STEM Innovation Academy

Calgary, AB

Charter School Evaluation Report
March 2024

(updated July 2024)

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I. INTRODUCTION

Background

STEM Innovation Academy (STEM IA), a public charter school, commenced operations on August 30, 2021, accommodating 409 Grade 7-9 students at its Southwest Calgary Junior High location. Drawing students from diverse geographic areas in and around Calgary, the academy aimed to offer a specialized STEM-focused curriculum.

In September 2022, the academy expanded its offerings by introducing a high school program at the Alastair Ross Technology Centre, starting with Grade 10 students. This expansion sought to provide students with enhanced opportunities to engage with industry and post-secondary institutions in close proximity.

STEM IA is in the 3rd year of their current 5-year charter. The term of the current charter is from September 1, 2021, to August 31, 2026.

Student Enrolment

STEM IA enrolment in the past three years since their commencement:

School Year	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	Total
2021/22	190	133	86				409
2022/23	112	194	137	114			557
2023/24	138	139	194	239	128		838

Facilities

During the 2022/2023 school year, facility upgrades were executed to modernize amenities and support the implementation of a physical education program, which included the establishment of dedicated change rooms.

In September 2022, the academy expanded its offerings to include a high school program, commencing with 114 Grade 10 students at the Alastair Ross Technology Centre in the University Innovation Quarter. While recognized as a temporary location, this move provided students with unique opportunities to engage with nearby industry and post-secondary institutions. Subsequently, in April 2023, the academy welcomed the government's announcement regarding the Calgary Charter School Hub, where it became the primary tenant starting September 2023.

Staff

STEM IA employs 69 staff (with a total Full Time Equivalent of 64.45). Current F.T.E. (F.T.E. – Full Time Equivalent) as of March 20, 2024 (provided by STEM IA) is:

- Superintendent 0.6 F.T.E.
- Secretary-Treasurer 0.3 F.T.E.
- Administrators 4.0 F.T.E.
- Teaching Staff of 48.45 F.T.E.
- Educational Assistants 1.0 F.T.E.

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- Administrative Assistants 3.5 F.T.E.
- Lab Technician 1.0 F.T.E.
- Science Technician 0.5 F.T.E.
- Director of STEM 1.0 F.T.E.
- Director of Finance 1.0 F.T.E.
- Business/HR Office 3.0 F.T.E.
- Industry/Outreach Consultant 1.0 F.T.E.
- Custodian services are staffed through contracted services.

Vision

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

Mission

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

Key Foundations

1. Preparing Future Ready Leaders
2. Excellence in Teaching and Learning
3. Design Teaching, Thinking, and Learning
4. Data to Inform and Drive Instruction
5. Industry Partnerships and Global Focus
6. Parents as Partners in Learning
7. Character, Community, and Curiosity

Charter Goals

Goal 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.

Goal 2: Students will have core STEM knowledge and skills needed to become global innovators and problem solvers.

Outcome: Students will reach their highest academic potential, demonstrating strengths in literacy, numeracy, and digital literacy.

Goal 3: Students will be community-minded learners who demonstrate courage, resilience, respect, and caring for others.

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.

Terms of Reference

The *Charter Schools Regulation* requires that all charter schools in the province be evaluated at least once in the term of their charter. There are several purposes for the evaluation of a charter school:

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1. To provide evidence to the Minister and the board that the charter school is following provincial requirements and the requirements of the charter, inclusive of charter amendments, approved by the Minister.
2. To report to staff, parents, and the community on the success of the charter school and to identify areas of strength and areas that may require additional attention.
3. To focus the attention of the board and staff on the goals and objectives of the charter and the need to establish and confirm measurable outcomes and measures.
4. To facilitate continuous improvement in the charter school consistent with the assurance requirements of the Ministry and with the local direction established by the charter school community and authorized by the board of directors.

The criteria by which the charter school is evaluated are:

1. The charter authority meets the terms and conditions of its charter and has performance measures that show clear evidence of success.
2. The charter authority operates in a manner consistent with all applicable provincial requirements.
3. The charter authority is governed effectively.
4. The charter authority is administered effectively.
5. The charter authority is financially viable and responsible.
6. The students, parents, staff, school council, and community members consider the school program to be successful.
7. Student success is determined in accordance with Ministerial Order (#028/2020)
8. The charter authority shares its innovative practices and learning outcomes with others in the educational community.
9. Student achievement at the charter school is consistently strong or improving.
10. The charter authority is committed to engaging students, teachers, parents, and community members in a model of continuous improvement.
11. The charter authority reaches out beyond its walls to demonstrate broad and sustained levels of community engagement.
12. The charter authority uses research-informed practices to create innovative learning environments and improve student learning.

