

# Junior tech challenge

The practical side of science and tech



PRESENTATION AND RULES

# READY, SET, ROLL!

2024-2025 EDITION

A challenge for all elementary students!

A program of



Premier partner

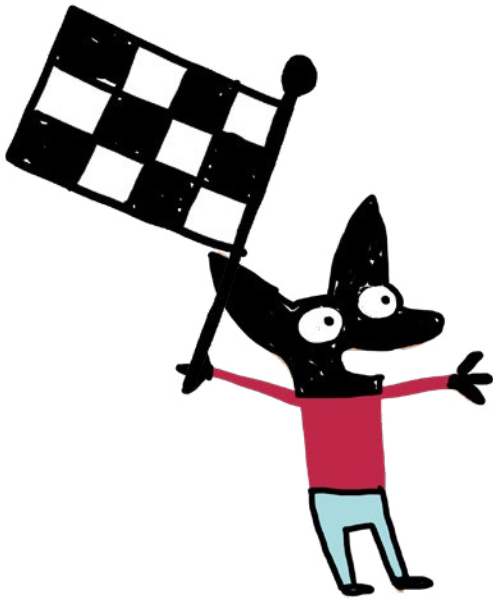


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## WHAT IS THE JUNIOR TECH CHALLENGE?

The Junior Tech Challenge is a LES in which students are asked to design and build a prototype that meets various criteria. The challenge has been crafted to provide students with a hands-on opportunity to apply the principles of Science and Technology. It aligns with the educational goals outlined in the Progression of Learning of the Québec Education Program, enabling students to engage with these concepts in a practical and meaningful way.

There are different ways students can participate in the challenge. Teachers could hold a **classroom competition**, where students compete with their classmates and the competition stays within the class. If teachers want to elevate the experience, they could stage a **school final** and compete against other classes, or even enter teams in the **regional final** where they will compete with students within their region!

In some regions, school service centers or school boards organize a final where teams must participate before registering to the regional final.

### ÉCOLE EN RÉSEAU

Would you like support in carrying out the Junior Tech Challenge in your classroom? You can have access to a series of activities, presented in collaboration with École en réseau, where you will benefit from practical guidance through the various preparatory activities presented. The registration link will be posted on our [Facebook page](#) as soon as it becomes available. Stay tuned!

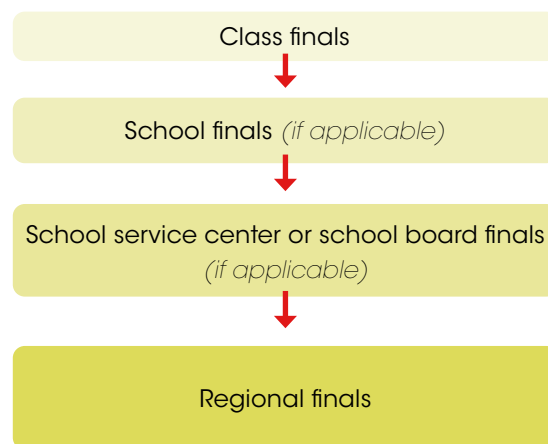
## REGIONAL FINALS

The Réseau Technoscience, through its regional organizations, arranges regional finals throughout Quebec. These finals, held in May, represent the ultimate challenge of the Junior Tech Challenge and offer a memorable experience for all participants!

## NEW CHALLENGES AT EVERY LEVEL OF COMPETITION

The format of the events may vary between the regional finals and the school service center or school board finals, aiming to deliver a unique experience for students across the various competition levels. The objective is to create an environment where students can apply concepts learned in class in an engaging way. These details will be provided at the finals.

For example, there could be a speed bump on the road the prototype has to travel on, or orange cones in its path.



## RULES

This document contains guidelines and information to complete the 2024-2025 Junior Tech Challenge, *Ready, Set, Roll!*, within your class.

You are free to adapt the content to align with your specific learning objectives. However, it should be noted that those taking part in the finals, must adhere to the rules outlined in this document.

