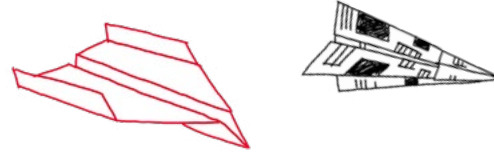


Junior  
tech

challenge

The practical  
side of  
science and  
tech

PRESENTATION AND RULES



TAKE  
OFF!

2023-2024 EDITION



A **challenge** for all elementary students!

TECHNOSCIENCE.CA

A program of

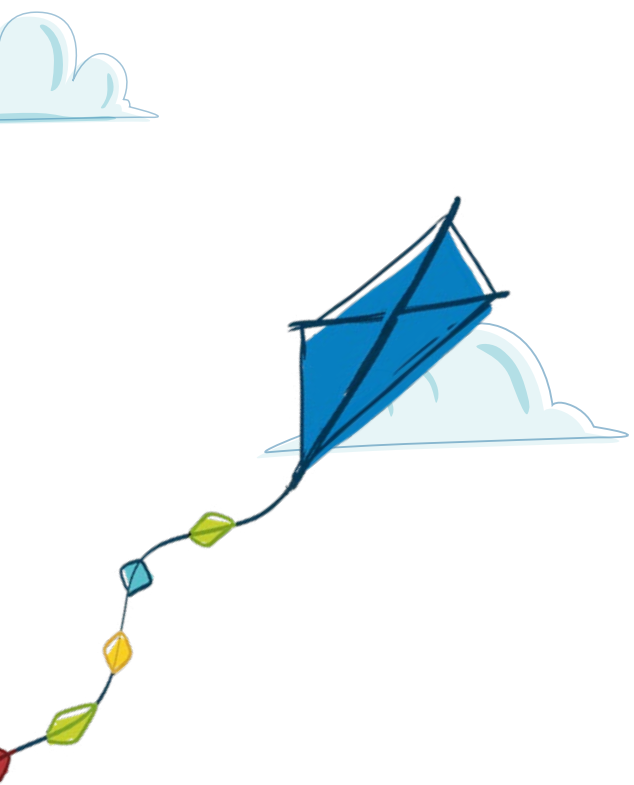


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Support





# TABLE OF CONTENTS

What is the Junior Tech Challenge? . . . . .	3
Regional Finals . . . . .	3
New Challenges at Every Level of Competition . . . . .	3
Rules . . . . .	3
Pedagogical Tools . . . . .	3
Terms and Conditions . . . . .	4
Frequently Asked Questions (FAQ) . . . . .	4
Setting the Scene: The Carrier Pigeons Are Sick! . . . . .	5
A Challenge for Every Level . . . . .	5
The Mission . . . . .	5
Construction . . . . .	6
At the Competition . . . . .	6
The Challenges . . . . .	7
Competition Area . . . . .	8
Scoring . . . . .	8
How to Register . . . . .	9
Contact us . . . . .	9
Acknowledgements . . . . .	9

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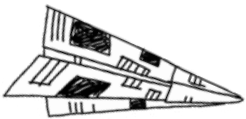
## WHAT IS THE JUNIOR TECH CHALLENGE?

The Junior Tech Challenge is an in-class 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. Teams can be registered directly to the regional finals, or students and staff can collaborate by organizing a school final. In some regions, school service centers or school boards organize a final where teams must participate before registering to the regional final.

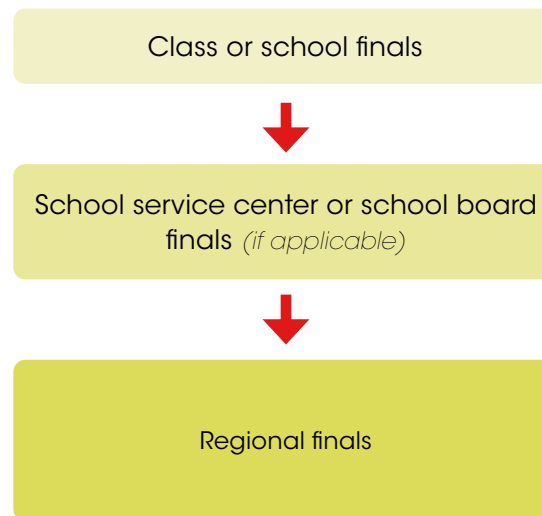
## REGIONAL FINALS

Réseau Technoscience, through its regional organizations, arranges regional finals throughout Quebec. These finals are held in May.



