STEM INNOVATION ACADEMY

## STEM Innovation Academy Society

# Rolling Education Plan

# 2025-2028

## Accountability Statement

Under the direction of the Board of Directors, the Education Plan for STEM Innovation Academy Society was prepared under the direction of the Board of Directors in accordance with the responsibilities under the *Education Act* and the *Sustainable Fiscal Planning and Reporting Act*. This plan was developed in the context of the provincial government's business and fiscal plans. The Charter Board has 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 Charter Board reviewed and approved the 2025-2028 Education Plan on May 21, 2025. The original copy of the report has been signed.

Dee-Ann Evans
Board Chair

Joanne Higgins
Superintendent

## Message from the Board Chair

On behalf of the STEM Innovation Academy Board, I extend our heartfelt thanks to the students, staff, families, and education partners who continue to bring to life the STEM IA vision of being the premier learning community for the design and advancement of innovative Science, Technology, Engineering, and Mathematics education.

In the spring of 2025, we are excited to be celebrating our first STEM IA high school graduates, many of whom will pursue post-secondary studies in STEM-related fields.

In the fall of 2025, we will support 1600 students at three campuses, tripling our opening enrolment in just four years of operation. Our commitment to expanding opportunities for students to engage with STEM education is just beginning and with the three-year rolling education plan for 2025-2028, we will continue to innovative and expand in new ways.

At STEM IA, students are inspired to be curious, creative, and resilient. They engage in hands-on, future-focused learning — tackling real-world challenges in fields like AI, cybersecurity, robotics, and biotechnology. Our students continue to exceed provincial averages on PATs and diploma exams and benefit from powerful collaboration with MIT and local post-secondary institutions. Additional initiatives are underway to further expand this type of engagement with tech, post-secondary, parent, and government partners in education to ensure that our curriculum and courses are innovative, relevant, and help prepare STEM IA students to be future ready leaders.

STEM IA student success is grounded in a culture of instructional excellence. Our educators are supported through professional development aligned with our Model of Instruction, the High Reliability Schools framework, and evidence-based and data driven practices in teaching and learning. With a second junior high campus opening in fall of 2025, there will be a strong focus on professional development ensuring all our staff are well-prepared to support student success in our culture of excellence across all three campuses.

Our program remains deeply committed to student well-being. With extended SPARK time and dedicated student services teams, we nurture mental well-being, executive functioning, and social-emotional learning — ensuring students are supported to thrive in all aspects of their growth.

We are a stronger organization and community than we have ever been and look forward to continuing our growth, and program development.  Thank you for your continued support as we shape a bold, innovative future for students and inspire the next generation to be knowledgeable creators, innovators, and responsible leaders.

Dee-Ann Evans

Board Chair

## 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 fourth year of operation, we currently serve over 1150 students in grades 7-12. As a charter school, our students come to us from all corners of the city of Calgary and surrounding area. Our junior high campus is located in Southwest Calgary and serves students in grades 7-9. In September 2023, we moved into our permanent high school location at the Calgary Charter Hub, occupying the first two floors. This Northwest Calgary location is in the heart of the University Innovation Quarter and perfectly situated close to UCalgary. Our high school program currently supports students in grades 10 -12. In June 2025, we will celebrate with our first graduating class of over 100 students. Within two years, we anticipate a full high school enrolment of 1000 students.

We are very excited to open a second junior high campus in the Calgary Charter Hub in August 2025. Our new campus will occupy the third floor of the Hub and serve 300 students in grades 7-9. This location significantly helps our families living in northwest Calgary. Overall, STEM IA will represent 70% of the occupancy of the Charter Hub.

We have experienced tremendous growth in the past four years, with enrolment increasing 300% since 2021. In Fall 2025, we are projecting over 1600 students, which represents a 41% year-over-year increase from 2024. In our opening year 2021, STEM IA employed 25 staff members. Today, we employ 92 highly talented staff members, a staggering 268% increase! We are incredibly proud of our exceptional team and our collective efforts in pursuing our vision of being a STEM Centre of Excellence.

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

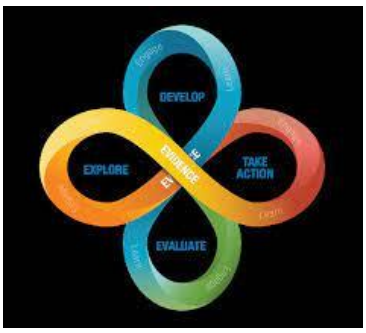
STEM Innovation Academy's 2025 – 2028 Education Plan outlines priorities in alignment with the Alberta Education Assurance Framework. As articulated in the Funding Manual,

"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" (pp. 28, 29).

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." (pp. 32, 33). 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 2024-2025 Year*

- Continued exponential growth with two campuses in August 2024 serving a total 1155 students (450 Gr. 7-12, 705 Gr. 10-12).

