STEM INNOVATION ACADEMY

STEM Innovation Academy Public Charter School

Rolling Education Plan

2023-2026

Accountability Statement

The Education Plan for STEM Innovation Academy for the 2023-2026 school years was prepared under the direction of the Board in accordance with the responsibilities under the *Education Act* and the *Fiscal Planning and Transparency Act*. This plan was developed in the context of the provincial government's business and fiscal plans. The Board used its performance results to develop the plan and is committed to implementing the strategies contained within the plan to improve student learning and results.

The Board approved the Education Plan for 2023-2026 on May 16, 2023.

Carolyn Chin
Board Chair

Joanne Higgins
Superintendent

Message from the Board Chair

The STEM Innovation Academy (STEM IA) and its Board of Directors are proud to present the Three-Year School Education Plan for 2023-2026. Building upon last year's plan, we enhanced our initial goals and outcomes that were developed under each Provincial Assurance Domain and expanded our Student Growth and Achievement to include an outcome pertaining to First Nations, Metis and Inuit students.

We have many successes and learnings from our last two years of operation and look forward to continued growth as we move forward with three priorities in the coming year:

1. Expansion of high school to include grade 11 in August 2023. Our new permanent high school will be part of the Calgary Charter School Hub, located in the former SMART Technology Building situated in the University Innovation Quarter;
2. Curriculum Development and Enhancement in both junior and senior high; and
3. Launch of a Mental Health Pilot Program.

With each year that passes, we learn from our successes as well as areas that require strengthening. We are ready and willing to pivot when it is evident changes need to be made, and we will continue to strive for excellence in partnership with parents, students, staff, industry and education stakeholders, and the Province of Alberta. Together, we are focused on ensuring our STEM educational programming is relevant, innovative, and appropriate such that students can meet success and become leaders in the future.

Carolyn Chin

Our Mission

Inspiring the next generation to be knowledgeable creators, innovators, and responsible leaders.

Our Vision

STEM Innovation Academy will be the premier learning community for the design and advancement of innovative Science, Technology, Engineering, and Mathematics education.

Key Foundations

Preparing Future Ready Leaders

Our ever-evolving future will require innovative and adaptable leaders. Students at STEM Innovation Academy are inspired to be technology creators and innovators, not just technology users. We engage students with real-world problems, expose them to possibilities for post-secondary and future careers, and develop them as critical thinkers and responsible citizens.

Excellence in Teaching and Learning

We believe a student's education should be well rounded. We use evidence-based, research informed instructional practices. Knowledge is the core foundation for the skills and mindsets we seek to develop in students. Students make connections between the knowledge they are learning and real-world experiences, current events, and/or their daily lives. Students are engaged and active participants in their learning. Our students are resilient - we challenge them to persevere and to not give up.

Design Teaching, Thinking and Learning

Creative and critical thinking occurs in a meaningful way with a strong foundation built on knowledge and skills outlined in the Alberta Program of Studies. On top of this foundational learning, students use a design process to strive meaningfully and intentionally to develop creative solutions to unique problems in all subject areas. Teachers collaboratively create the conditions for student curiosity, creativity, leadership, and critical thinking.

Data to Inform and Drive Instruction

We ensure all students are supported to have a strong academic experience in ALL subject areas at our school. Teachers use best educational practices, including direct instruction through explanation and modelling, to ensure a rigorous and engaging program. Formal and informal assessments inform teachers, students, and parents about student progress and determine next steps in learning.

Industry Partnerships and Global Focus

STEM Innovation Academy is part of a local and global innovation ecosystem. Collaborative partnerships with post-secondary institutions and industry experts enrich and inspire powerful life-long learning for students and faculty. Through connections with internationally recognized STEM organizations, we ensure students develop an awareness of global challenges and solutions while acquiring the knowledge and skills necessary for future success.

Parents as Partners in Learning

Parents are the primary educators of their children and important stakeholders in their education. Through collaborative relationships and open communication, we work together with families to support success for all students.

Character, Community and Curiosity

Staff at STEM IA facilitate a positive social and emotional learning environment. Respect is an integral part of our culture. We honor the uniqueness of each individual and embrace diverse backgrounds, values, and points of view to build a strong, inclusive community. Members of our learning community treat each other with mutual respect, kindness and empathy. Students are inspired to be curious about each other and the world around them.

