

JUNK DRAWER RACES INFO SESSION 2023-2024



Grades 2-3

**Robot Walker
Race**



Grades 4-5

**Cardboard
Car Race**



Grades 6-7

**Paper Glider
Competition**



Grade 8

**Hydraulic Crane
Challenge**



Grades 9-12

**Air Pressure Rocket
Challenge**

<https://www.skillsontario.com/junk-drawer-races>

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JUNK DRAWER RACES

Participate in this fun and engaging virtual contest series to develop new skills and learn about opportunities in the skilled trades and technologies



Grades 2-3

Robot Walker Race



Grades 4-5

Cardboard Car Race



Grades 6-7

Paper Glider Competition



Grade 8

Hydraulic Crane Challenge



Grades 9-12

Air Pressure Rocket Challenge

#JunkDrawerRaces



Visit our website for more information at [skillsontario.com/junk-drawer-races](https://www.skillsontario.com/junk-drawer-races)



Junk Drawer Races

Participate in this fun and engaging contest series to learn about opportunities in skilled trades and technologies and develop new skills!

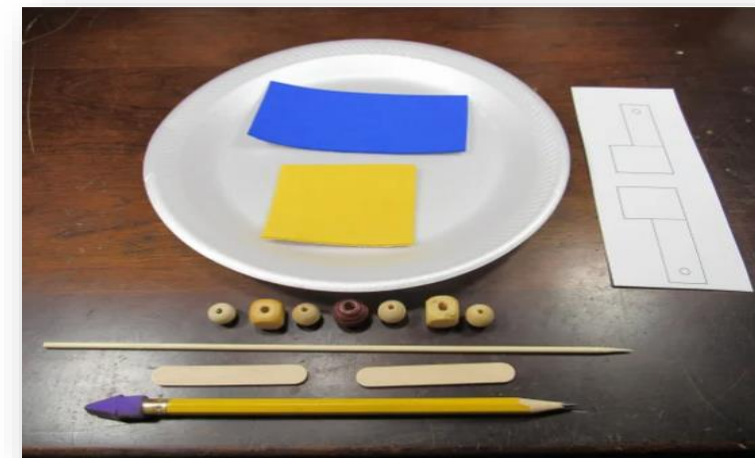
- Series of 5 Contests that can be completed in teams of 4 and integrated into the classroom and submitted virtually
- Each contest is tied to the Ontario education curriculum, including the new curriculum
- Different contest for different sets of grades
- Opportunity for teamwork, showing pride in your school, and competing for medals!

Robot Walker Race

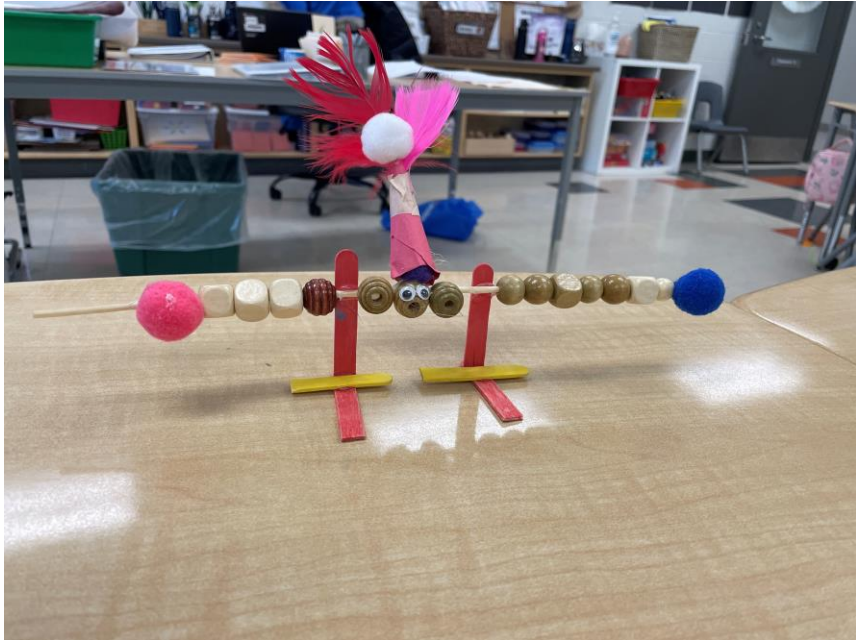
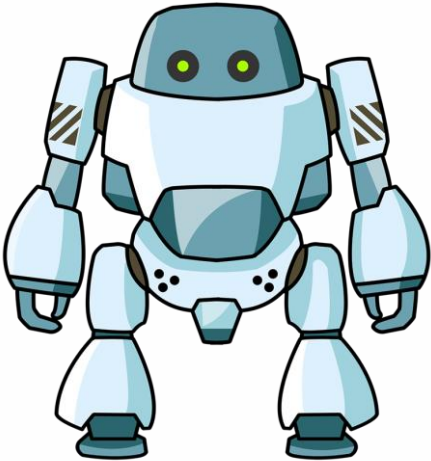
Teams will construct a "robot", that when placed on a specified incline, gravity will take over and it will "walk" down the inclined surface!