Evaluation Process

The findings of the evaluation were established using the following processes and activities:

1. The charter school was asked to develop and submit to Alberta Education a self-evaluation report based on the 12 criteria named above. (See Appendix – Page 15)
2. Alberta Education established a team of six individuals to review the self-evaluation report submitted by the school and to determine appropriate school site evaluation processes.
3. During the two-day on-site meeting process with the Alberta Education charter evaluation team, focus group sessions were established to provide opportunities for the board, superintendent, principal, teachers and staff, students, and parents to share insights about

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the school's successes and ideas about how the charter school might become even more effective.

- Four focus group sessions with students were conducted.
- Individual interviews were conducted with the superintendent, principal, and secretary-treasurer.
- Two focus group sessions with teachers were conducted.
- One focus group session with support staff was conducted.
- One focus group session with board members was conducted.
- One focus group session with parents was conducted. This group included representatives from the School Council.

4. Evaluation team members participated in classroom observations throughout grades 7-11 to assess instruction, student learning activities, and student engagement. While debriefing these classroom observations, individual impromptu conversations were held with teachers and support staff.

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II. EVALUATION CONCLUSIONS, COMMENDATIONS, RECOMMENDATIONS AND REQUIRED CHANGES:

1. The charter authority meets the terms and conditions of its charter and has performance measures that show clear evidence of success.

STEM IA meets the terms and requirements of its charter. The charter authority's goals are evident and highlighted in their Education Plan and their Annual Education Results Report.

STEM IA's charter is reflected in their submitted documentation (Education Plans, AERR, and Self-Evaluation) as well as the information gathered from the on-site observations of classrooms and interviews with all stakeholders (students, staff, parents, administration, superintendent, and the board).

The charter authority's vision and mission are articulated in the information provided on their website and were referenced during the on-site observations and interviews with stakeholders. The charter goals describe their areas of focus, and their desired outcomes align with the vision and mission statements. The charter authority offers unique programming in the Calgary area, including their Design Process approach to STEM education, STEM experiences through their MIT Fab Lab, as well as partnerships with industry and post-secondary institutions.

Recommendation:

- Charter Update: That STEM IA engage with stakeholders in accordance with the school's charter amendment process to review the school's charter and create a stand-alone charter document to confirm alignment with the 2022 Charter Schools Regulation prior to requesting a charter renewal in the 2025/26 school year. The charter amendment process may be an exercise on its own or may accompany the charter renewal request to be submitted prior to December 1, 2025. This charter document should be posted on the charter authority's website.
- The charter amendment process typically includes a review of:
  - the vision, purpose, charter goals, and foundational statements to ensure alignment throughout;
  - the way measurable outcomes are expressed for each charter goal; and
  - all other elements of the charter, ensuring that all requirements in Section 4 of the regulation are addressed and align with the school's vision and purpose.

2. The charter authority operates in a manner consistent with all applicable provincial requirements.

STEM IA meets the provincial requirements of the Charter Schools Regulation (Alberta Regulation 85/2019) and the *Education Act*. The charter authority follows the Alberta Programs of Study and provides access to the required amount of instructional time. Regular monitoring of the school by Alberta Education staff confirms its coherence with Ministry expectations, as outlined in the *Education Act*, the Funding Manual and Assurance Framework.

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The authority complies with Alberta Education planning, reporting, and funding requirements in providing timely information. There is evidence of stakeholder engagement. Opportunities for parental involvement, including through an active parent council, were referenced by stakeholders.

The charter authority has demonstrated a willingness to incorporate the First Nations, Metis, and Inuit teaching, learning, and perspectives authentically into the curriculum and instruction in their schools.

Recommendation:

- Continue to develop and seek opportunities for community engagement with First Nations, Metis, and Inuit communities and organizations (local elders and knowledge keepers who have lived experience) that can increase staff knowledge of history, traditions, and protocols that can be incorporated into school programming.

3. The charter authority is governed effectively.

The board has a clear vision and mission relative to STEM education. To achieve their mission and vision, the board has established partnerships across the industry to support the administration with the connections to, and alignment with, the industry.