## PEDAGOGICAL TOOLS

The following pedagogical tools are free and designed to provide teachers with a step-by-step guide to implementing the **Ready, Set, Roll!** challenge in class.

- Teacher's Guide
- Student Handbook
- Capsules d'accompagnement (*French Only*)
- Slideshow
- Certificate of Participation
- Frequently Asked Questions (FAQ)
- Carton de notation (*French only*)
- Fiche de vérification des prototypes (*French only*)
- Tableau de pointage (*French only*)

If you are an educational consultant and would like to organize a school service centre or a school board final, contact a member of the Réseau Technoscience in your area. The list can be found on [technoscience.ca/contact](https://technoscience.ca/contact).



## TERMS AND CONDITIONS

- 1.1.** The Junior Tech Challenge is a program of Réseau Technoscience. Réseau Technoscience and its regional organizations are responsible for publishing the rules, enforcing them during the regional finals, and organizing these regional finals throughout Quebec.
- 1.2.** The Junior Tech Challenge is open to all elementary students.  
*Note: Kindergarten students can participate in the challenge by using the rules that apply to Cycle 1.*
- 1.3.** Each team is comprised of one to three participants. Any team with students from two different cycles must complete the challenge at the higher cycle.
- 1.4.** The prototype must be designed and built by students.
- 1.5.** Failure to follow the rules, or any other breach from the organizing committee's directives, may result in the disqualification of the students.
- 1.6.** The answers published in the Frequently Asked Questions serve as a reference for the interpretation of the rules.

### FREQUENTLY ASKED QUESTIONS (FAQ)

The Frequently Asked Questions section is where you and your students can find more details about the rules of the challenge.

We encourage you to refer this section regularly throughout the challenge.

<https://technoscience.ca/programmes/defi-apprenti-genie/foire-aux-questions/consulter-la-faq/> 



## SETTING THE SCENE

You and your friend just baked a batch of delicious cookies for your class and your teacher. But alas! you've missed the bus! How will you get these delicious creations to school? Let's see...you'll need a vehicle to transport the cookies from your home, which is located at the top of a hill, to school. Here's an idea! Build **a vehicle that will go down the hill and stop right in front of one of the school's three** main entrances. If you do this quickly enough, you might even arrive at school before the bus. One thing's for sure, whether you get there on time or not, everyone will enjoy the cookies!

## THE MISSION

To design the prototype of a vehicle that will go down an inclined plane and stop as close to a target as possible.

## A CHALLENGE FOR EVERY LEVEL

	<i>Required Equipment</i>	<i>Targets*</i>	<i>Starting Zone*</i>
<i>Cycle 1</i>	Cardboard container	Same target for both rounds <i>(team choice)</i>	Team choice
<i>Cycle 2</i>	Cardboard container or plastic bottle	A different target for each of the two rounds <i>(team choice)</i>	Team choice
<i>Cycle 3</i>	Plastic bottle	1 <sup>st</sup> round: Target A 2 <sup>nd</sup> round: Target C	Required Starting Zone <i>(50 cm x 50 cm)</i>

\* See Competition Area on page 8.



# CONSTRUCTION

- 2.1. The maximum dimensions of the prototype are 50 cm x 50 cm at the starting position and must always remain the same.
- 2.2. The chassis\* of the prototype must be designed using the materials required by the cycle (see table, *A Challenge for Every Level*, on page 5).  
*Note : For safety reasons, plastic bottles must not be perforated or cut.*
- 2.3. For Cycles 2 and 3, the wheels and axles\* must be made only of everyday circular objects (e.g. disks, spools of thread, lids, straws, wooden skewers or dowels).
- 2.4. No accessories outside the vehicle will be permitted (e.g. launching ramp, stop blocks, rope, etc.).
- 2.5. Only the wheels may touch the ground or inclined plane.
- 2.6. Teams can make changes to their vehicle between rounds. A minimum of 5 minutes is granted.
- 2.7. Materials not permitted :
  - Components that could cause injury or alter the competition area
  - Liquids
  - Electricity
  - Any chassis from a commercial toy
  - Wheels and axles coming from toys (for Cycles 2 and 3)

