.

Rules

The Competition Area



**NOTE : This presentation mentions only a few rules. Check the website for the complete list.*

Rules

The Competition Area

Zones

The competition area is divided into 3 scoring zones represented by the letters A, B and C. The score for each launch is based on the value of the zone where the sugar packet lands.

Targets

A small aluminum tray is attached in the center of Zones A, B and C. Two larger aluminum trays are attached to the right and to the left of each smaller tray. The sugar packet that lands in one of these target areas is awarded points according to the scoring grid.

POINTS PER SUGAR PACKET - CYCLE 1

Zones	Points per zone	Targets	Target points
A	30	Left/Right	240
		Center	350
B	20	Left/Right	140
		Center	250
C	10	Left/Right	40
		Center	150

POINTS PER SUGAR PACKET - CYCLES 2 AND 3

Zones	Points per zone	Targets	Target points
A	10	Left/Right	40
		Center	150
B	20	Left/Right	140
		Center	250
C	30	Left/Right	240
		Center	350

Rules

Scoring

The points awarded for each sugar packet launched will be added at the end of each round.

For every cycle, the winning team will be the one with the most points.

Final scores = Total points from Round 1 + Total points from Round 2
(Zone points and Target points) *(Zone points and Target points)*

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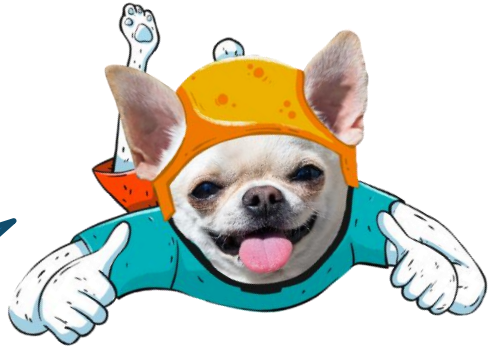

ENJOY THE CHALLENGE!