

# STEM INNOVATION ACADEMY



**STEM Innovation Academy Charter School**

**Rolling Education Plan**

**2022-2025**

## Accountability Statement

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The Education Plan for STEM Innovation Academy for the 2022-2025 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 2022-2025 on May 17, 2022.



Carolyn Chin  
Board Chair



Joanne Higgins  
Superintendent

## Message from the Board Chair

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What started as a dream eight years ago has now become a reality with the opening of the STEM Innovation Academy (STEM IA) in September 2021 with our junior high location. We are honoured to be one of Alberta's newest public charter schools and with that honour comes high expectations on many levels. These expectations are reflected in STEM IA's Three-Year School Education Plan for 2022-2025. We look forward to the challenge of implementing this ambitious plan to ensure our students are inspired to learn, can meet success, and have the best opportunities to advance in the area of STEM — so they are ready for the future.

STEM IA's Board of Directors is committed to ensuring we meet our charter goals in the years to come by remaining true to our key foundations — Preparing Future Ready Leaders; Excellence in Teaching and Learning; Design Teaching, Thinking and Learning; Data to Inform and Drive Instruction; Industry Partnerships and Global Focus; Parents as Partners in Learning; and Character, Community and Curiosity. Our education plan is focused on relevant and meaningful strategies that are in alignment with the outcomes that are identified as part of the Alberta Education Assurance Framework. We will continue to refine the plan as the years unfold especially with the launch of a high school location in September 2022, and the intention to make

our courses accessible to all students and teachers no matter where they live in Alberta through virtual learning in the future.

We are extremely proud of all that has been achieved in our first year of operation and are grateful for our co-founders and incredible staff for their ongoing efforts, leadership and strive for excellence. We are also thankful for our partnerships with post-secondary institutions, leaders in the technology and engineering industries as well as the parents and students who share our vision of being the premier learning community for the design and advancement of innovative Science, Technology, Engineering, and Mathematics education.

Carolyn Chin, Board Chair

## *Our Mission*

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

## *Our Vision*

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

## *Key Foundations*

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### **Preparing Future Ready Leaders**

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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**

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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**

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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 meaningfully and intentionally strive 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**

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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**

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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**

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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**

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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

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STEM Innovation Academy opened its doors in August, 2021 as the 15<sup>th</sup> Charter School in Alberta. We currently serve over 400 students in grades 7-9 in our SW Calgary location. In September 2022, we will expand our program to high school (beginning with grade 10) in a second location. We are excited to move into the Alastair Ross Technology Centre in the heart of the University Innovation Quarter. This location creates exciting opportunities for students attending STEM IA to connect with industry and post-secondary institutions close by! 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

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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.

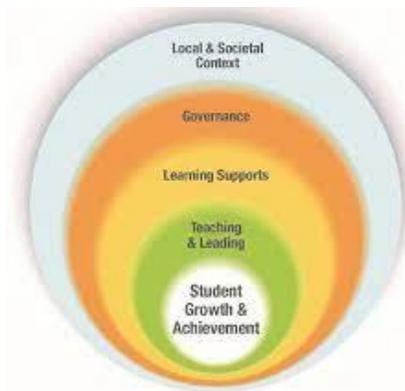
## Assurance Domains

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STEM Innovation Academy’s 2022 – 2025 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. 18).

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

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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 First Year

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-  Charter School opening announced January, 2021. By the end of January there were 1000 expressions of interest to our program.
-  Announced site location at St. Gerard's School in SW Calgary in May 2021. Keys to the school were turned over to STEM Innovation Academy on August 1, 2021. Renovations to the elementary school to support our STEM programming occurred prior to opening 29 days later.
-  School systems established – PASI, PowerSchool, Dossier, School Messenger, Schoology, Edwin, Gradebook.
-  Welcomed 27 staff members on August 23, 2021. Most important date – August 30, 2021 when we welcomed 409 students in grades 7-9 to our school. These students come from all areas of the city of Calgary.
-  Premier Jason Kenney and Minister of Education Adriana LaGrange toured STEM IA October 2021.
-  Basketball – Boys and Girls teams both won their CAAA league championship.
-  STEM Fair – 75 entries in 3 categories: Experimental, Innovation, Research. Winners in each category advanced to the Calgary Youth Science Fair competition. Twelve students received medals in the CYSF with one student receiving the Directors' Award!