The board has established meetings on a monthly basis. They communicate regularly with the superintendent to maintain ongoing communication between the board and the school staff. They regularly review all policies to ensure they are meeting legislative requirements.

The board is actively engaged in analyzing data to measure the effectiveness of their initiatives. One example is the provincial PAT results, which exceeded provincial averages in all areas. The board also completed an analysis of their charter goals/outcomes, as well as encouraged feedback from stakeholders to focus on continuous improvement. For example, the board hosted a parent engagement survey to obtain feedback on transportation challenges and to discuss solutions.

4. The charter authority is administered effectively.

The administration demonstrates a strong commitment to ensuring effective operational procedures and practices are followed to meet their charter commitments. The principals and vice-principals of both the junior high and the high school programs model a team approach that supports all staff members in leading the vision of the school.

Using a collaborative approach, the administration is focused on meeting the unique needs of their STEM learners. A mutually respectful and dynamic working relationship between the administration and students, staff, and parents was observed throughout the on-site observations and meetings by the Alberta Education Charter Evaluation Team.

Stakeholders referenced the school's safe and caring environment, particularly the students, who shared that teachers are approachable and prioritize student voices. Throughout the on-site charter evaluation process, many stakeholders expressed how valued they feel as part of this learning community.

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Commendations:

- Stakeholders, including both parents and students, expressed confidence and respect for the superintendent and administration team, as well as the support received from teachers and support staff.
- The STEM programming focus has created a very dynamic learning environment that focuses on student voice and choice.

5. The charter authority is fiscally viable and responsible. (updated July 2024)

Through a review of their financial reporting and on-site meetings, STEM IA has developed a plan to become fiscally viable by the end of their five-year charter term. STEM IA incorporated on November 25, 2020, and their first year of operations was during the 2020/21 school year. STEM IA was in an accumulated deficit from operations (ADO) in the first two years of operation due to start-up costs incurred at inception, which will not be regularly occurring year over year and allow for a balanced budget as they continue to operate.

STEM IA projected an ADO of ($33,198) for the 2023/24 school year in their 2023/24 Budget Report. However, after reviewing the 2022/23 Audited Financial Statement (AFS) submitted in November 2023, Alberta Education and STEM IA agreed that $246,813 should have been reclassified from “Investment in Tangible Capital Assets” to “Unrestricted Surplus”. STEM IA can make a prior year adjustment to their 2022/23 AFS to reflect this change and a $177,382 surplus for 2022/23. Or they can make an in-year adjustment for the 2023/24 AFS and a projected surplus of $213,615 for 2023/24. STEM IA has not indicated what approach they are going to take to recognize this adjustment.

The administration expressed the strong working relationships of the administration and operational staff as vital to the success of this charter school’s operations. As a new charter authority, STEM IA has been agile in responding to environmental demands on their operations. Going forward, it is recommended that STEM IA put in place policies and procedures that will create consistency in the approach for operations. As STEM IA’s growth goals are realized, it will become more important to manage adversity and competing priorities throughout their operation and with their board of directors.

School-generated funds are a common practice for all types of schools in Alberta and, when managed effectively, can also be a practical way to enhance student learning experiences. Other financial pressures indicated by the charter include insurance, professional development, and inflationary pressures. STEM IA is cognizant of the different fiscal pressures affecting their finances and has forwarded a plan on how they will manage their finances to the Financial Reporting and Accountability Branch to mitigate their deficit in the upcoming school years.

In the 2023/24 school year, STEM IA has adjusted its certificated staffing Full-Time Equivalent accordingly to keep a consistent ratio of students to certificated staff through this growth. As per their AFS, they do not have any funding sources other than Alberta Education. While the vast majority of the funding is provided by the Ministry of Education in all public schools, it is still common practice for schools to have alternative revenue streams to help them meet extraneous financial goals. A recommendation is to not disregard other sources of funds that can help them meet their financial goals.

