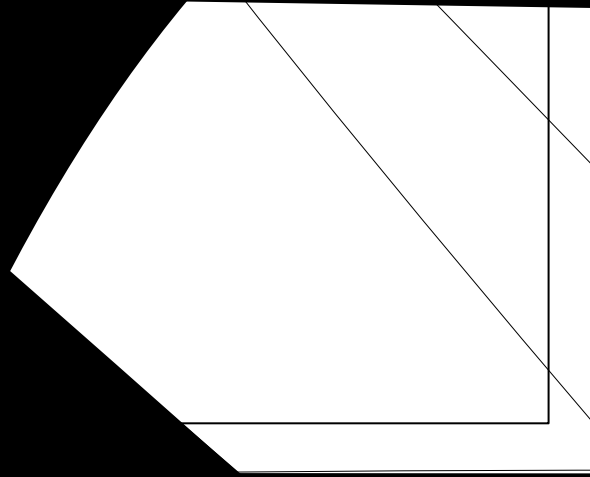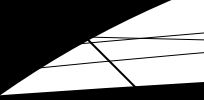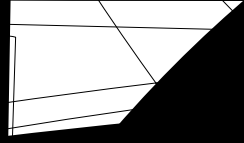# YOUR IDEA, OUR WORLD.

Teacher Guide (Grade 9 - 12)

What is Solve for Tomorrow?

How Does It Work?

1. **Form a team:** Students from the same school between the ages of 10 and 18 (grades 6 to 12) may enter as a team. Teams can include up to 50 students – an entire classroom is acceptable. A submission must be sponsored and submitted by a teacher at the school.

2. **Judges evaluate entries:** A judging panel chooses 12 teams as Regional Finalists for the second round. From there, 4 teams are selected as National Finalists. These National Finalists can attend a workshop that guides them through the third round of the contest.

3. **Finalists submit videos to win:** Finalists each produce a video summarizing their entry, from which judges choose the winners.

What Are The Prizes?

<u>Grand Prize (1st Place):</u> The 1st-place winner of Samsung's Solve for Tomorrow contest receives $50,000 in Samsung Vouchers and/or Samsung products for their school, which is named The School for Tomorrow and holds the title for a year.

<u>2nd & 3rd Place:</u> The 2nd- and 3rd-place winners of each receive $10,000 in Samsung Vouchers and/or Samsung products for their school.

<u>Regional and National Finalists:</u> Twelve Regional Finalists each win $2,500 in Samsung Vouchers and/or Samsung products for their school, and four National Finalists each receive $5,000 in Samsung Vouchers and/or Samsung products for their school.
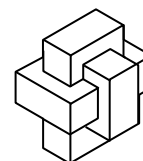
<u>Fan Favourite:</u> The public gets a chance to vote on their Favourite National Finalist entry, and the most popular finalist will win $5,000 in Samsung Vouchers and/or Samsung products for their school.

Why Should My School Enter?

This contest fosters a sense of responsibility, environmental stewardship, and social awareness in your students. By supporting your school's entry, you contribute to an experience that extends beyond the classroom, preparing students to tackle future challenges in health, sustainability, and advocating for equity-seeking groups.

Curriculum Connections

The provided resources (Teaching Slides and Student Workbook) for the Solve for Tomorrow contest are created to align with a variety of **secondary school (Grade 9 - 12) courses across Canada.**
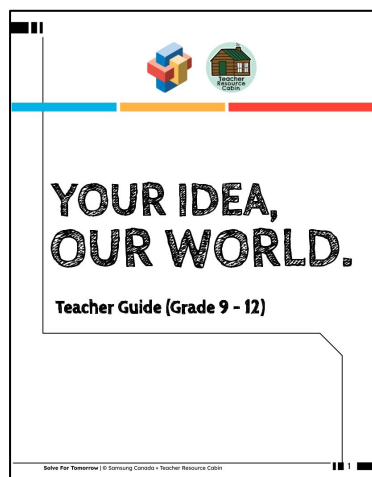
A general rubric and six different rubrics are provided in the Student Workbooks to offer **ready-to-go assessment options** for teachers. The rubric options included are for Science, Social Sciences, Business, Computer Science, Food and Nutrition, and Geography courses.