- First graduating class of STEM IA – June 2025. Hosted multiple Canadian post-secondary schools presenting information sessions for our graduating students.

- Continued focused professional development through Marzano's High Reliability Schools Framework including a focus on excellence of teaching and learning in every classroom implementing STEM IA's own Model of Instruction along with practices learned at the ResearchEd Science of Learning Conference, including retrieval practice, vocabulary instruction, and cognitive science strategies.

- Hired new administration and completed plans to open a second Junior High campus in NW Calgary in fall 2025. 305 students are registered to attend with hundreds more on the waitlist.

- Signed Memorandum of Understanding with Massachusetts Institute for Technology (MIT) and collaboration with UCalgary for new course development, mentorship, and post-secondary partnerships.

- Continued course development for junior high and high school option courses, including the addition of over six new options courses such as Artificial Intelligence, Space Science, and Mechatronics Engineering 35.

- Continued superior results of grade 9 PAT exams along with diploma exams written in January and June with outstanding results far exceeding provincial average in all subject areas.

- Hosted five open houses at our junior high and high school. Over 2500 interested students and their families attended these events. This illustrates the overwhelming interest and demand for our program.

- Students benefited from expert guest and Future ready speakers along with mentorships strengthening connections between classroom learning and real-world applications in industry and post-secondary.

- Daily SPARK time focusing on community, leadership, executive functioning, and social-emotional learning, fostering belonging and readiness to learn across the school.

- Sparkans Robotics – over 250 high school students participated in Robotics teams this year including an all-girls FRC team, participation in provincials and the VEX world competition as well as many awards won such as the all-star rookie award, design award, innovation award, and sustainability award. In addition, we hosted two major tournaments at the Charter Hub.

- Over fifteen Sparks & Sparkans athletic teams participated in the Calgary Independent Schools Athletic Association at the Jr. High and High School level winning banners in many sports and divisions.

- STEM IA Junior High and High School were well represented at many other competitions across Canada including the Calgary Youth Science Fair, Hack the House, Speech and Debate, Ivey Business Case Competition, Waterloo and other math contests, chess tournaments, Essay Writing, and Poetry in Voice.

- Several successful field trips to post-secondary and industry partners providing students with unique and real-world opportunities.

- Increased opportunities for women in STEM with participation in Girls Excel in Math (GEM), International Girls in ICT Day, all girls' robotics teams, and Technovation Girls club.

## *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:

- Professional growth conversations occur twice each year with teachers to ensure staff intent and feedback are known in the fall and the spring along with holding staff to standard of excellence.
- Monthly standing faculty meetings occur each week (full faculty, curriculum, grade/subject level) as well as regular meetings with school Team Leads.
- Parent information sessions:
  - Open House for current and prospective junior high families – October, November, and January.
  - Open House for current and prospective high school families - November 2024, January 2025.
  - Grade 9 Parent information session about high school in Alberta – October 2024.
  - Post-secondary information session for parents – Spring 2025.
- School Council meetings held monthly with all parents from junior high and high school welcome to attend.

- Weekly update to families from Principals and Junior High classroom teachers.
- Open door policy – all concerns from students, parents, and teachers are addressed.
- Administration and system conversations with university faculty (MIT, U of C, U of A) for high school course planning and pre-service teacher training.
- STEM IA and provincial surveys to students, staff, and all STEM IA parents – Spring 2025
- Attended university hiring fairs at St. Mary's University, University of Calgary, University of Alberta, University of Lethbridge, and University of Saskatchewan.
- Initial call to parents and community members to form Technology Advisory Committee.
- The school blog crossed 25,000 views from over 60 countries, showcasing STEMIA's growing global footprint and commitment to sharing learning experiences.

## *Priorities 2025-2026*

1. **Program expansion**

   A top priority for STEM IA is the successful opening of our third campus, the Northwest Junior High School, with a strong emphasis on creating a safe, caring, and welcoming environment for all students that meets STEM's culture of excellence. One of the key challenges is that most teachers joining the NW campus are new to the organization, which places increased focus on comprehensive onboarding, mentorship, and professional development to ensure they are well-prepared and supported. Additional priorities include furnishing the new facility, integrating ten diverse option classes into our programming, and coordinating a high-quality, off-site physical education program as there is no gymnasium built yet. We are also working to maintain strong continuity between the NW and SW campuses, ensuring a consistent educational experience for students. As we continue to grow, our goal is to expand further to meet the increasing demand for our innovative STEM programming and supportive learning environment.