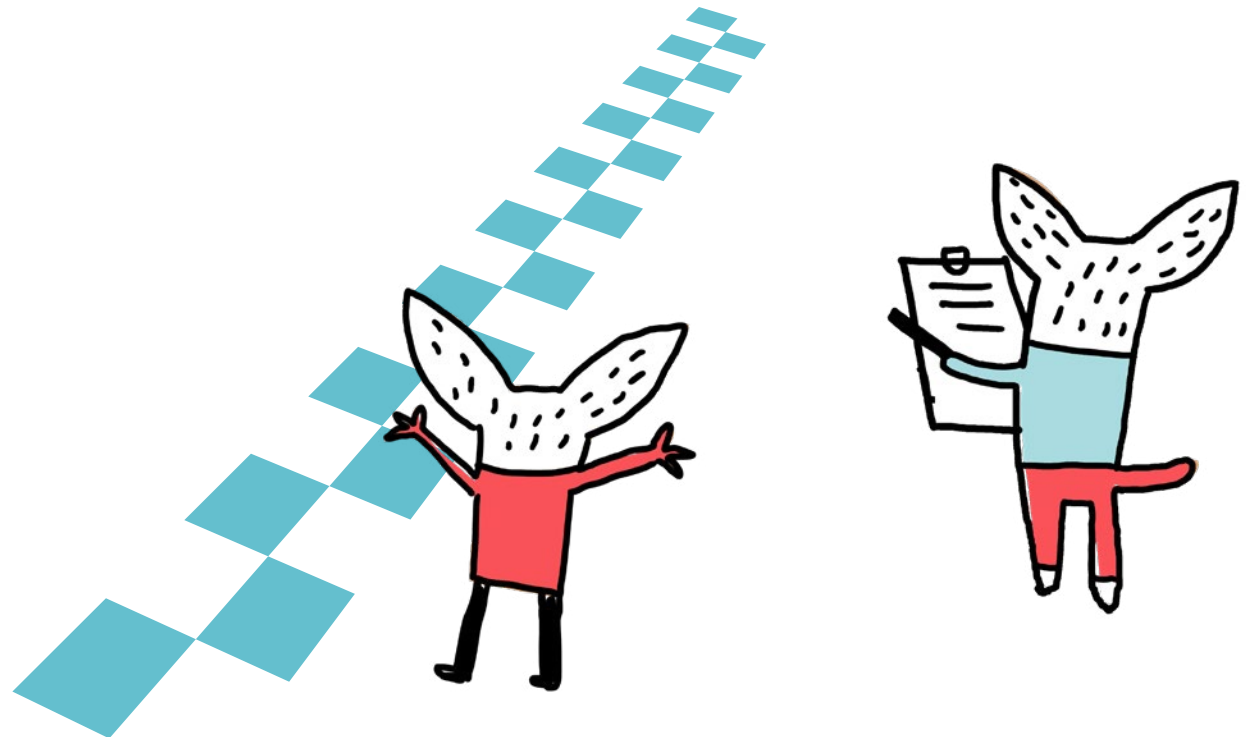
\*Chassis: The supporting frame of a vehicle. Students will learn this definition in Preparatory Activity 1 (Wheel Hunt).

\*Axles: Rods to which the wheels are attached. Students will learn this definition in Preparatory Activity 1 (Wheel Hunt).



# COMPETITION

- 3.1. Each team must submit their prototype for inspection to ensure that the rules have been followed.
- 3.2. Each team can test their vehicle before the competition begins.
- 3.3. The competition consists of two rounds. Teams must reach one target per round (see table, *A Challenge for Every Level*, on page 5).
- 3.4. Cycle 1 et 2 competitors must state the intended target before releasing their prototype.
- 3.5. In each round, teams have 30 seconds to set up their prototype at the assigned start area (see table, *A Challenge for Every Level*, on page 5).
- 3.6. The use of a prop to position the vehicle in the starting area is permitted, but it must be removed before the departure of the vehicle.
- 3.7. At the starting signal, the team must **release** the vehicle. Pushing is prohibited.