## Stakeholder Engagement

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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:

- Virtual meeting with all faculty the last week of June 2021. In person, socially distanced full staff meeting held August 23, 2021. This was the first time our full team was together.
- 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 held virtually:
  - Open House for prospective families - May 2021
  - Opening day video sent to all families and posted on website - August 2021
  - Open House for current and prospective families - November 2021



- High School Information Sessions - April 2022
- School Council establishment and monthly meetings
  - School Council orientation and establishment meeting - October 2021
  - Principal monthly meeting with School Council Executive
  - Monthly council meetings with all parents invited
  - STEM IA Board of Director (parent) attends School Council meetings as well as TAAPCS Priority Committee representative
- Weekly update to families from Principal
- Weekly update to families from Classroom Teachers
- Weekly meetings with Superintendent and Administration
- 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
- Formation of Student Council including nomination and election of members
- Grade 9 girls participated in Lady Sparks – group conversation to share feedback regarding their experience at STEM IA and their hopes/aspirations for the future
- Administrative conversations with math university professors (U of C, U of A) to gain input for high school academic planning
- Virtual roundtable discussion with industry experts in technology fields – January 2022
- STEM IA parent, staff, and parent surveys – Winter 2022
- Provincial surveys to 400 students, 22 staff, and all STEM IA parents – Spring 2022

## Provincial Domain: Student Growth & Achievement

<b>Outcome:</b>	<p>Students will reach their highest academic potential demonstrating strengths in literacy, numeracy, and digital literacy.</p> <p><b>Charter Goal:</b> Students will have core STEM knowledge and skills needed to become global innovators and problem solvers.</p>
<b>Strategies:</b>	<ul style="list-style-type: none"><li>• School wide STEM knowledge and skill courses required for all new students</li><li>• Baseline assessment administered to all students at beginning of school year<ul style="list-style-type: none"><li>○ MIPI (Math)</li><li>○ Reading Diagnostic</li></ul></li><li>• Teach and utilize the design process</li><li>• Schoology used as a learning management system and open gradebooks</li><li>• Competitions (STEM Fair/Calgary Youth Science Fair, Robotics, Math)</li><li>• Imbedded technology applications in student learning</li></ul>
<b>Measures &amp; Evidence:</b>	<ul style="list-style-type: none"><li>• Provincial Achievement Tests</li><li>• Midterm exams in Mathematics and Language Arts</li><li>• Final Summative Assessments (exams and projects)</li><li>• Access to emerging technologies, STEM tools and applications</li><li>• Student Showcases</li><li>• Parent, Student, Staff school surveys</li></ul>



## Provincial Domain: First Nation, Métis, Inuit Student Growth and Achievement

<b>Outcome:</b>	<b>First Nations, Métis, and Inuit students are successful and have a sense of belonging.</b>
<b>Strategies:</b>	<ul style="list-style-type: none"><li>• Advance reconciliation by acquiring and applying foundational knowledge of First Nations, Métis, and Inuit. Develop a land acknowledgement to be used at all public meetings and gatherings demonstrating our commitment to advancing reconciliation.</li><li>• Purchase 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.</li></ul>
<b>Measures &amp; Evidence:</b>	<ul style="list-style-type: none"><li>• Assurance Survey results</li><li>• First Nations, Métis, and Inuit resources are readily available (library of resources available for staff and student use)</li></ul>