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STEM IA's Budget Surplus (Deficit) Summary

	2020-21	2021-22	2022-23	2023-24 (Projected)
Actual Expenses	$649,730	$4,466,557	$8,559,644	Not available
Budgeted Expenses	Not available	$4,451,866	$6,157,944	Not available
Accumulated Surplus (Deficit) From Operations (total unrestricted surplus + total operating reserves – the school generated funds)	(293,734)	(523,383)	(69,431)	(33,198)*

*Note – the projected 2023/24 deficit does not reflect an adjustment that was agreed to by Alberta Education and STEM IA after the 2022/23 Audit Financial Statement was submitted. $246,813 should have been reclassified from "Investment in Tangible Capital Assets" to "Unrestricted Surplus". Assuming STEM IA makes an in-year adjustment when they submit their 2023/24 AFS in November, the initial 2023/24 projected deficit of $33,198 will become a projected surplus of $213,615.

Recommendations:

- Continue to work closely with Alberta Education to address facility planning, start-up funding, and desired expansion.
- Explore the possibility of alternative revenue streams to bolster their financial position to minimize the effect of environmental factors on their financial position.
- Create a clear set of guidelines for board policies and administrative procedures to manage the administration and the board through their aggressive growth phase and ensure stable continuity of operations.

6. The students, parents, staff, school council(s), and community members consider the school to be successful.

Students, parents, and staff at STEM IA see the school as successful, and stakeholders report high satisfaction. Conversations with stakeholder groups reveal evidence of support for the mission and vision of STEM IA. Many examples were shared of students finding success where they had struggled in other school settings.

Fall 2023 Provincial survey results show that parents, teachers, and students feel that the school is successful and improving. The school has achieved results above provincial averages in education quality (94.1), citizenship (84.7), and parental involvement (88.7).

Students spoke highly of supportive relationships with teachers who helped them to be successful not only with their learning but also with concerns outside of school. Thanks to the support they received from their teachers, students felt confident about not only the transition from junior high to high school classes but also their eventual transition to post-secondary education. Students often described the school as having a family-like atmosphere where they felt safe and ready to learn. An

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example of this sentiment were junior high students who shared that they take a bus (up to 2 hours each way) but felt that the trip was worth the education they receive at STEM IA.

STEM IA views parents as partners in learning, and there are many opportunities for parent voices to be heard in the school. Parents indicated that teachers take an interest in each student and that their children want to come to school. The parent council echoed similar sentiments, such as “We are all on the same team for our kids.”

Commendations:

- Students shared that they feel connected to the school and school community and are passionate about the school.
- Staff spoke about the strong collaboration between staff members from both sites with a focus on incorporating STEM principles throughout the curriculum.

7. Student success is determined in accordance with Ministerial Order (#028/2020).

STEM IA has embraced the foundation of the Ministerial Order with their focus on science, technology, engineering, and mathematics (STEM). The commitment of the school to this Ministerial Order is also evident in their approach to professional learning and development by teachers and the administration and through their efforts and success in engaging stakeholders.

Subject area teams analyze PAT results in the fall to identify areas of strength, growth, and their impact on teaching and learning. Notably, STEM achieved a PAT Acceptable rate of 92.3% and a PAT Excellence rate of 42.0%. This surpasses the Alberta averages of 63.3% Acceptable and 16.0% Excellence. Fall 2023 AEAM results demonstrate that all eight applicable measures exceeded the provincial average and showed improvement compared to the previous year.

Through the specialized STEM curriculum, students are encouraged to develop their unique interests with a focus on hands-on learning. A strong emphasis on entrepreneurship is evident in daily programming in addition to industry partnerships and a real-world focus on ever-changing technology.

STEM IA uses surveys to gather data from their stakeholders on student success at school. Student surveys are administered at the end of each course for the purpose of collecting feedback from students regarding aspects of the course they value, as well as suggestions for improving the course in future years.

Commendation:

- STEM IA’s charter focus and industry partnerships allow innovation to be a constant focus and keep their programming and technology up to date with the latest innovations.

8. The charter authority shares its innovative practices and learning outcomes with the education community.

STEM IA has established partnerships with the University of Calgary, SAIT, and Mount Royal University. These partnerships allow STEM IA’s course development to align with both post-secondary and industry STEM requirements. They have also liaised with other charter school authorities to share best practices as well as have hosted school authorities from across Alberta and Saskatchewan.

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Over the past few years, STEM IA has participated in various activities to share innovation with their education community: the creation of an online STEM IA Journal, presentations at TAAPCS conferences, and hosting a regional VEX robotics competition.