# COMPETITION AREA

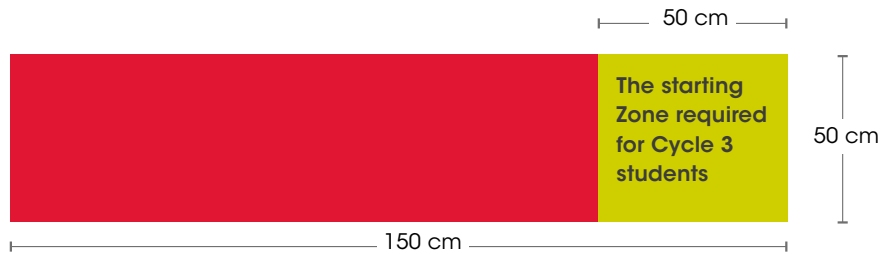
## INCLINED PLANE

The inclined plane consists of a sheet of coroplast, foam board, or plywood (150 cm long by 50 cm wide), resting on two cardboard boxes designed to hold 5000 letter-size sheets. The vertical drop must be approximately 50 cm.

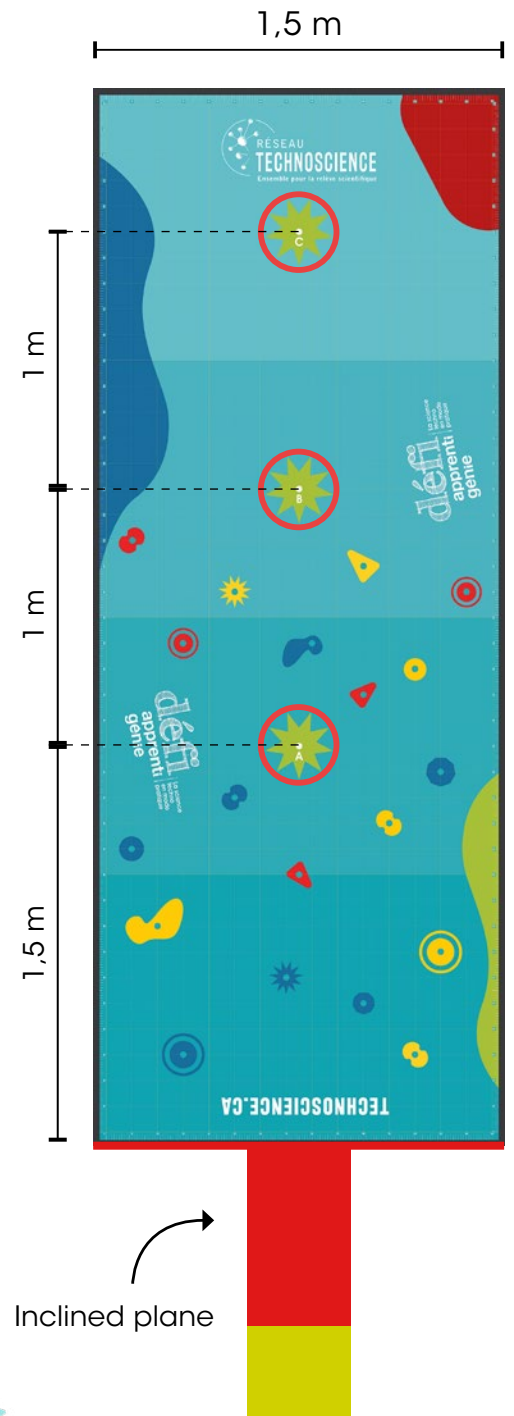
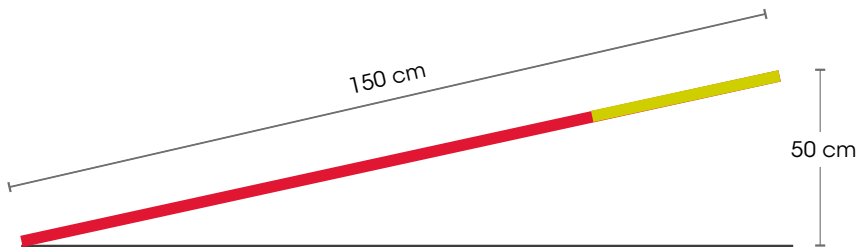
*Note : Teachers can choose to reinforce the inclined plane if they wish.*

Students from Cycles 1 and 2 can position their vehicles anywhere they choose on the inclined plane.