## Provincial Domain: Teaching & Leading

<b>Outcome:</b>	<b>Teachers and leaders will grow in their professional practice to ensure excellence in teaching and continuous improvement in student learning.</b>
<b>Strategies:</b>	<ul style="list-style-type: none"><li>• Creating Instructional Design Leadership position</li><li>• Regular Leadership Team meetings</li><li>• Provide instructional leadership to mentor teachers through growth, supervision and evaluation of teaching staff</li><li>• Collaboration toward consistent delivery and assessment of learning outcomes (grade level, curriculum focus)</li><li>• School wide and individual professional development</li><li>• Development and implementation of unique complementary courses</li></ul>
<b>Measures &amp; Evidence:</b>	<ul style="list-style-type: none"><li>• Provincial: Assurance survey results</li><li>• School calendar that supports and prioritizes instructional design and leadership (professional learning days)</li><li>• Timetable (collaborative design time)</li><li>• Data for certificated staff evaluations and professional growth plans</li><li>• Staff feedback (survey, fireside chats)</li></ul>



## Provincial Domain: Learning Supports

<p><b>Outcome:</b></p>	<p><b>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.</b></p> <p><b>Charter Goal: Students will be community minded learners who demonstrate courage, resilience, respect, and caring for others.</b></p>
<p><b>Strategies:</b></p>	<ul style="list-style-type: none"> <li>• Interventions for students identified as ‘at risk’ on baseline assessment             <ul style="list-style-type: none"> <li>○ Support staff</li> <li>○ Feifer Assessment of Writing</li> <li>○ Feifer Assessment of Reading</li> <li>○ Ignite Learning Interventions Course</li> </ul> </li> <li>• Hub – classroom space dedicated to individualized learning and emotional support</li> <li>• Stand Up and Spark time in timetable</li> <li>• Structured supports and services for students identified with exceptional needs</li> <li>• Facilitate school wide OH&amp;S training for staff through PublicSchoolWorks</li> <li>• Establishment and support of GSA</li> <li>• Clubs and athletics</li> </ul>
<p><b>Measures &amp; Evidence:</b></p>	<ul style="list-style-type: none"> <li>• Provincial: Assurance survey results</li> <li>• Student attendance</li> <li>• Parent and student survey results</li> <li>• Success Maker results showing student growth</li> <li>• OH&amp;S training schedule and module completion</li> <li>• GSA lunch meetings and attendance</li> <li>• Student involvement in clubs and athletics</li> </ul>


  
**SOME**
  
**KINDNESS**

## Provincial Domain: Governance

<b>Outcome:</b>	<b>STEM Innovation Academy is well governed and well managed.</b>
<b>Strategies:</b>	<ul style="list-style-type: none"> <li>• STEM IA Board will approve a budget that is aligned with school priorities.</li> <li>• Development of Board Policies and School Administrative Procedures.</li> <li>• Board workshop established to improve governance.</li> </ul>
<b>Measures &amp; Evidence:</b>	<ul style="list-style-type: none"> <li>• Provincial: Assurance Survey results</li> <li>• Annual reporting (budget, education plan, capital plan)</li> <li>• School survey results</li> <li>• Policies and Administrative Procedures are reviewed on a regular basis.</li> </ul>

## Provincial Domain: Local & Societal Context

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

<b>Outcome:</b>	<b>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.</b>
<b>Strategies:</b>	<ul style="list-style-type: none"> <li>• Hosting roundtable focus group consisting of post-secondary and industry experts to inform STEM programming</li> <li>• Tracking social (network)             <ul style="list-style-type: none"> <li>○ Digital media (website, social media)</li> <li>○ School tours</li> <li>○ Volunteers</li> <li>○ Guest/keynote speakers</li> <li>○ Program partners</li> </ul> </li> <li>• School Council participation</li> </ul>
<b>Measures &amp; Evidence:</b>	<ul style="list-style-type: none"> <li>• Frequency of engagements with post secondary and industry experts</li> <li>• Co-designed courses with external industry experts</li> <li>• Quantitative and qualitative measures from social network tracking tool</li> <li>• Digital media analytics</li> <li>• School survey results</li> </ul>



## ***Budget 2022-2023***

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STEM Innovation Academy's approved budget for 2022-2023 may be accessed at [Approved Budget Report 2022-2023 School Year](#).

## ***Facility and Three-Year Capital Plan***

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STEM Innovation Academy's approved capital plan for 2022-2025 may be accessed at [STEM Innovation Academy Facility and Three-Year Capital Plan](#).