## 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. For example, at the higher levels, students might be asked to design and construct a paper airplane capable of flying at a designated height, navigating through hoops, or executing a maneuver in a particular way. Detailed instructions for these tasks will be provided during the finals.



## RULES

This document contains guidelines and information to complete the 2023-2024 Junior Tech Challenge within your class or your school.

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 school service center finals or regional 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 "Take Off!" challenge in class.

- Teacher's Guide
- Student Handbook
- 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 you 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 at [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.

[technoscience.ca/programmes/defi-apprenti-genie/foire-aux-questions](https://technoscience.ca/programmes/defi-apprenti-genie/foire-aux-questions).



## SETTING THE SCENE: THE CARRIER PIGEONS ARE SICK!

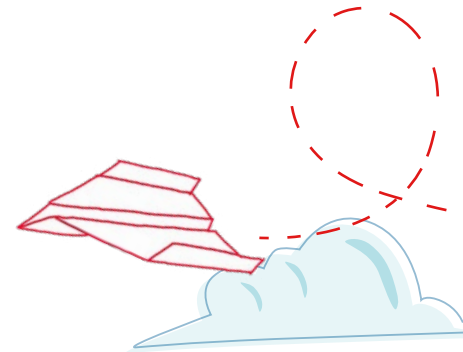
We've just received some troubling news! The city's carrier pigeons have fallen ill with a rare disease! But don't you worry, with a bit of rest, they will all make a full recovery. The real concern now is who will step in during their absence? There are hundreds of people eagerly awaiting messages transported by these pigeons, so we must find a solution soon! Do you have any ideas on how to help them? There must be a way! What if you were to construct paper airplanes that will carry these messages to their intended recipients? But be warned, to effectively replace the pigeons, your airplanes must be capable of flying long distances, be precise, and, some of them may even need to execute turns. Do you have any ideas on how to build a paper airplane that will carry out this mission? One thing is for sure: the carrier pigeons are counting on your help!

### THE MISSION

*To design paper airplanes that complete different tasks.*

## A CHALLENGE FOR EVERY LEVEL

- **Cycle 1**  
Design two paper airplanes that will complete two challenges (*1 challenge per airplane*).
- **Cycle 2**  
Design at least two paper airplanes that will complete three challenges (*1 or 2 challenges per airplane*).
- **Cycle 3**  
Design three paper airplanes that must will complete three challenges (*1 challenge per airplane*).



# CONSTRUCTION

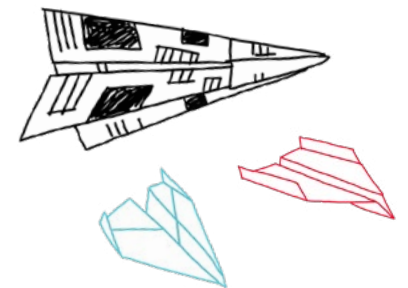
- 2.1. The airplanes must resemble a paper airplanes (*ex.: a ball of paper cannot be considered an airplane*).
- 2.2. Each airplane model must be significantly different.
  - Cycle 1: 2 different models
  - Cycle 2: at least 2 different models
  - Cycle 3: 3 different models
- 2.3. Each airplane must be dedicated to one challenge (*two in Cycle 2*).
- 2.4. **Authorized materials**
  - Standard letter-sized printing paper, with a maximum size of 8 ½" x 11" inches. The airplanes can be made up of more than one sheet of paper.
  - Tape
  - Stickers**Forbidden materials**
  - Any type of cardboard (*ex.: construction paper, cardboard, sandpaper*).

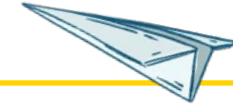


It is possible and encouraged to use recycled paper to practice making your airplanes!