2. **Memorandum of Understanding (MOU) with Massachusetts Institute of Technology (MIT) and pending post-secondary institution.**

   STEM IA and STEM Collegiate in Edmonton are proud to announce the signing of a MOU with the prestigious MIT – Beaver Works Summer Institute (BWSI). This groundbreaking MOU makes STEM IA and STEM Collegiate the only schools in Canada to offer exclusive high school courses developed by MIT's BWSI and adapted to Alberta's guidelines. Our high school students will have access to courses based on BWSI's rigorous, hands-on, project-based courses. These courses challenge students to tackle real-world problems in fields such as robotics, artificial intelligence, cybersecurity, and more.

   Collaboration with post-secondary intends to bridge the gap between secondary and post-secondary education to prepare our students to meet the challenges that can be faced by first-year students. This collaboration opportunity builds on existing relationships and may include course development that enhances STEM high school modules (physics, biology, and chemistry) and in emerging areas such as rapid prototyping using digital tools such as 3D printers and laser cutters, AI, quantum computing, and space science technologies.

3. **Bringing Our Model of Instruction to Life: Advancing HRS Implementation**

One of the key priorities for the STEM IA this next year is to continue advancing our work within Marzano's High Reliability Schools (HRS) Framework, with a targeted focus on deepening implementation of Levels 1 and 2. A major component of this work involves bringing our Model of Instruction (MOI) to life in meaningful and measurable ways. This includes populating each element of the model with templated resources, self-assessment measurement scales, and clearly defined evidence indicators for both students and teachers. These tools will support consistent, reflective practice and instructional alignment across classrooms. To ensure strategic and focused capacity building, all professional development for staff will be rooted in this framework, directly supporting instructional growth and alignment with our school-wide model.

In addition, we are developing a standardized template for teacher professional growth plans that will explicitly connect teacher goals to the MOI, ensuring coherence between individual development and STEM IA's priorities. Our observation, coaching, and evaluation processes will also be restructured to center on the instructional model, making it the foundation of how we assess and support teacher growth. To further embed a safe and collaborative school culture (Level 1) and ensure effective teaching in every classroom (Level 2), we will implement structured peer observations and leverage quick data tools to monitor leading and lagging indicators. These insights will help identify areas of strength and improvement, ensuring instruction at STEM IA not only remains strong but continues to evolve and improve.

## *Provincial Domain: Student Growth & Achievement*

| | |
|---|---|
| **Outcome:** | **Students will reach their highest academic potential demonstrating strengths in literacy, numeracy, and digital literacy.**<br><br>**First Nations, Métis, and Inuit students are successful and have a sense of belonging.**<br><br>**<u>Charter Goals</u>:**<br><br>• **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.**<br>• **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 entering Grade 7 and Grade 10.<br>• Baseline assessments in literacy and numeracy administered to all Grade 7-9 students to inform instruction.<br>• Blue-printed, common summative assessments to ensure direct alignment with curricular outcomes from Grades 7-12.<br>• Tracking and analysis of academic progress through mid year and course end assessments in core areas.<br>• Students engage with emerging technologies and advanced STEM concepts through their option courses, gaining hands-on experience and future-ready skills.<br>• Competitions and research field experience (STEM Fair/Calgary Youth Science Fair, Robotics (Vex and First), APEGA, Skills Canada, Math, Beakerhead, Interdisciplinary Science Competition, Bamfield field experience).<br>• Targeted enrichment in Science and Math from Grades 7–9, along with specialized high school Honors programs in Biology and Math, designed to deepen understanding and extend student learning. |

**Strategies:**

- Regular vertical and horizontal alignment of curricular outcomes and frameworks in all subject areas.
- Integration of an AI framework into courses to enhance students' digital literacy and foster responsible, future-ready technology use.
- Provide 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 and Diploma Exams.
- Assurance Survey results.
- Percentage of students earning an Alberta High School Diploma within the standard three-year completion timeframe.
- Students registered for post-secondary programs in Fall 2026.
- Common midterm exams in Junior High core areas.
- Common final summative assessments.
- Access to emerging technologies, STEM tools and applications.
- Guest speakers, industry expertise, leverage internal expertise to build staff capacity.
- Student Showcases.
- First Nations, Métis, and Inuit resources are readily available for staff and student use.
- Implementation of AI lessons and a high school AI course, supported by targeted professional development to promote critical thinking and responsible integration of AI technologies.