The STEM IA in Alberta houses Alberta's first MIT Fab Lab. Derived from a program developed by the Massachusetts Institute of Technology, these Fab Labs function as digital fabrication workshops. Equipped with advanced machinery such as 3D printers and laser cutters, the facility allows students to transform their ideas into physical prototypes. The STEM IA's Fab Lab integrates with a global network exceeding 1,750 labs in over 100 countries. This fosters collaboration on projects between students and their peers from around the world, promoting a global perspective on innovation and problem-solving approaches.

Recommendations:

- Seek additional opportunities to engage with local public school authorities, First Nations, and other school divisions to continue to work towards enhancing education research and innovation in Alberta.

9. Student achievement is consistently strong or improving.

Students, staff, and parents often spoke about the positive atmosphere and strong sense of community at STEM IA, which has the potential to impact achievement. The board is taking a more focused look at improving data collection to better support the school in tracking the achievement of its charter goals. Alongside this, there is a concerted effort to support student success through the transition to post-secondary studies, ensuring their continued success and alignment with the school's mission.

Students shared that there were many opportunities to discuss their progress at school and appreciated conversations with teachers about how they can improve marks posted on PowerSchool. Students appreciated the problem-solving approach used at the school and the opportunities to work together with like-minded classmates.

A review of the fall 2023 data shows that STEM IA's achievement results exceeded provincial averages. Provincial Achievement Test data shows higher test averages in all subject areas in comparison to the provincial rate for the past two years.

Recommendation:

- Continue to further develop local measures to provide additional evidence of growth and improvement toward Charter goals.

10. The charter authority exhibits, in multiple ways, an ongoing commitment to engaging students, teachers, parents, and community members in a model of continuous improvement.

STEM IA continues to strengthen the engagement of students, teachers, parents, and community members. The communication processes that have been instituted thus far have been well received and appreciated. Stakeholders reported feeling informed, included, and respected.

STEM IA stakeholders expressed a high level of confidence in the school to provide a high-quality education for students. Staff and parents are familiar with the charter goals, particularly those related to the focus on STEM knowledge, skills, and competencies. Staff are committed to the STEM IA Design Process (Identify Problem, Research, Brainstorm, Design, Build, Test & Evaluate,

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Share Solution, and Redesign). Staff spoke passionately of their work in helping support student learning. Parents and students also voiced strong support for the commitment of staff towards helping students achieve high levels of success. Teachers spoke of their high level of appreciation for the support and mentoring by their peers and school administration to help them improve their teaching practices and abilities.

The parents were most supportive of the weekly email communication from teachers and frequent communication from the school administration. The parents indicated that events and activities were opportunities to be involved in and learn about their child's education. Parents felt well informed and involved in their children's education and stated that they felt if they ever needed to ask a question or discuss something, school staff were available to assist and respond to them in a timely and helpful manner.

The board is cognizant of their role in supporting staff and student learning. They expressed a high level of commitment to making students in the school as successful as possible and providing opportunities for students to pursue their passion for STEM-related learning and work. Staff expressed an appreciation for the support and work of the superintendent and the board.

Recommendation:

- Explore the possibility of offering a more diverse range of options to students. STEM IA has been clear in communications with prospective students about the STEM focus of options offered (as reported by students); nevertheless, students expressed a desire for a more diverse range of options.

11. The charter authority works collaboratively with stakeholders and demonstrates broad and sustained levels of community engagement.

Engagement and communication with stakeholders have been a focus for STEM IA since they opened. Stakeholders (staff, parents, and students) all spoke highly of the frequent and effective communication practices and tools in use. Each of the three stakeholder groups conveyed their gratitude for the opportunities for communication and involvement in the school, expressing that they felt "respected and heard."

Staff spoke very highly of the collaborative culture of STEM IA, where they reported feeling valued and strongly supported by peers, parents, and administration. Parents repeatedly stated they felt valued and included in their child's education, with opportunities to both receive and share information and perspectives at the school, through events, and through the school council. STEM IA provides students with opportunities to participate in clubs, teams, and activities. Students spoke about the rigorous academic program and the opportunity to develop skills for life by providing feedback to make their school even better.

STEM IA has been building relationships with post-secondary institutions and industry experts as well as internationally recognized STEM organizations.

12. The charter authority uses research-informed practices to create innovative learning environments and improve student learning.