This contest consists of:

- 1) Design Document
- 2) Photo
- 3) Video



Grade 2-3



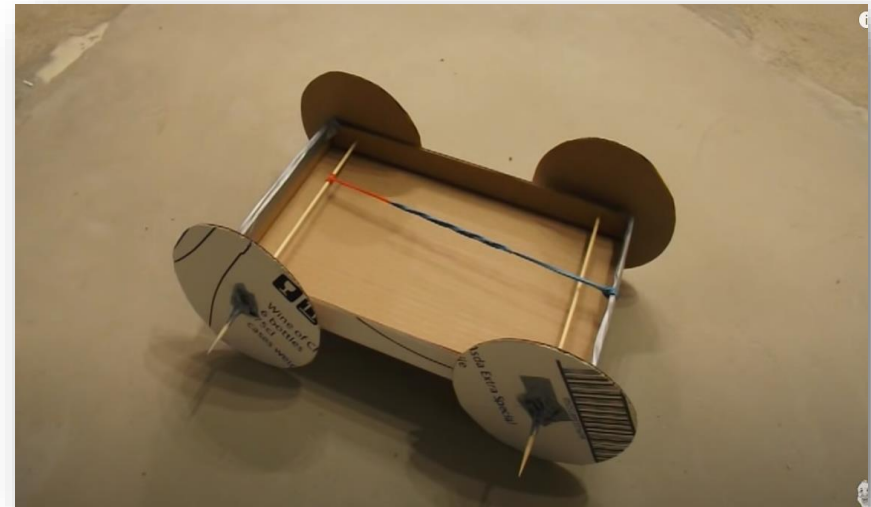
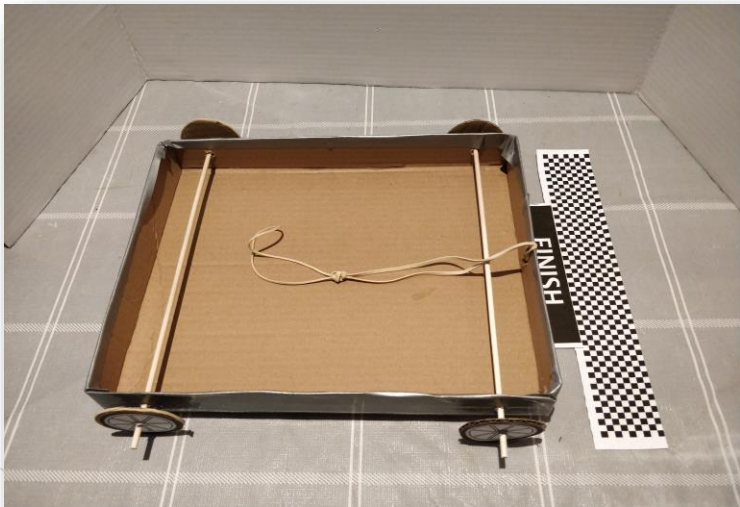
Cardboard Car Race

