



Mars Startup School

Challenge 5
Pathways & Bridges

**Let's Imagine the
Future of STEM
Education in Canada**

Welcome to the **Mars Startup School.**



As students, you have the experience and creativity to create a better education system for STEM (Science, Technology, Engineering & Math). As we imagine a new society on Mars we will need new schools. This is a unique opportunity to reimagine school from the ground up. It is up to you to design the components of Mars Startup School.

This mission requires courage, curiosity and creative thinking.
Let's blast off and get started!

Your Startup Design Kit.

Designing a new education system is not an easy task, so we created this workbook to help you through the Challenge. It consists of:

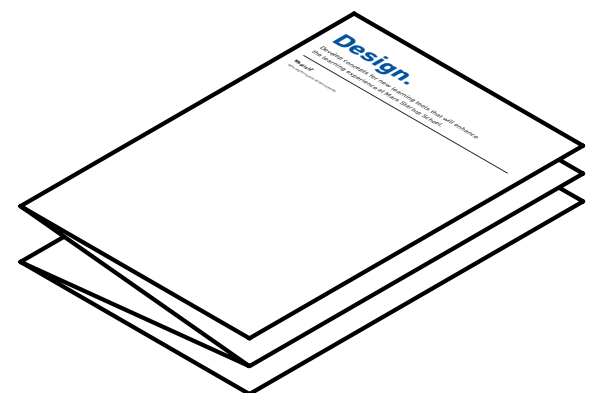
1 Student Workbook.

The *Student Workbook* is your guide throughout this Challenge. It includes all the information required to develop and communicate your ideas.



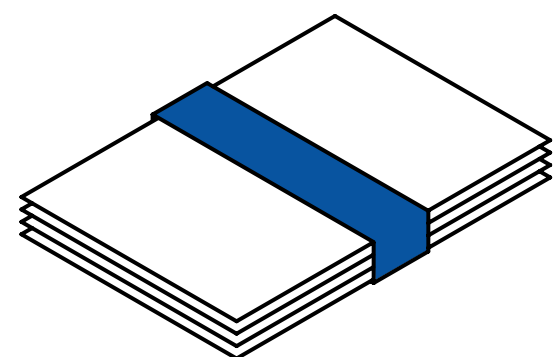
2 Worksheets.

The *Worksheets* will help your team organize your ideas as you design a component of Mars Startup School. They build on one another to ensure your team creates a solid concept.



3 Precedents Cards.

Precedents Cards showcase projects from around the world to provide inspiration and spark creativity within your team. These can be helpful at any point in the process.



Mars Startup School Challenge.

Here are the steps your team will follow throughout the day to design a component of the Mars Startup School and totally reimagine STEM education. Let the Challenge begin!

1

Meet Your Team! (25 min.)

Meet Your Team! Get to know your teammates, their special talents and their passions.

2

Design Criteria. (40 min.)

Focusing on a component of Mars Startup School, your team will define design criteria, which will create a framework for your design concept.



3

Concept Design. (60 min.)

Building on your design criteria, your team will design a solution, experience or team that will transform STEM education.

4

Share. (45 min.)

Gather with other Mars Startup School teams who have worked on different components of the school. Share your solutions and see how they could all work together.

!

There are many unknowns throughout this Challenge, so don't be limited to the tools provided in the Mars Startup School Design Toolkit. Be creative and have fun!

Step One.

Meet Your Team!



Teamwork and collaboration are key to the success of this Challenge. Spend 25 minutes to get to know your team.

Introductions (5 min.)

Get to know each other and note the special talents each of you will contribute to the team. Quickly go around the table and share:

- Your name
- Where you go to school
- One special talent/strength

Take note of everyone's special talents because this can be helpful in the design process.

Play a Game (10 min.)

Two truths and a lie is a great game to help break the ice and loosen the mood on your team.

- Everyone write 2 truths and one lie on Post-its
- Go around the table and have members of the team guess the lies

Make sure everyone at the table has a chance to play before moving on to **Step 2**.

3. Discuss Your Vision for Mars Startup School (10 min.)

Before your team gets down to work, take a few minutes to think about how cool this challenge is... to design a Startup School on Mars. Imagine the possibilities of creating a new school. In what ways will the school you build on Mars be different from your school here on Earth? Write down the first ideas that come to mind and discuss as a group to get the creativity flowing. Make sure to take notes.



Brainstorm Tips & Rules.

Here are a few brainstorming tips to remember before your team begins imagining Mars Startup School:

- **Be open, honest and imaginative.**

When completing the Challenge, there are no right or wrong answers. Always be polite and respectful.

- **Forget about today's reality and dream big!**

Think about how much things have changed in your lifetime and imagine how much they will continue to change in the future.

- **Take it to heart.**

This is an opportunity to influence the next generations in a positive way. It's not often you're asked to contribute to a brighter future for Canada's youth, be thoughtful.

Step Two.

Design.



Now that your creativity is flowing, it's time to focus our efforts on one component of the Startup School. The component that you will be focusing on is creating the Bridging Experience.

In schools today, teachers, guidance counsellors, careers class, digital tools, friends and family help students make decisions about their future. Yet, figuring out what comes after high school can be really challenging.

It is your job to imagine the Bridging Experience. This includes experiences during high school that help students transition into post-secondary education, entrepreneurship or work.

Instructions: Bridging Criteria (40 min.)

Use the **WORKSHEET: OUR BRIDGING CRITERIA** to help think about what you want to do after high school and what programs, tools and experiences can help you get where you want to go.

- Read each question on the worksheet aloud.
- Spend 2 minutes on each question and encourage everyone on the team to write as many ideas as possible onto Post-its.
- After writing ideas for each question, have everyone on the team place their ideas onto the worksheet and cluster similar ideas.