Introduction

STEM Innovation Academy opened its doors in August, 2021 as the 15th Charter School in Alberta. In our second year of operation, we serve over 440 students in grades 7-9 in our SW Calgary location. In September 2022, we expanded our program to high school beginning with 115 grade 10 students in a second location. We moved into the Alastair Ross Technology Centre in the heart of the University Innovation Quarter. Although we knew this was a temporary location due to space constraints, this location created exciting opportunities for students attending STEM IA to connect with industry and post-secondary institutions close by! In April 2023 we welcomed the announcement by government of the Calgary Charter School Hub. STEM IA will be the primary tenant of the Hub beginning in September 2023, anticipating a full high school enrolment of 1000 students within three years.

We embody a vision for education our province needs more than ever – one that inspires students to be technology creators and innovators, not just technology users. We are in the middle of a once-in-a-generation digital transformation, and Alberta students can be leaders in this global shift. We believe every student can be successful in STEM and should have the opportunity to learn about cutting edge science and technology topics.

Charter Goals

1. Students will graduate high school with superior STEM knowledge, skills, and competencies that provide a strong foundation for lifelong learning in a fast-paced global environment.
2. Students will have core STEM knowledge and skills needed to become global innovators and problem solvers.
3. Students will be community minded learners who demonstrate courage, resilience, respect, and caring for others.

Assurance Domains

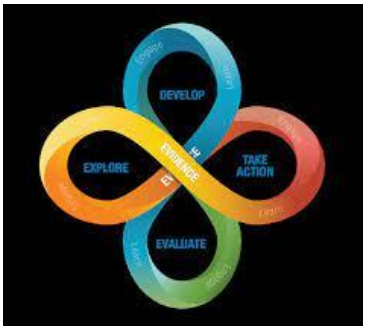
STEM Innovation Academy's 2023 – 2026 Education Plan outlines priorities in alignment with the Alberta Education Assurance Framework. As articulated in the Funding Manual,

"Assurance in the education system happens when community members, system stakeholders and education partners engage across five domains of Student Growth and Achievement; Teaching and Leading; Learning Supports; Governance; and Local and Societal Contexts" (p. 19, 20).

STEM Innovation Academy goals are integrated into the Assurance Domains section of this document. The outcomes identified are measured with local and provincial assessment tools.

Continuous Improvement Cycle

As articulated in the Funding Manual, "Successful work within and across the domains occurs within a continuous improvement cycle." (p. 22, 23). Key processes include:



- **Evidence-informed decision-making:** the gathering of evidence informs next steps.
- **Engagement:** education partners working together for the purposes of bringing about positive change.
- **Learning and Capacity Building:** Reflection on learning is critical. The opportunities for building capacity for change and improvement must be ongoing.

Highlights of our 2022-2023 Year

- Welcomed families into our school for the first time at our open house in May 2022 due to COVID restrictions. We have since hosted four additional open houses in advance of the 2023-2024 school year.

- Course development for junior high and all high school option courses.

- Announced our new high school location in May 2022 in the Alastair Ross Technology Centre. Renovations began immediately to accommodate our high school program, including Alberta's first MIT Fab Lab.

- Excellent results of grade 9 PAT exams.

- Two campuses in August 2022 serving a total 563 students (448 junior high, 115 grade 10)

- Unique off-site launch week for grade 10 students planned in partnership with U of C Engineering, Hunter Hub for Entrepreneurial Thinking, and Journey 2050.

- Celebrated the official opening of STEM Innovation Academy in our new high school on September 26, 2022. Opening was attended by Premier Kenney, Minister LaGrange, government officials, post secondary and industry experts.

- Hosted eight speakers for our Future Ready Speaker series at high school. This speaker series highlighted a cross section of industry experts and is intended to enhance students' understanding of what exists in industry.

- Renovations at junior high to modernize the facility and accommodate our physical education program (including creation of boys and girls change rooms).

- Launch of STEM IA Learning Journal, an online platform that captures our learning journey and connects us to community. To date we have 5,000 views, with 932 unique visitors from 10 countries.

- Sparkans Robotics – fifteen grade 10 students travelled to FIRST Robotics competition in Victoria and performed very well.