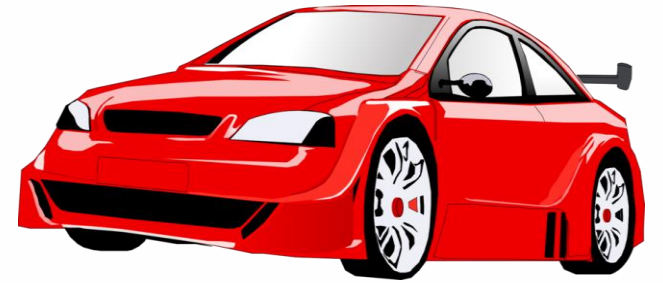
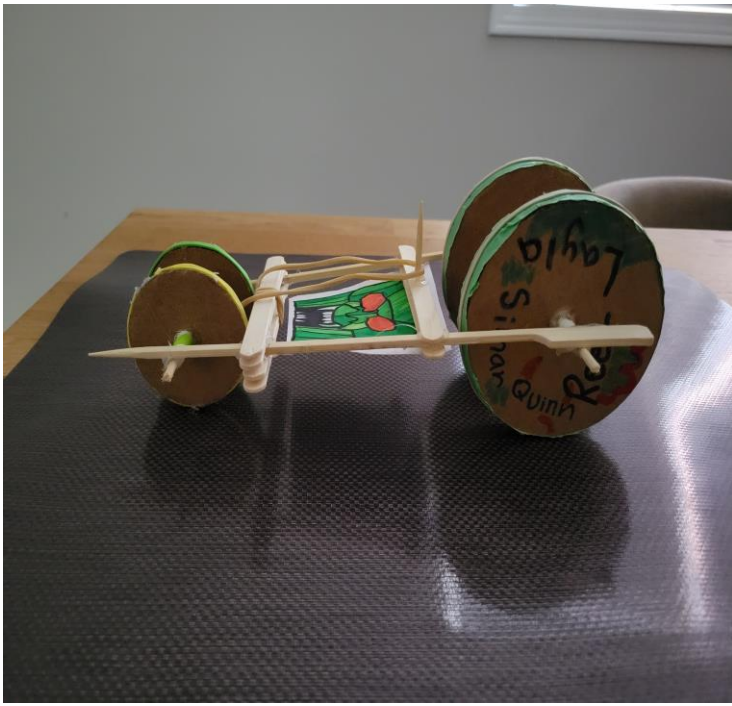
Teams will construct a race car that will move with the use of a rubber band.

This contest consists of:

- 1) Design Document
- 2) Photo
- 3) Video

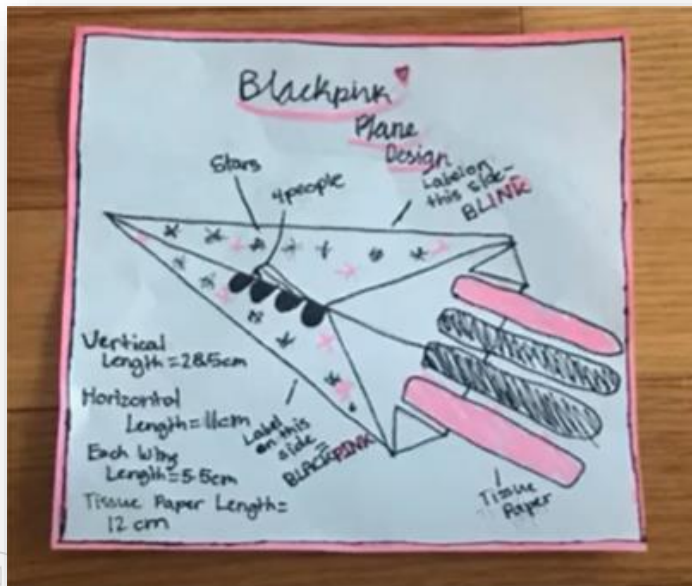
Grade 4-5





Paper Glider Competition

Teams will design and build a plane (or glider) that they will launch to see how long it can stay in the air.

