

The CanSat Design Challenge 2024-25 for Canadian High Schools

What is the CanSat Design Challenge?

The CanSat Design Challenge is a competition for Canadian high schools to design and build a **CanSat**.

What's a CanSat?

A CanSat is a **simplified satellite** which is the **size of a pop can**. It contains a computer and some sensors, and conducts some simple scientific experiments. We launch it up (or drop it from a helicopter) to a height of about 1km, and it collects data as it parachutes down.

What Does the CanSat Do?

Each CanSat has to **record the temperature and air pressure** once per second; and, you get to choose an additional experiment which it will conduct. There are two categories in the competition: in the **BEGINNER** category, your CanSat stores the data on a memory card on the CanSat; in the **ADVANCED** category, the CanSat transmits the data by radio to a receiver which your team builds.

Who Can Participate?

This competition is for Canadian high schools and select community colleges. You need a team of **at least 2 students for Beginner**, and **4 to 6 students for Advanced**. And an Advisor (who can be a teacher or a parent). You don't even need to be from the same high school!

What Do We Need in order to Participate?

Not much! We will provide you with a Beginner CanSat kit, if you'd like one. It would be great if you have some basic electronics & hobby tools, but we have tutorials to help you if you don't.

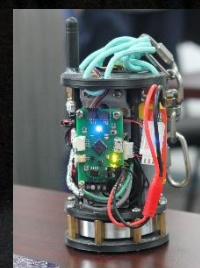
If you participate in the **BEGINNER** category, you'll only need to mail the CanSat to us and we will launch it for you then collect the data afterwards. If you are in the **ADVANCED** category, you'll need to travel to Alberta in April, 2024, for the launch campaign.

How Much Time is this Going to Take?

For the Beginner category, about 1-2 hours per week. The Advanced category will require a bit more than that, and requires you to prepare a detailed report describing your design.

How much is this going to Cost?

It's absolutely free to enter! We can provide you with the basic electronics required for the **BEGINNER** category. You can add other experiments, and electronics, but the total cost must not exceed \$800.



What if I Don't Know Anything about Electronics or Programming?

We will help you! Here are some of the online tutorials we will offer during the competition.

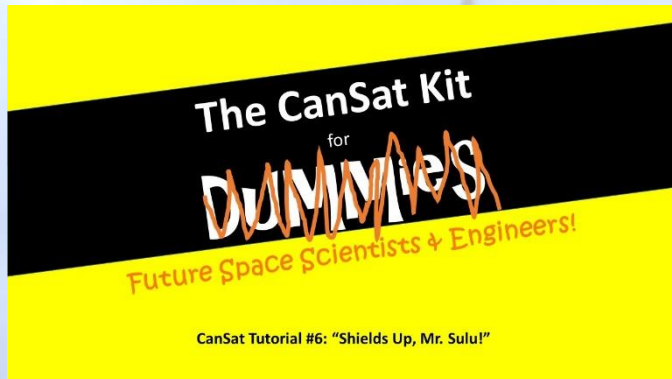
CanSats 101: I've just received my CanSat kit - where do I start!

Connecting the Temperature and Pressure Sensor

Saving Data Onto an SD-Card

Canning the CanSat

Aw, Chute!



We're In! How & When Do We Register?

There is a registration form on our website: www.csdcms.ca. It is due by October 31, 2024.

Who Took those Great Background Photos?

Both photos were taken by Lawrence Reeves. The first page background is a photo of Comet NEOWISE, at Lost Lake, in Whistler, B.C. (photographing the night sky is one of his hobbies). The photo of the rocket launching was taken at the ADVANCED category launch campaign in April, 2023, near Lethbridge, Alberta. It launched one of the CanSats up to a height of just over 1,100 metres.

What Do We Win If We Win?

In the Advanced category, we have a beautiful hand-made wooden rocket trophy that you can display for a year. One of the teams might also be invited to attend a two-day workshop at the European Space Agency's spacecraft facility in Noordwijk, Netherlands.

The CanSat Design Challenge is a fun and educational experience for students! We hope to hear from you. Are you up for the Challenge?

For more information:

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