### View from above



### View from the side





## SCORING

Scoring for each round is calculated as follows:

$$100 - d$$

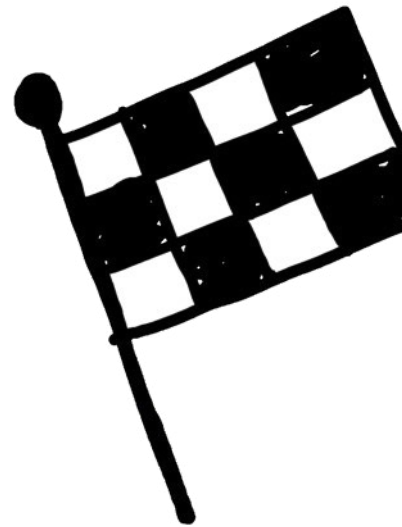
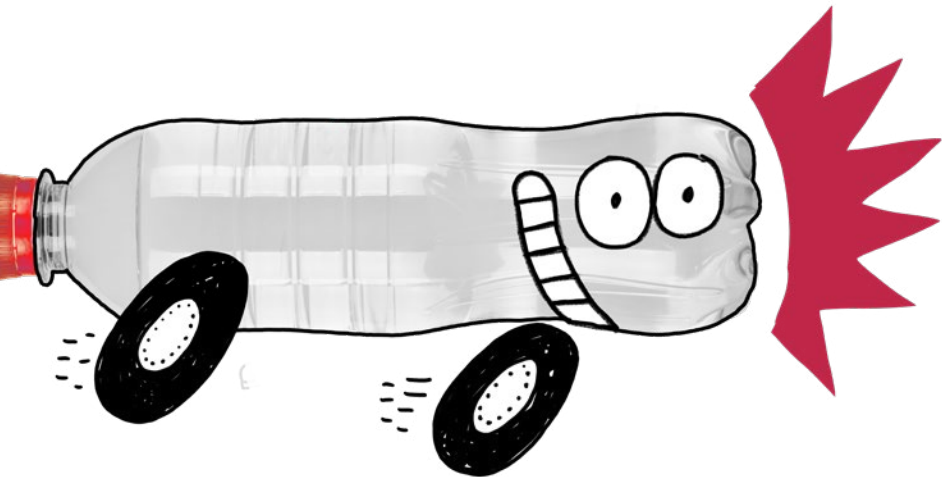
**d** : distance measured in centimeters between the center of the target and the ground contact point of the wheel closest to the target. If the prototype is more than 100 cm from the target, the score for that round will automatically be 0.

### WINNERS

The winning team for each cycle is the one with the most points after both rounds.

### IN CASE OF A TIE

Tied teams will compete in an additional round. For this round, the distance (d) will be measured in millimeters (1000 - d).



## HOW TO REGISTER

To register your teams for the regional final, you can [register online](#), or you can contact the regional coordinator of the Junior Tech Challenge.

Note: If your school board or school service center is holding a final, you must register your team with the individual responsible for organizing the event.

## CONTACT US!

For details about costs, registration, scheduling, etc. contact a member of the Réseau Technoscience team of your region.

<https://technoscience.ca/contact/>



SCAN HERE FOR MORE  
INFORMATION ABOUT THE  
JUNIOR TECH CHALLENGE!

## TEACHER PARTICIPATION PRIZE

Are you planning on taking part in the **Ready, Set, Go!** challenge with your students this year?

We want to recognize you by offering you the chance to win one of five \$200 prizes offered by the Université de Sherbrooke, a major partner of the Junior Tech Challenge! These prizes are destined to recognize Quebec teachers whose students have successfully completed the challenge.

After completing the challenge, fill out this short survey to register for a chance to win: <https://forms.gle/6sFDGtwhyGD1uv3RA>

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