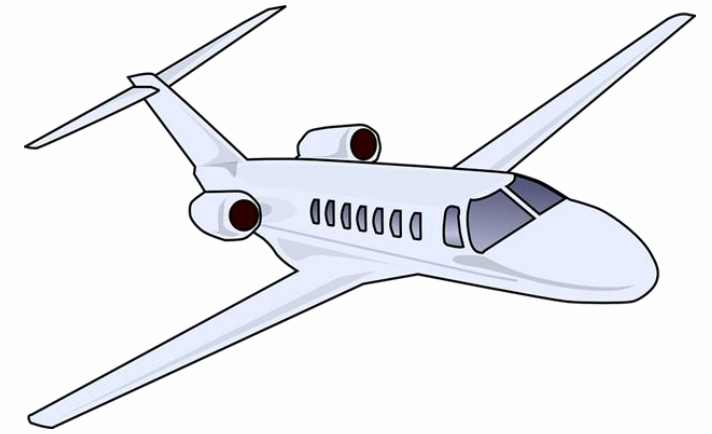


This contest consists of:

- 1) Design Document
- 2) Photo
- 3) Video

Grade 6-7





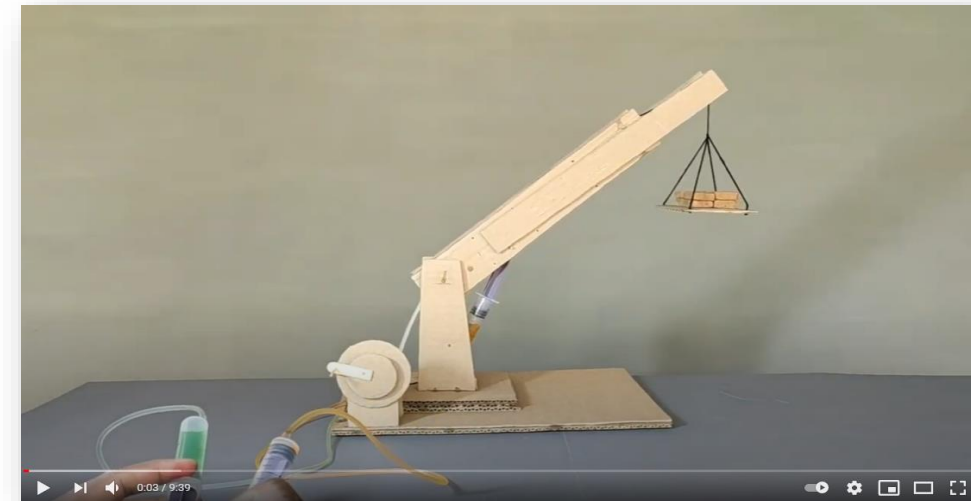
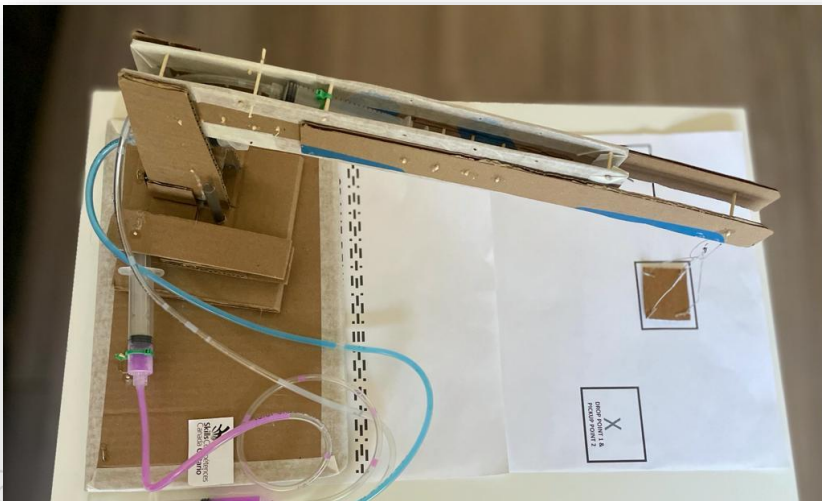
Hydraulic Crane Challenge