# AT THE COMPETITION

- 3.1. The airplanes must be made on site the day of the competition using paper provided by the organizing committee.
- 3.2. Each airplane must be submitted for inspection to verify compliance with the rules.
- 3.3. Thirty minutes is allotted for both the assembly and testing of the paper airplanes.
- 3.4. The numbers assigned to the challenges to be completed with the airplane must be written on its wing.
- 3.5. Each team will be allowed two consecutive launches per challenge.
- 3.6. Team members can each take a turn, or decide that only one member will launch the airplane.
- 3.7. The airplanes must be launched by hand.
- 3.8. The thrower must ensure that their feet do not cross the starting line.
- 3.9. Once launched, the airplane cannot be touched.
- 3.10. Team members can make adjustments to their airplane between launches.
- 3.11. For the turning challenge, airplanes must be launched perpendicular to the starting line.





## ■ CHALLENGE 1

### DISTANCE

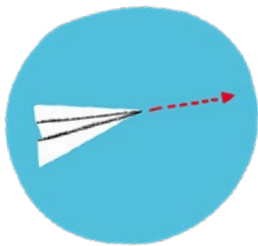
The airplane must travel the greatest possible distance within the flight corridor (1.5 m wide).

The point at which the airplane **stops** will determine the distance travelled. That distance is measured in a straight line from the center of the start line to the nose of the airplane. If the airplane lands outside the flight corridor, only half the points are counted.

The better of the two throws is counted.

1 cm = 1 point

Maximum of 1000 points.



## ■ CHALLENGE 2

### PRECISION

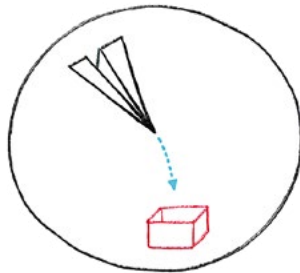
The airplane must land in a cardboard box normally used to hold 5,000 sheets of letter-size paper.

- 800 points | The airplane **lands** in the box.
- 500 points | The airplane **stops** in the red zone.
- 300 points | The airplane **stops** in the dark green zone.
- 200 points | The airplane **stops** in the light green zone.

Refer to the image of the Competition Area on page 8.

Both throws are counted.

Maximum of 1 600 points.



## ■ CHALLENGE 3

### TURNING (Cycles 2-3)

The airplane must execute a turn to avoid an obstacle (*the wall*) and finish its trip outside the flight corridor (1.5 m wide).

#### Cycle 2

The airplane must turn either right or left (*team members' choice*).

#### Cycle 3

The airplane must execute two turns: one to the left and one to the right. Two throws are permitted per side.

- 800 points | The airplane turns **less than 3 meters in front of** the obstacle.
- 500 points | The airplane turns and **touches** the obstacle.
- 300 points | The airplane turns **more than 3 meters in front of** the obstacle.

Refer to the image of the Competition Area on page 8.

**Cycle 2** : Both throws are counted.

**Cycle 3** : Only the best throw of each turn is counted.

*Note: No points are awarded for an airplane that does not complete its trajectory outside the flight corridor.*

Maximum of 1 600 points.

# COMPETITION AREA

For Challenge 1, if there is not enough space to install a 10 m long corridor, make it as long as possible until you reach a wall on which you can draw horizontal lines at a distance of one meter apart. Award 100 points for every meter of height attained.

*Example:*

A corridor of 8 m: 800 points.

The airplane strikes the 2nd zone of the wall from the ground: 200 points.

Total: 1 000 points.

# SCORING

After completing all the events, the winning team for each cycle is determined by the team that has accumulated the most points.

## ■ CYCLE 1

Best throw in Challenge 1 + Two throws in Challenge 2.