Throughout the process of preparing entries for the contest, you should encourage your students to apply the knowledge they've gained throughout their course when developing their STEM-based solutions. Here are some ideas/examples:

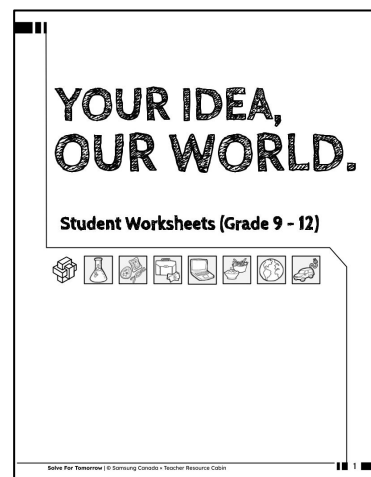|	
Science Courses	● Encourage students to apply scientific principles learned in class to real-world sustainability challenges. ● In biology, students can focus on **biodiversity conservation** projects. ● In chemistry, they can explore **sustainable material** development. ● Physics students might design **energy-efficient systems**.
Social Sciences Courses	● Explore social inequalities and their root causes, including access to education, healthcare, and resources. ● Advocate fo**r policy changes or community-based initiatives** to support equity-seeking groups. ● Design **awareness campaigns** for mental health or social issues, linking back to research-based evidence.
Business Courses	● Position the contest as a **business proposal project** or case study. ● Business students can analyze the economic feasibility of proposed solutions, conduct cost-benefit analyses, and develop business plans for initiatives. ● Emphasize the importance of sustainable practices in business operations and decision-making.
Computer Science Course	● Computer science students can **develop apps or programs** that address challenges, such as energy monitoring tools or waste reduction applications. ● Design systems that address urban problems like traffic congestion, using data-driven solutions.
Food and Nutrition Courses	● Students can focus on designing educational programs on **sustainable food choices.** ● Address food waste by designing better food storage or distribution systems, especially for equity-seeking groups. ● Create solutions to improve access to nutritious food in **food deserts** or low-income communities.
Geography Courses	● Propose urban planning solutions that improve **community sustainability** (e.g., green spaces, improved transportation). ● Analyze how geography affects the **distribution of resources** and develop strategies to ensure equitable access.

Getting Started

There are 3 resources provided for Grade 9 – 12 teachers to get started with this contest:

Teacher Guide
(This document)
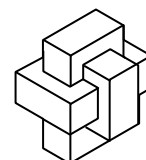
Teaching Slides

Student Workbooks

Before you begin, read through this **Teacher Guide** to understand what to do with your students each day to prepare to enter the contest.

Students will work through the student workbooks over six days. This will help students come up with their own unique ideas.

Lesson Plan Overview		
Day 1: Why Your Ideas Matter	**Day 2:** Innovative Technology	**Day 3:** Problem Identification
Day 4: Proposing Solutions	**Day 5:** Presentation Planning	**Day 6:** Presentation and Feedback
Day 7: Contest Entry		

Then, as a class, you need to decide which idea to enter. Students can enter as a small team or as a class.

Once an idea is selected, the teacher will write an official contest entry on the **Solve for Tomorrow website** before the contest deadline, December 20, 2024.

Day 1: Why Your Ideas Matter

On Day 1, the focus is on why students' ideas matter, focusing on the principle of thinking globally while acting locally. The goal is to inspire students to recognize the value of their unique perspectives and encourage them to contribute meaningfully to their communities. Through discussions and activities, students will explore how their ideas can create positive change and address local issues while considering the broader global context.

Learning Goal: Students will understand the significance of their ideas and how they can impact both their local communities and the world.

Success Criteria:
- Express the value of their own ideas and how they contribute to problem-solving.
- Identify local issues that can be addressed through innovative thinking.
- Connect their ideas to global challenges, illustrating the relationship between local actions and global outcomes.