The superintendent spoke of the utilization of Marzano's High-Reliability Schools framework and the positive effect that it is having on shaping the school learning culture. This framework contains five progressive levels, and the work of STEM IA in levels 1 and 2 (Safe, Caring, Collaborative Culture, and Effective Teaching in Every Classroom) is evident through the comments of staff,

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students, and parents. Students are engaged in their learning. The (early) strong academic performance shown by STEM IA on provincial assessments suggests that the level of instruction and learning is effective.

STEM IA is demonstrating a commitment to enriching learning environments and continuing to inform teaching practices and learning through research. Teachers spoke very highly of the peer and administrative support they receive as they develop their practice and skills. Teachers expressed a deep appreciation for the high level of engagement and team approach utilized within the school. They felt supported and valued. They also indicated that they had the opportunity to initiate new projects with students.

Staff spoke of the partnerships they were beginning to form with industry and post-secondary institutions and the benefits they were already seeing for student learning and engagement. Staff expressed a strong desire to ensure their topics and curriculum were “cutting edge” as related to STEM industry.

Recommendations:

- Continue to explore and expand opportunities for students to be involved in STEM-related activities with other school authorities, post-secondary education, and industry.

Conclusion

As a result of our evaluation processes, the Alberta Education Evaluation Team is satisfied that the STEM IA is meeting the requirements of legislation and regulations for charter schools. There is some variance in the degree to which the evaluation criteria are met. This variance is reflected in the commendations and recommendations identified in the body of this report. As STEM IA moves forward in its endeavour to provide the best possible education for students, it is encouraged to celebrate its successes while implementing the recommendations and directions provided by the Alberta Education Evaluation team.

The Alberta Education Evaluation Team extends its sincere thanks to the board, administration, staff, students, and parents for their time, perspectives, insights, and hospitality.

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APPENDIX

STEM Innovation Academy's Self-Evaluation

January 2024

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STEM INNOVATION ACADEMY

STEM Innovation Academy

Self-Evaluation Report

Submission to Alberta Education in

Compliance with Charter Schools Regulation

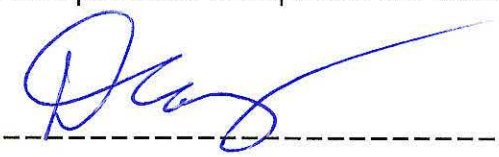
January 2024

Accountability Statement

The STEM Innovation Academy self-evaluation was prepared under the direction of the Charter Board in accordance with the responsibilities under the *Education Act*, the *Fiscal Planning and Transparency Act,* and the *Charter Schools Regulation*. This report was developed in the context of the provincial government's business and fiscal plans.

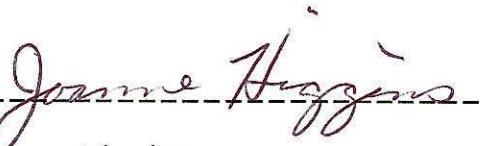
The STEM Innovation Academy Board of Directors, in consultation with the Superintendent and multiple educational stakeholders used past and current sources of school data to inform and compose this self-evaluation including the STEM Innovation Academy Charter Application (October 2020), STEM Innovation Academy Three Year Rolling Education Plan, and Annual Education Results Reports.

This report was completed on: January 10, 2024.



Dee-Ann Radford Evans, Chair

STEM Innovation Academy Board of Directors



Joanne Higgins

Superintendent

1. Charter Conditions: *The school meets the terms and conditions of its charter and has performance measures that show clear evidence of success.*

STEM Innovation Academy currently meets the terms and conditions of its charter and has exemplary performance measures that show clear evidence of success. In addition to our Charter goals, STEM Innovation Academy is guided by our shared vision, mission, and key foundations.

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.

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

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

Key Foundations:

1. Preparing Future Ready Leaders
2. Excellence in Teaching and Learning
3. Design Teaching, Thinking and Learning
4. Data to Inform and Drive Instruction
5. Industry Partnerships and Global Focus
6. Parents as Partners in Learning
7. Character, Community and Curiosity

STEM Innovation Academy opened its doors in August 2021 as the 15th Charter School in Alberta. We do not have an entrance requirement other than a passion for STEM and/or a desire to learn more about STEM. We currently accept students from all geographic areas both in the city of Calgary and surrounding areas. We currently serve 472 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.

At this time, 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. As of September 2023, STEM IA High School is the primary tenant of the Hub with an enrollment of 370 students in grades 10 & 11. We anticipate a full high school enrolment of 1000 students within three years.