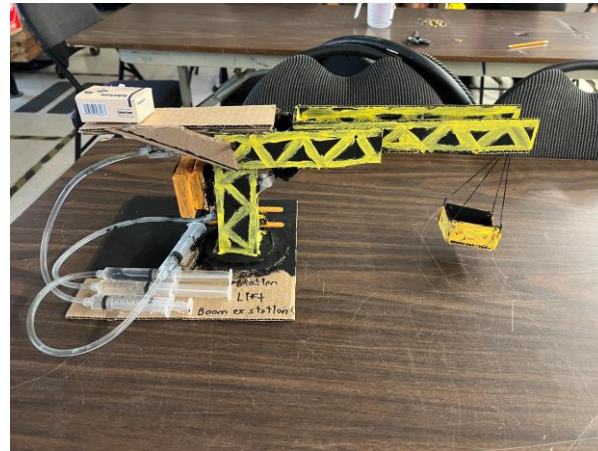
Teams will build a crane and use hydraulics to move the crane so that it can pick up and drop off a load to certain predestined points.

This contest consists of:

- 1) Design Document
- 2) Photo
- 3) Video

Grade 8





Air Pressure Rocket Challenge

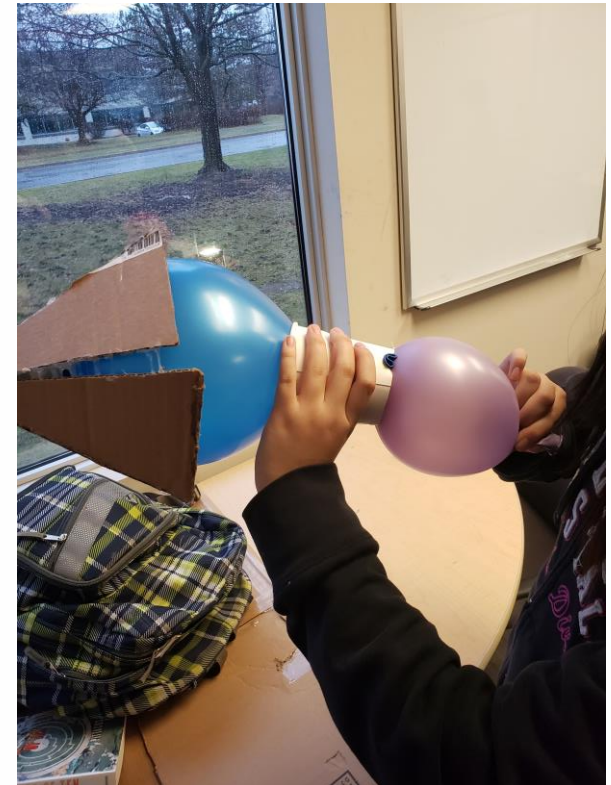
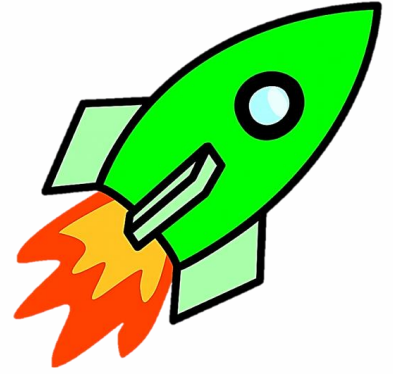
Teams will create a capsule that is attached to a series of balloons which will be used as a rocket. Teams will use pneumatic energy to set off a launch sequence where balloons push one another to keep the capsule in the air.