Resources	
Teaching Slides: **Slides 1 – 15**	Student Workbook: **Pages 3 – 4**

- **Slides 1 - 4:** Introduce the Solve for Tomorrow contest to students. Explain the purpose of the contest and the prizes/recognition. The winning school will become The School of Tomorrow for one year.

- **Slides 5 - 8, Workbook Page 3:** Cover the topic "Why Your Ideas Matter". The goal is to inspire students to recognize the value of their unique perspectives and encourage them to contribute meaningfully to their communities.

- **Slides 9 - 15, Workbook Page 4:** Identify key terms (health, sustainability, equity-seeking groups). By identifying and understanding these key terms, students will build a solid foundation for future discussions and activities, allowing them to engage more deeply with the topics of health, sustainability, and equity-seeking groups.

Day 2: Innovative Technology

On Day 2, the focus is on ensuring that students have a shared foundational understanding of innovative technology. Students will build on their prior knowledge while exploring new concepts related to technological advancements and cutting-edge solutions. They will examine how innovation intersects with various subjects in their course content, fostering a deeper understanding of the role technology plays in shaping the future.

Learning Goal: Students will develop a foundational understanding of innovative technology and its integration into their course content.

Success Criteria:
- Articulate a clear definition of innovation and explain its importance in modern society.
- Analyze and discuss examples of advanced technologies.
- Make connections between technological innovation and relevant high school courses.

Resources	
Teaching Slides: **Slides 16 - 24**	Student Workbook: **Pages 5 - 8**

- **Slides 16 - 21, Workbook Page 5 - 6:** Explore innovative technology that already exists in the world today. This is important, as students will be showcasing their own STEM-based ideas and inventions.

- You can prompt students to investigate a range of real-world examples—such as renewable energy solutions, AI advancements, medical innovations, and eco-friendly materials. Encourage them to consider how these technologies solve existing problems or improve our lives.

- **Slides 22 - 24, Workbook Page 7 - 8:** Make the connections between the key topics and course content clear (Review Page 4 of the Teacher Guide for support with this). Allow students to make their own connections between course content and innovation for a variety of high school courses. Demonstrate that innovation and problem-solving for real-world issues is interdisciplinary and requires a collective effort to address.

Day 3: Problem Identification

On Day 3, students will focus on recognizing challenges within a chosen focus area: health, sustainability, or equity-seeking groups. By identifying specific problems, they can lay the groundwork for finding meaningful proposed solutions in future lessons.

Learning Goal: Students will identify three key issues within their chosen focus area, explain how each impacts their community, and formulate clear problem statements.

Success Criteria:
- Analyze the identified issues and consider their local impact.
- Recognize and understand factors hindering the implementation of solutions.

Resources	
Teaching Slides: **Slides 25 - 39**	Student Workbook: **Pages 9 - 11**

- **Slides 25 - 31:** Facilitate a class discussion about issues and their impacts. Connect discussions to key course concepts.

    - For example, the issue of "Traffic Congestion" (Slide 39) could be addressed in a Computer Science course by designing an app that reroutes traffic based on real-time congestion data. In Food and Nutrition, students could discuss how traffic delays affect the transportation of perishable goods, leading to food spoilage and increased food waste.

- **Workbook Page 9:** Instruct students to identify problems in their community related to a chosen focus area: health, sustainability, or equity-seeking groups. Discuss findings as a class, allowing students to share their identified issues.

- **Slides 32 - 39:** Explore common barriers to implementing solutions to real-world issues.

- **Workbook Page 10 - 11:** Guide students in formulating a clear problem statement for their chosen issue. Discuss the importance of a well-defined problem statement in guiding effective solution development.

Day 4: Proposing Solutions

On Day 4, students will transition from identifying issues to the phase of developing innovative and practical proposed solutions. This step is important as it forms the core of their participation in the Solve for Tomorrow contest. They will need to choose one solution, invention, or idea to submit for the contest.

Learning Goal: Students will analyze and propose solutions to identified community issues, considering factors such as cost, ease of implementation, and overall impact.