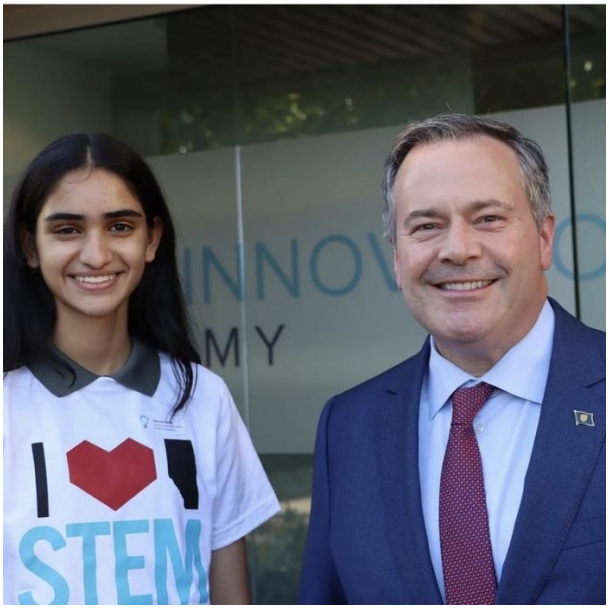
- Over ten Sparks athletic teams participated in the Calgary Independent Schools Athletic Association.

- Junior high students won the Calgary Youth Science Fair aggregate award for best junior high school including 7 gold, 4 silver, and 3 bronze.

- Successful grade 8 Architectural Technologies field trips through downtown Calgary.

- Announcement of Calgary Charter School Hub for high school. STEM IA will be the primary tenant in this ground-breaking, innovative new high school.

- Welcomed a new junior high principal in May 2023. This supports our founding principal moving to full time at our high school to lead our expanding program.



Stakeholder Engagement

Clear, transparent communication and stakeholder engagement is a priority for STEM Innovation Academy. Parent and stakeholder engagement and feedback is valued. This input and feedback is gathered to inform our education plan, our priorities and future planning. The following engagement activities occurred:

- Paul Davis (guest speaker) Social Networking Safety presentation to students and parents.
- Professional growth conversations occur twice each year.
- Fireside chats to ensure staff intent and feedback are known in the fall and the spring.
- Parent information sessions:
  - Open House for current and prospective junior high families – January 2023
  - Open House for current and prospective high school families - November 2022, February 2023, May 2023
- School Council meetings held monthly with all parents from junior high and high school welcome to attend.
- STEM IA Board of Director (parent) attends School Council meetings as well as TAAPCS Priority Committee representative.
- Weekly update to families from Principal and Classroom Teachers.
- Monthly standing faculty meetings occur each week (full faculty, curriculum, grade level).
- Regular meetings with Administration and school Learning Leaders.
- Open door policy – all concerns from students, parents, and teachers are addressed.
- STEM IA Board Technology Committee meetings with industry representatives.
- Administrative conversations with university professors (U of C, U of A) for high school course planning.

- Transportation Parent Engagement meeting February 2023 to strategize solutions to ongoing bus disruptions due to driver shortages.
- STEM IA parent, staff, and student surveys – Winter 2023
- Provincial surveys to 550 students, 40 staff, and all STEM IA parents – Spring 2023
- MRU, St. Mary's, U of L, U of C, Ambrose University engagement regarding pre-service teachers and new education graduates.
- TAAPCS Charter School Conference planning Spring 2023.
- Hosted six school districts interested in learning about our program.

Priorities 2023-2024

1. Expansion of high school program to include grade 11 (September 2023) and grade 12 (September 2024). This involves moving into our permanent home for high school in the new Calgary Charter School Hub. This will be our third move in three years and involves extensive renovations to an office building to support our trail-blazing STEM IA program.
2. Curriculum Development and Enhancement. Our Junior High and High School option programming is developed with industry expert consultation and collaboration to ensure our program is cutting edge and relevant to the future that lies ahead for our students. We will also be writing and piloting our own locally developed courses at the high school level. Our core program will focus on ensuring enhancement and enrichment in all areas. We will achieve this by developing a curriculum framework with additional staffing consultants.
3. Mental Health Pilot Program Grant. This is a two-year grant ending in February 2025 that will focus on supporting the mental health of students in STEM IA. In partnership with an external service provider, the program will focus on:
    a. Purchasing a mental health universal screening tool to be used as a baseline assessment.
    b. Professional learning for staff.
    c. Counselling for students. Focus will be on small group and classroom support.