## ■ CYCLE 2

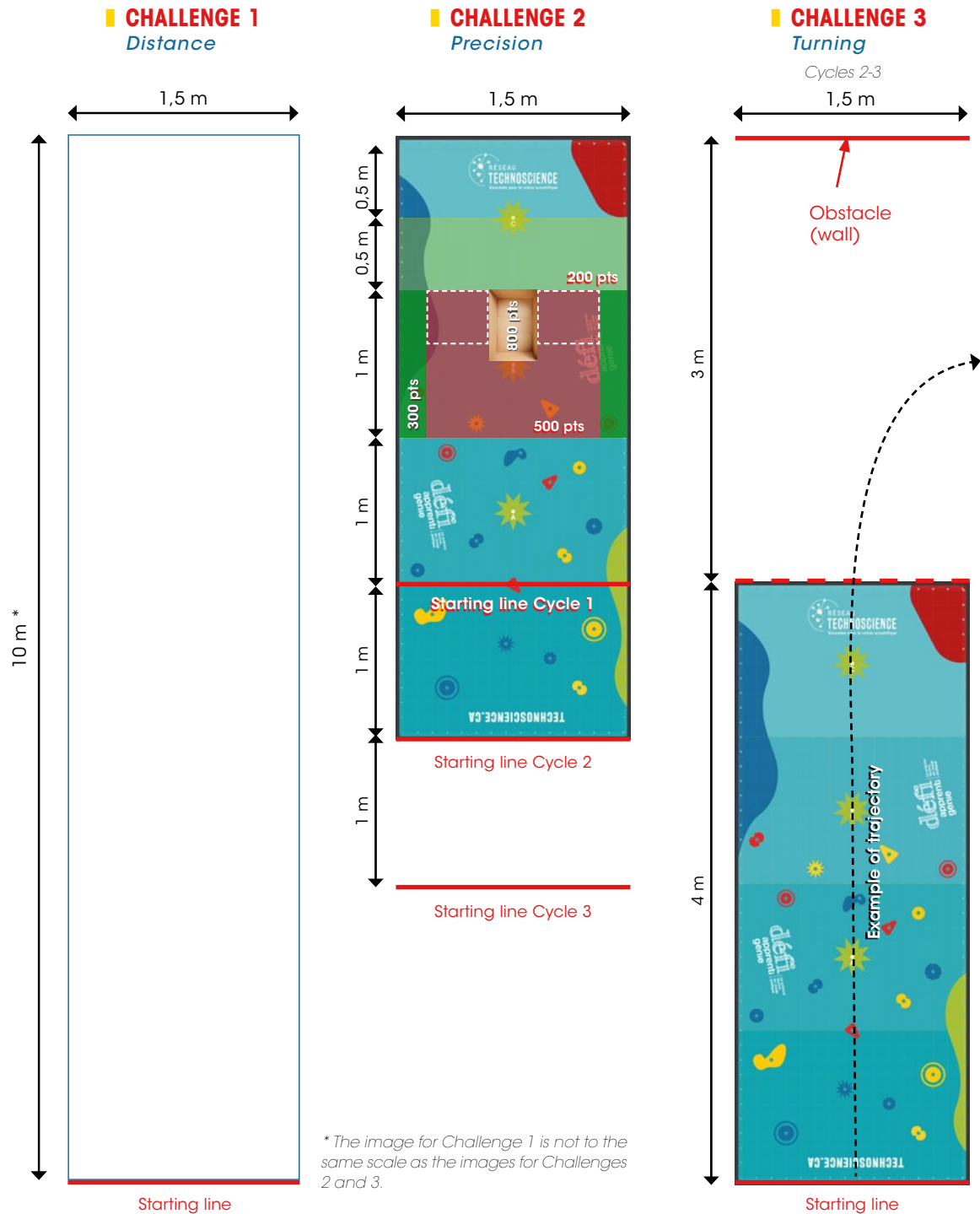
Best throw in Challenge 1 + Two throws in Challenge 2 + Two throws in Challenge 3.

## ■ CYCLE 3

Best throw in Challenge 1 + Two throws in Challenge 2 + Best turn in Challenge 3.

## ■ IN CASE OF A TIE

A challenge will be selected at random and each team involved in the tie will be allowed one more throw. Only that throw will count for the purpose of determining the winners.





## HOW TO REGISTER

To register your teams to the regional final, you can either contact the regional coordinator of the Junior Tech Challenge, whose contact information can be found on the website, or register directly online.

*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!*

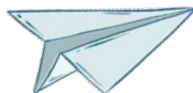
## CONTACT US

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 ON THE  
JUNIOR TECH CHALLENGE!



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