Success Criteria:
- Propose three distinct, creative, and innovative solutions.
- Ensure each solution is relevant to the identified real-world challenge.
- Clearly articulate the key features of **one solution.**

Resources	
Teaching Slides: **Slides 40 - 50**	Student Workbook: **Pages 12 - 15**

- **Slides 40 - 50:** Review the various problems in the community that students identified, and encourage them to start brainstorming potential solutions. As they develop their ideas, prompt students to consider key factors such as cost-effectiveness, ease of implementation, and the overall impact their solutions could have on the community.

  - Guide them to think creatively while also being mindful of practical limitations, ensuring that their ideas are both innovative and feasible for addressing local challenges.

- **Workbook Pages 12 - 13:** Students will brainstorm and think of solutions to the problems they identify in their focus area.

- **Workbook Pages 14 - 15:** Students will write a formal solution statement that clearly identifies how they plan to address an issue in their community. They will identify how their solution will address the barriers identified on the "Problem Statement" pages (Pages 10 - 11).

Day 5: Presentation Planning

On Day 5, students will begin preparing to present their solutions to their classmates. They will develop a formal action plan that outlines their ideas, detailing how their solution addresses the community challenge. This step will help students organize their thoughts and ensure their solution is clear, practical, and impactful.

Learning Goal: Students will plan and structure an effective presentation to communicate their proposed STEM-based solution.

Success Criteria:
- Identify the purpose of the presentation and tailor it to engage classmates.
- Organize the presentation in a logical and coherent manner.
- Use feedback to refine and improve individual presentations.

Resources	
Teaching Slides: **Slides 51 - 62**	Student Workbook: **Pages 16 - 26**

- **Slides 51 - 55:** Present slides to give students tips on creating a detailed slideshow to showcase their proposed solution idea.

- **Workbook Page 16 - 19:** Students will plan their project presentation slides and complete the action plan.

- **Workbook Pages 20 - 26:** There are 7 rubric options given. Choose one (based on which course you are teaching) to give to your students so they can review the expectations for this project. There are rubrics on the Teaching Slides on Slides 56 - 62. Delete the ones you do not need.

- When students have completed the planning sheets, they can create their slideshows to showcase their ideas to their classmates. Remind students to review the **rubric** to ensure they include all required information.

- If some students are done early, they can present their slideshow to a peer and request feedback to improve their presentation before they present tomorrow.

Day 6: Presentations and Feedback

On Day 6, students will present their ideas to their classmates and receive feedback. You could also invite other classes in the school, principal/vice-principal, or community members (parents/guardians) to listen to presentations, to make it an exciting event.

Learning Goal: Students will present their proposed STEM-based solutions and actively participate in providing constructive feedback to their peers.

Success Criteria:
- Clearly present ideas in a professional, organized presentation.
- Demonstrate a positive and receptive attitude towards suggestions for improvement.
- Implement specific improvements based on feedback received.

- Outline the agenda for the day, emphasizing the importance of collaboration, constructive criticism, and continuous improvement.

- Each student presents information about the challenge they are targeting and their proposed STEM-based solution.

- Provide guidelines for constructive feedback, emphasizing the importance of specific, actionable suggestions. Remind students to focus on both strengths and areas for improvement.

- Example student feedback:

  - "I appreciated the clarity of your presentation."

  - "Can you explain how your solution addresses the specific aspects of the local challenge?"

  - "I didn't fully understand the connection between your solution and the identified problem. Could you elaborate?"

  - "What inspired you to choose this particular solution?"

Day 7: Contest Entry

On Day 7, after all presentations are complete, the class will come together to collectively decide which innovative idea to submit for the contest. The selection process will involve reviewing all the ideas, considering their feasibility, creativity, and potential impact, while also evaluating which solution best addresses the identified problem in a meaningful way.

Students may enter as a team or as a class. Up to a maximum of 50 students.

The submission must be sponsored and submitted by a teacher at the school. One entry per teacher, but multiple teachers from the same school may enter.

Once an idea is selected, students will work with the teacher to fill out the submission form on the Solve for Tomorrow website before the contest deadline, **December 20, 2024**.

Click the link below to the Samsung website to enter the contest:

www.samsung.com/ca/solve

References

References for definitions and key concepts introduced in teaching slides and student workbook.

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