This contest consists of:

- 1) Design Document
- 2) Photo
- 3) Video

Grade 9-12







Overview

This program is inclusive for all students to participate from across the province, as it can be completed from a classroom directly tied to the curriculum or at home for virtual classrooms. Submission is completely virtual. This program promotes sustainability of re-using common items found at home or in a classroom (example: a junk drawer), along with recyclables or low costing materials of \$10 or under. These challenges endorse teamwork along with safety, and teams have the chance to win medals at the regional level, and the opportunity to continue to the Championship level! Each contest is judged on several different factors, each with a common theme of a timed, distance and/or weight challenge. Not only is each contest connected to curriculum; the lesson plan also identifies the various skilled trades and/or technologies related to each contest project.

Competition	Grades	Related Topics from Math and Science Curriculums
Robot Walker Race	2-3	<ul style="list-style-type: none"> • Angles • Units of time and duration • Simple machines • Movement of objects • Strong and stable structures • Forces and action of forces
Cardboard Car Race	4-5	<ul style="list-style-type: none"> • Machines and mechanisms • Motion • Wheels • Effects of forces acting on structures • Design, build, and test devices • Practical applications of science and technology concepts in various occupations, including skilled trades
Paper Glider Competition	6-7	<ul style="list-style-type: none"> • Flight technology and forces of flight • Design, build, and test models and structures • Centre of gravity and balance of forces • Practical applications of science and technology concepts in various occupations, including skilled trades.

Competition	Grades	Related Topics from Math and Science Curriculums
Hydraulic Crane Challenge	8	<ul style="list-style-type: none"> • Make objects and models • Hydraulic systems • Viscosity and fluids • Pressure and compression of liquids • Systems in action • Practical applications of science and technology concepts in various occupations, including skilled trades.
Air Pressure Rocket Challenge	9-12	<ul style="list-style-type: none"> • Earth and space science • Forces at work • Motion and energy • Practical applications of science and technology concepts in various occupations, including skilled trades.



Teams & Registration

- Teams of 4 students can participate.
- Teachers can register all teams at the same time, in the same form.
- Registration is still mandatory; however, no teams will be turned away. The challenges are open to all who would like to participate. Team members do not need to be chosen at the time of registration. This is a space registration. Team members can be chosen after the registration is complete and submitted during the submission deadline.
- Virtual schools/hubs, as well as hybrid virtual classes, can register just like in-person schools. This competition is also open to private schools.
- Schools may register as many teams as they would like to participate.
- Registration to participate is FREE.



Regional Round

Step 1: Compete in the Regional round!

Skills Ontario has divided the 76 public school boards across Ontario into regional divisions as per their geographic location. Similar to the regional divisions of the Qualifying Competition that leads to the Skills Ontario Provincial Competition. There are 7 regional divisions.

A team must place within the top 3 of their regional division during the Regional Competition to be eligible for the Provincial Championships.

Refer to the PDF button available on the website to review which Regional Division your School Board belongs to. This is the division your team will compete within during the Regional Competition.

If your school board is not listed, or if you notice an error, please contact the Competitions Coordinator at awilkins@skillsontario.com. To keep programming consistent, these regions are the same as the Qualifying Competition (for the most part).



Championship Round

Step 2: Top 3 Winners from the 7 Regions will continue to the Championships!

The Championship round consists of the same scope, but with a twist element! The twist will be announced January 12th. Teams can use their exact same project and modify as they see fit for the twist OR create an entire new project for the twist element.



Changes for 2023-2024

- The scopes have been updated and the challenges have been modified from previous years.
- Skills Ontario has taken steps to ensure this year's submission process is easier!
- New curriculum is integrated into the projects.
- The challenges are open to all who would like to participate! Meaning if incorporated into the entire classroom, all teams from the class may submit.