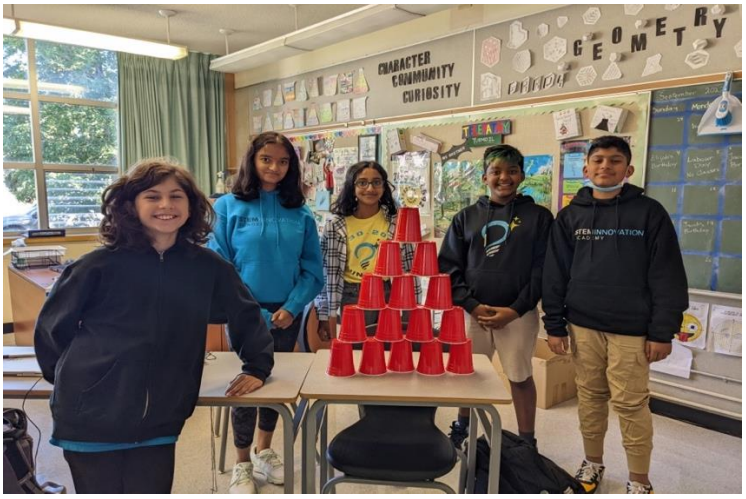
Provincial Domain: Student Growth & Achievement

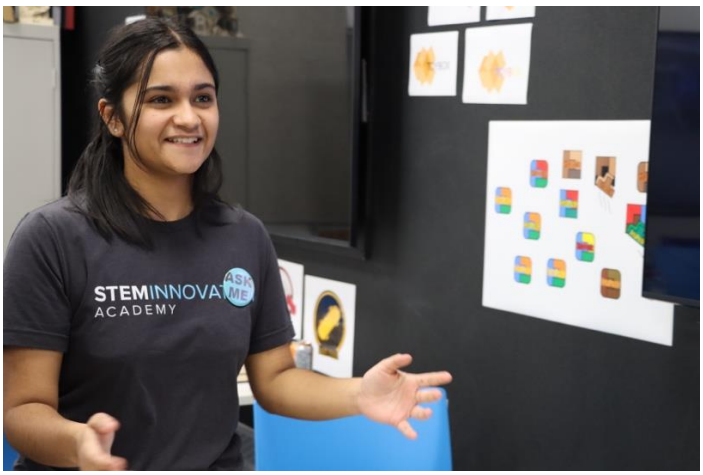
Outcome:	**Students will reach their highest academic potential demonstrating strengths in literacy, numeracy, and digital literacy.** **First Nations, Métis, and Inuit students are successful and have a sense of belonging.** **<u>Charter Goal</u>: Students will have core STEM knowledge and skills needed to become global innovators and problem solvers.**

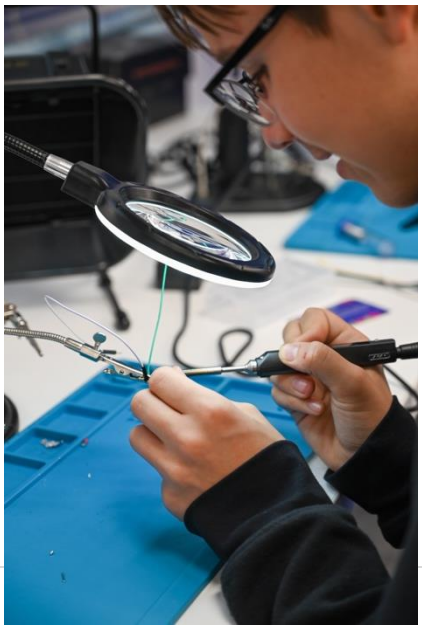
Strategies:	• School wide STEM knowledge and skill courses required for all new students
	• Baseline assessment administered to all students at beginning of school year
	  ○ MIPI (Math)
	  ○ Reading Diagnostic
	• Tracking of academic progress through mid and year end assessments in core areas
	• Responsive data driven programming based on identified student need
	• Teach and utilize the design process
	• Schoology used as a learning management system and open gradebooks
	• Competitions (STEM Fair/Calgary Youth Science Fair, Robotics, Math)
	• Imbedded technology applications in student learning
	• Integrate First Nations, Métis, and Inuit resources for all curriculums to be used by staff and students. Authentic resources are intended to develop an understanding of the contemporary and historical responsibilities related to Treaties, Residential schools, celebrations and contributions of First Nations, Métis and Inuit individuals and groups
	• Create unique and authentic learning opportunities to enhance Truth and Reconciliation with both staff and students

Measures & Evidence:

- Provincial Achievement Tests
- Midterm exams in Mathematics and Language Arts
- Final Summative Assessments (exams and projects)
- Access to emerging technologies, STEM tools and applications Guest speakers, industry expertise, leverage internal expertise to build staff capacity
- Student Showcases
- Assurance Survey results
- First Nations, Métis, and Inuit resources (such as novels, graphic novels, digital resources) are readily available for staff and student use.