Required Alberta Education Assurance Measures - Overall Summary
Fall 2023

Authority: 0370 STEM Innovation Academy Society

Assurance Domain	Measure	STEM Innovation Academy Societ			Alberta			Measure Evaluation		
		Current Result	Prev Year Result	Prev 3 Year Average	Current Result	Prev Year Result	Prev 3 Year Average	Achievement	Improvement	Overall
Student Growth and Achievement	Student Learning Engagement	91.2	90.0	90.0	84.4	85.1	85.1	n/a	Maintained	n/a
	Citizenship	84.7	83.4	83.4	80.3	81.4	82.3	Very High	Maintained	Excellent
	3-year High School Completion	n/a	n/a	n/a	80.7	83.2	82.3	n/a	n/a	n/a
	5-year High School Completion	n/a	n/a	n/a	88.6	87.1	86.2	n/a	n/a	n/a
	PAT: Acceptable	92.3	91.3	n/a	63.3	64.3	n/a	Very High	n/a	n/a
	PAT: Excellence	42.0	33.6	n/a	16.0	17.7	n/a	Very High	n/a	n/a
	Diploma: Acceptable	n/a	n/a	n/a	80.3	75.2	n/a	n/a	n/a	n/a
	Diploma: Excellence	n/a	n/a	n/a	21.2	18.2	n/a	n/a	n/a	n/a
Teaching & Leading	Education Quality	94.1	92.9	92.9	88.1	89.0	89.7	Very High	Maintained	Excellent
Learning Supports	Welcoming, Caring, Respectful and Safe Learning Environments (WCRSLE)	89.2	88.2	88.2	84.7	86.1	86.1	n/a	Maintained	n/a
	Access to Supports and Services	83.9	80.4	80.4	80.6	81.6	81.6	n/a	Improved	n/a
Governance	Parental Involvement	88.7	85.8	85.8	79.1	78.8	80.3	Very High	Maintained	Excellent

In the eight measures reported above, STEM IA exceeds the provincial average on all measures and has shown improvement in all measures over last year.

2. Provincial Requirements: *The authority operates in a manner consistent with all applicable provincial requirements.*

STEM Innovation Academy operates in a manner consistent with all provincial requirements as outlined in the *Education Act*, the *Guide to Education*, the *Funding Manual for School Authorities, and* the *School Capital Manual*.

In accordance with provincial requirements, our Three-Year Education Plan, our Annual Education Results Report (full report and summary report), and our Capital Plan are all posted on our STEM Innovation Academy website: https://steminnovationacademy.com/about-us/documents-and-publications/.

3. Governance: *The charter authority is governed effectively.*

The Board of STEM Innovation Academy functions as the governing Board of the school. The Board provides overall direction and leadership for the school. Policies have been developed to highlight and support the very important governance function of the Board.

The Board is responsible for:

1. Ensuring that the practices of the school and the Board are consistent with applicable legislation, the Charter, Board policies, and contractual obligations.
2. Developing policies.
3. Developing bylaws of STEM Innovation Academy Society.
4. Appointing and evaluating a Superintendent as the Chief Education Officer of the School.
5. Appointing a Secretary Treasurer as the Chief Financial Officer of the School.
6. Directing and monitoring the finances of the school, including approving the annual budget and audited financial statements.
7. Evaluating the levels of satisfaction held by students, parents, and staff.
8. Establishing Board committees.

The STEM IA Board meets regularly on a monthly basis, with a schedule of meetings established at the beginning of the school year. Agendas are determined by the Board Chair in consultation with the Superintendent and Chief Operating Officer. All agendas and minutes are posted on the STEM IA website. As our program continues to evolve, the Board regularly receives presentations from administration and teachers on various aspects of the school.

The Board has a solid understanding of their governance role. Our Bylaws and Terms of Reference can be found at https://steminnovationacademy.com/about-us/governance/.

4. Administration: *The charter authority is administered effectively.*

The STEM Innovation Academy administration team is highly effective and highly skilled in their leadership of all aspects of our program. Our senior leadership team is comprised of our Superintendent, our Chief Operating Officer, and our two school-based Principals. This team meets regularly to ensure our strategic planning is aligned with our vision and mission.

Our school-based administrative team has evolved with our rapid growth the past three years. We have grown from a single principal who was hired four months prior to opening in August 2021 to two highly talented teams of a Principal and Assistant Principal at each of our campuses.