Health & Safety

Health and safety is a priority for Skills Ontario.

Even as a virtual remote contest, mandatory Safety questions/answers are required for each submission.

This makes sure students know and understand potential hazards around them, in the space they work, and/or the tools they may use to participate.



The Design Document

It is important that this document is filled out and submitted with your final submission. The Design Document contains: important safety questions, information about your design, and all materials used for the project.

Teams can:

- Print the document, fill it out with pen or pencil, scan it, and submit it.
- Fill in the PDF on your device and then submit it.



Resources

The following links are for reference only. You may learn from these. Your submission should not be **identical**, but it can be very similar. We encourage you to use your imagination and be creative!

Contest	Links
Robot Walker Race	<ul style="list-style-type: none"> • https://www.instructables.com/Gravity-Powered-Robot-Walker/ • https://www.youtube.com/watch?v=ITTcWrsI93s
Cardboard Car Race	<ul style="list-style-type: none"> • https://www.youtube.com/watch?v=3JM8XCmNhIE • https://www.youtube.com/watch?v=ZfiV1oTF-ks • https://www.youtube.com/watch?v=RwwwvRJhR-YQ
Paper Glider Competition	<ul style="list-style-type: none"> • https://www.youtube.com/watch?v=GdZiesdZXbA • https://www.youtube.com/watch?v=x-rcysOPn-4
Hydraulic Crane Challenge	<ul style="list-style-type: none"> • https://www.youtube.com/watch?v=AklAmKKu1y0 • https://www.instructables.com/CARDBOARD-Robotic-Hydraulic-Arm/ • https://www.youtube.com/watch?v=dYhWg3038rl
Air Pressure Rocket Challenge	<ul style="list-style-type: none"> • https://www.youtube.com/watch?v=oni6Z5MVvzg • https://www.youtube.com/watch?v=JbuuhD_5B5E • https://www.youtube.com/watch?v=ZOrGMru5JvE



Info on Skilled Trades and Technologies Assistance

At the end of each scope, an assist tool has been provided in relation to skilled trades and technologies in direct relation to the project itself.

It highlights some of the careers in relation to the project and describe what those careers are with a description.



Submission Process

This year's submission process is easier than it has been in the past.

Please visit [the submission site](#) and fill out all the required information. You can submit all your projects at the same time into the “File Upload”. You may browse for the files on your device, or you may drag and drop your files.

Please ensure each of your teams have put all parts of their submission into ONE zipped folder (one folder per team).

Ensure that each team labels their folder with their TEAM NUMBER (e.g., Team 1). This will ensure that we can tell their projects apart.

Medal Ceremonies



- After submissions have been judged for the junk drawer races, winners will be announced during the virtual ceremonies.
- Medals will be shipped from Skills Ontario to the schools of the regional challenge winners.
- Check the website the day of the ceremony for the link to attend.
- Medals are French one side and English other side.

Important Dates

Event	Date
Regional Round Scopes Released on Website	September 1, 2023
Registration for Regional Competitions Opens	September 1, 2023
Junk Drawer Races 2023-24 Announcement	September 8, 2023
Submissions for Regional Competitions Due	December 1, 2023, by 11:59 PM
Championship Round Scopes Released on Website	January 8, 2024
Regional Competitions Winners Announced	January 12, 2024 (via virtual ceremony)
Championship Round Challenge Announced	January 12, 2024
Championship Round Registration Opens	January 12, 2024
Championship Round Submissions Due	March 22, 2024, by 11:59 PM
Championship Round Winners Announced	April 19, 2024 (via virtual ceremony)



Thank you! Questions?

Should you have any questions regarding this competition after this meeting, please do not hesitate in contacting the Competitions Coordinator, Angela Wilkins, at awilkins@skillsontario.com

<https://www.skillsontario.com/junk-drawer-races>