Summarize the key ideas and features at the bottom of the page to define your design criteria. Design criteria may include the pathways and bridges you envision after high-school and the types of programs, tools, and experiences that will support you at Mars Startup School.

OUTCOME: Understand what students want to achieve after graduation and define the elements of a bridging system at Mars Startup School.

Design.

Identify your goals and aspirations beyond high school, and the programs, tools and experiences that can help you get where you want to go.

Our Bridging Criteria

What are you passionate about?

Consider what programs, tools or experiences can help connect your passion to a meaningful career or educational experience.

What do you want to do after high school?

Consider what programs, tools or experiences can help get you where you want to go. What would they include?

What would you like to know to help you make an informed decision about your career path?

Consider what resources are currently available to you and what they might be lacking.

What programs, tools and experiences do you believe will prepare you for life after highschool?

Consider what has helped you achieve your goals.

What experiences outside the classroom can inspire students to explore STEM careers?

Consider programs, relationships and experiences that have inspired you or you will want.

What will the ideal bridging experience include or look like to you?

Consider what you will want to learn or be exposed to that will help you make an informed decision about life after high school.

Our Design Criteria.

Describe the key elements of the bridging experience at Mars Startup School.

Step Two Cont'd.

Concept Design



Now that you have some clear ideas about what problems you plan to solve, features your team wants to include and measures of success, you will need to work out the details of the design.

Instructions: Bridging Experience (60 min.)

Use the **WORKSHEET: OUR BRIDGING EXPERIENCE** to help your team develop the details of the Bridging Experience at the Startup School.

- Answer each of the questions on the worksheet in as much detail as possible. Refer to your initial brainstorm to extract the key ideas that everyone agrees should be included in your concept.
- After you have developed a concept for the bridging experience, create a timeline to demonstrate how a student at Mars Startup School will benefit from the experience you've designed. Describe how the experience evolves during the four years of high school and what happens to help prepare students for the future.

Don't be limited to the prompts on the poster. If you feel something else should be included or communicated about your concept - add it!

OUTCOME: Create a concept that details a Bridging Experience and makes the transition from high school to post-secondary or working easier at the Startup School.

Design.

Develop concepts for the bridging experience that will prepare students for what comes after graduating from Mars Startup School.

Our Bridging Experience

What is it?

Define what the Bridging Experience will look and feel like.

How does it work?

Define what the Bridging Experience includes and how it will help you choose a meaningful path.

Who will use it and how?

Define where and how students access the Bridging Experience.

Why will students, teachers and others want to use it?

Define why it is different from current resources and experiences available to students.

Create a timeline.

Demonstrate how the Bridging Experience exists and evolves over 4 years.

The timeline section consists of four vertical blue bars, each representing a year of the experience. These bars are currently empty, serving as a template for the user to define the progression and evolution of the Bridging Experience over the four-year period.

Step Three.

Share.



Summarize your Challenge and ideas to share with the other teams in Mars Startup School. Each team will only have **3 minutes** to present their final concepts, so be sure the team captures and communicates the most important features of your design!

Instructions: Share (45 min.)

Use the **SHARE WORKSHEET** to help you summarize your ideas. This should only take a few minutes to help you recap your ideas. You can use the other posters to help you present.

- Restate the design Challenge in your own words.
- Summarize the Bridging Experience you designed and describe how it meets the design criteria you identified at the bottom of the **WORKSHEET: OUR BRIDGING CRITERIA**.
- Describe how the bridging experience will change the education system and the impact of the solution on future students.

Gather with the other teams in your Startup School community to share solutions and have a closing discussion about the future of STEM education.

OUTCOME: Summarize the key ideas your team developed throughout this process and communicate your ideas to the other teams.

Share.

Summarize your Challenge and ideas to share with the other teams.
This should include the most important features of your design!

Our Team Summary

Our vision for Mars Startup School is...

Summarize your Mars Startup School vision.

Our design Challenge was...

Restate your design Challenge in your own words.

Our bridging criteria...

Summarize key ideas from your bridging criteria.

This will be different from the education system on Earth because...

Describe how the Bridging Experience you designed will provide new pathways for students that didn't exist before.

How it works...

Use sketches, day in the life scenarios or diagrams to showcase what your final design concept for the bridging experience.



Let's Wrap It up!



Thank you for participating in this Youth Summit and contributing ideas that will help shape the future of STEM education in Canada.

Before you depart please gather the worksheets, Post-its, sketches and notes your team produced over the course of this Challenge. **Place everything back on the table in order.**



Next Steps.

Canada2067

Believe it or not, **your ideas can influence change.** The ideas you produced today will be collected, captured, summarized and presented to policy makers from across Canada to help shape the future of STEM education.

How to Stay Involved.

If you enjoyed taking part in the **Canada 2067** Youth Summit and completing Mars Startup School Challenge you can stay involved in a number of ways:

- Host your own Canada 2067 Startup School workshop by downloading the materials we used today! www.explorecuriosity.org/canada2067
- Host a conversation about STEM learning using the Canada2067 Conversation Guides. Choose from: STEM and Everyday Life; The People We Learn From; and STEM and the Student's Role in Learning. www.canada2067.ca/en/are-you-a-student/#youth-workbooks
- Join us on social media to raise awareness about Canada2067 initiatives. Support us [@Can2067STEM](https://twitter.com/Can2067STEM). Together we can make difference! [#Can2067](https://twitter.com/Can2067)
- Learn more about STEM opportunities through CurioCity career profiles. www.explorecuriosity.org/canada2067





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