## *Provincial Domain: Teaching & Leading*

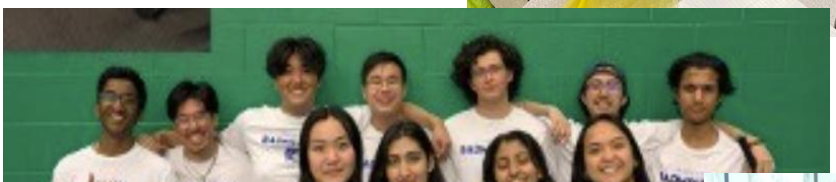
| | |
|---|---|
| **Outcome:** | **Teachers and leaders will grow in their professional practice to ensure excellence in teaching and continuous improvement in student learning.** |
| **Strategies:** | • Regular meetings with administration and team leads.<br>• Continued implementation of High Reliability Schools (Levels 1 & 2).<br>• Building a resource bank aligned with the Model of Instruction to support effective teaching.<br>• Aligning PD, growth plans, coaching, and evaluations with the Model of Instruction.<br>• Collaborating with Calgary Regional Consortium for PD support.<br>• Facilitating structured collaboration across campuses for instructional and assessment alignment.<br>• Formal mentorship and onboarding to support staff development.<br>• Leadership participation in HRS coaching and mentorship workshops.<br>• Diploma teachers involved in standard setting and exam marking.<br>• Piloting new Gr. 7–9 curriculum in Math and/or Social Studies.<br>• Participation at 2025 ResearchEd Conference to engage with current educational research. |
| | |

| | |
|---|---|
| **Measures & Evidence:** | • Provincial: Assurance Survey results.<br>• Administration participation in Calgary Charter School Leadership Network learning series and HRS workshops.<br>• Teachers regularly observe colleagues teaching providing feedback.<br>• School calendar that supports and prioritizes instructional design and leadership (Professional Development days).<br>• Staff evaluations and performance reviews. Alignment with professional growth plans.<br>• Staff feedback in survey and conversation reflects on professional growth over the year.<br>• Staff accessing professional development funds to improve their practice.<br>• Staff choose to remain at STEM IA. |

## *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.**<br><br>**Charter Goal: Students will be community minded learners who demonstrate courage, resilience, respect, and caring for others.** |
| **Strategies:** | • Student services teams at each campus to identify and support academic and mental-health needs for all students.<br>• Extended SPARK time at junior high focusing on interpersonal skills, executive functioning, social emotional learning, and community building.<br>• Regular Student-Learning-Team meetings with a focus on continuum of supports, academic success, and social-emotional well-being.<br>• Interventions for students identified as being at risk on baseline assessment at the beginning, mid-point, and end of year.<br>• Grade 9 transitioning to High School programming including information sessions, individual planning, and high school tours.<br>• Collaboration of high school and junior high student services team to successfully transition Grade 9 students.<br>• New Grade 7 welcome day in spring, launch week at all campuses in August.<br>• Student Services guidance team liaise with universities and support students in university choice, applications, and scholarships.<br>• Student Leadership promoting student belonging and community. |

| | |
|---|---|
| **Measures & Evidence** | • Development of our enriched core programming will be done in consultation and collaboration with curriculum and post-secondary experts.<br>• SOS-Q data is leveraged to identify and address students' social-emotional needs through targeted planning and support.<br>• Specialized services and external partners.<br>• Provincial: Assurance survey results.<br>• Parent and student survey results.<br>• Student involvement in clubs and athletics.<br>• Students registered for post-secondary programs in 2025. |



## *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.<br>• Review of Board Policies and School Administrative Procedures.<br>• Board Retreat established to facilitate Strategic Objectives to further develop and focus on the future in STEM IA growth and program.<br>• Increasing Central Office personnel to support growth of program.<br>• Realignment of School Council into separate councils for each campus. |
| **Measures & Evidence** | • Provincial: Assurance Survey results.<br>• Annual reporting (budget, education plan, capital plan).<br>• School survey results.<br>• Policies and Administrative Procedures are reviewed on a regular basis.<br>• Letter to Education Minister requesting Charter renewal/term. |

## *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:** | • Collaboration with industry and post-secondary experts connected to review and create new high school option courses.<br>  ○ Quantum Computing<br>  ○ Artificial Intelligence<br>  ○ MIT Beaverworks course material<br>• Guest/keynote speakers.<br>• Program partners.<br>• Students engaging in community outreach.<br>• School Council participation. |
| **Measures & Evidence** | • Frequency of engagements with post-secondary and industry experts.<br>• Newly formed tech committee focused on five key priorities with industry, post-secondary, and student representation.<br>• Memorandum of understanding with MIT and a post-secondary institution to be announced.<br>• Co-designed courses with external industry experts.<br>• Quantitative and qualitative measures from social network tracking tool.<br>• Visitors to our program including other educators and boards.<br>• Students actively share and teach their STEM learning to community members through a variety of events and outreach opportunities.<br>• Digital media analytics.<br>• School survey results. |

## *Budget 2025-2026*

STEM Innovation Academy's approved budget for 2025-2026 may be accessed at STEM Innovation Academy Approved Budget Report 2025-2026.

## *Facility and Three-Year Capital Plan*

STEM Innovation Academy's approved capital plan for 2026-2029 may be accessed at STEM Innovation Academy Facility and Three-Year Capital Plan 2026-2029.