Provincial Domain: Teaching & Leading

Outcome:	**Teachers and leaders will grow in their professional practice to ensure excellence in teaching and continuous improvement in student learning.**
Strategies:	• Creating Team Lead positions based on curriculum expertise • Regular Administrative and Leadership Team meetings • Provide instructional leadership to mentor teachers through growth, supervision, and evaluation of teaching staff • Structured Professional Learning Community (PLC) time ensuring collaboration toward consistent delivery and assessment of learning outcomes (grade level, curriculum focus) • Documenting and sharing exemplary teaching and learning publicly that allows our professional learning to become visible • School wide and individual professional development (local and international) • Development and implementation of unique option courses
Measures & Evidence:	• Provincial: Assurance survey results • School calendar that supports and prioritizes instructional design and leadership (professional learning days) • Timetable redesigned to include collaborative planning time • Data for certificated staff evaluations and professional growth plans • Staff feedback (survey, fireside chats) • Staff accessing professional development funds to improve their practice

Provincial Domain: Learning Supports

Outcome:	**STEM IA will create a culture that supports wellness for students and staff. STEM IA is a safe, caring, welcoming, respectful, and inclusive learning community.** **Charter Goal: Students will be community minded learners who demonstrate courage, resilience, respect, and caring for others.**

Strategies:	• Develop a Continuum of Supports
	• Develop an accelerated grade 9/10 Math program at junior high
	• Develop a Bio-Honours course and Math Honours course at high school
	• Interventions for students identified as 'at risk' on baseline assessment
	  ○ Support Staff
	  ○ Professional Development for teachers on mental health topics
	  ○ Feifer Assessment of Writing and Reading
	  ○ Key Math Assessment
	  ○ BASC-3 Level B Assessment
	  ○ Ignite Learning Interventions Option
	• Hub – classroom space dedicated to individualized and small group support
	• Counselling for small groups as identified through the mental health universal screener
	• Establishment and support of GSA

Measures & Evidence	• Development of our enriched core programming will be done in consultation and collaboration with curriculum and post-secondary experts • Specialized services and external partners • Provincial: Assurance survey results • Local: Mental health universal screener results • Parent and student survey results • GSA lunch meetings and attendance • Student involvement in clubs and athletics

Provincial Domain: Governance

Outcome:	**STEM Innovation Academy is well governed and well managed.**
Strategies:	• STEM IA Board will approve a budget that is aligned with school priorities • Development of Board Policies and School Administrative Procedures • Board workshop established to improve governance • Increasing Central Office personnel to support growth of program
Measures & Evidence	• Provincial: Assurance Survey results • Annual reporting (budget, education plan, capital plan) • School survey results • Policies and Administrative Procedures are reviewed on a regular basis

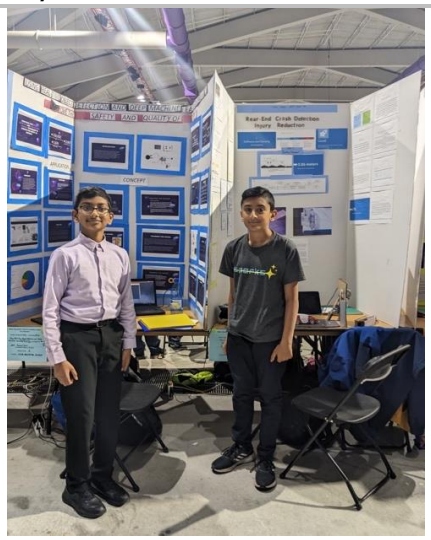
Provincial Domain: Local & Societal Context

STEM Innovation Academy is a meaningful and contributing member of Calgary's innovation ecosystem.

Outcome:	**Developing a network with students, parents, staff, and community members to inform our shared vision of being the premier learning community for the design and advancement of innovative Science, Technology, Engineering, and Mathematics education.**

Strategies:	• Critique and revision with experts in the field of study connected to our new high school option courses.
	  ○ Digital media (website, social media)
	  ○ School tours
	  ○ Volunteers
	  ○ Guest/keynote speakers
	  ○ Program partners
	• School Council participation

Measures & Evidence	• Frequency of engagements with post-secondary and industry experts • Co-designed courses with external industry experts • Quantitative and qualitative measures from social network tracking tool • Digital media analytics • School survey results



Budget 2023-2024

STEM Innovation Academy's approved budget for 2023-2024 may be accessed at Approved Budget Report 2023-2024 School Year.

Facility and Three-Year Capital Plan

STEM Innovation Academy's approved capital plan for 2023-2026 may be accessed at STEM Innovation Academy Facility and Three-year Capital Plan.