As a new authority, it cannot be minimized how daunting the task was to establish our systems and structures in our beginning years. Administration has worked tirelessly to ensure these operational pieces are all in place, including: our Administrative Procedures, PowerSchool, Schoology, School Messenger, School Engage, Microsoft 365, GradeCam, and Dossier.

Given we were all new to our positions beginning in 2021, networking and professional learning has been critical. Our Superintendent is a regulated member of CASS and regularly attends the annual CASS conferences and participates in the Calgary Superintendent Network. Our school-based administration participates in the Calgary Charter Leadership Network.

5. Fiscally Viable: *The charter authority is fiscally viable and responsible.*

STEM Innovation Academy is fiscally viable and responsible.

Evidence:

- STEMIA has undergone two cycles of audited financial statements where the results have been a clean and unmodified opinion by MNP LLP, Independent External Auditor to STEMIA;
    - MNP LLP's Management Letter for August 31, 2022 and August 31, 2023 report no internal control deficiencies; and
    - MNP LLP's Audit Findings Report for August 31, 2022 and August 31, 2023 report no deficiencies or significant matters to report.
    - Link to Audited Financial Statements

- As of August 31, 2023, per FY23' AFS, STEMIA has:
    - Cash and cash equivalents: $684,610; and
    - Net assets: $177,382

- STEMIA has a properly staffed finance and accounting team as follows:
    - Secretary-Treasurer | L. Davis
        - Seasoned real estate and executive.
    - Director of Finance | J. Liu
        - CPA, CA with 10+ years as a school business official.
    - Finance Specialist | S. Goerzen
        - 10+ years in school finance.
    - Finance Specialist | L. Krawchuk
        - 10+ years of accounting experience

- STEMIA complies with all financial reporting requirements (i.e. Alberta Education, Canada Revenue Agency, etc.).

6. Successful: *The students, parents, staff, school council and community members consider the school program to be successful.*

The biggest indicator of our success is the interest in our junior high and high school as evidenced by our waitlists. When our Charter was announced in January 2021, there were 1000 expressions of interest registered on our website by the end of January. In our first two years of operation, we have unfortunately had to turn away over 1500 applicants to our program due to lack of facility space. Currently we have more than 1800 students who have applied to our program that we do not have space for.

STEM IA stakeholders share very positive feedback on the success of our program as evidenced by provincial and local surveys.

- The percentage of parents who agree that the literacy skills (96%) and numeracy skills (96%) their child is learning are useful.
- Parent and Student satisfaction with the opportunities to learn about technology at school (99%).
- Parent satisfaction with the quality of education at STEM IA (98%).
- Percentage of parents who rate their child enjoys coming to STEM IA each day (96%).

"When you have a staff and group of students who are all excited to be there, along with practical and interesting programming with super advanced tech how could you not be creating an amazing place to learn?"

"I have been lucky in that I have had one course with each teacher this year, so I have gotten to know them all. I trust and feel entirely comfortable with all teachers and staff members with no exceptions. Every teacher has inspired me in some way and has allowed for me to learn in my own way. Every single staff member has been not just good to me, but great."

"Collaborating with colleagues, professional development, connecting with students, recognizing when students may need additional/personalized support, and learning from colleagues about a plethora of different possible practices have all supported my growth as a teacher."

7. Student Success: *Student success is determined in accordance with Ministerial Order (#028/2020)*

The Ministerial Order describes a clear path for educators and other stakeholders leading all students to become successful life-long learners and citizens upon completion of their formal educational journey in Alberta. This aligns directly with STEM IA's mission of inspiring the next generation to be knowledgeable creators, innovators, and responsible leaders.

Knowledge Development

- All instruction is directly aligned with the Alberta Program of Studies for English Language Arts, Mathematics, Science, and Social Studies.
- Students integrate the broad knowledge base of these subjects to learn to think for themselves, solve problems creatively, collaborate, and communicate effectively. The design thinking process is developed and integrated throughout.
- Vertical alignment of all subject areas in Grades 7-12 ensuring foundational skills in numeracy and literacy throughout our program.
- STEM literacy is deeply developed through offerings of cutting-edge option courses at Jr High and High School.
- All Grade 7 students take STEM Talks to learn effective communication skills which translate to all of their other subject areas.
- Entrepreneurship and Innovation courses at both the Jr. High and High school allow for development of entrepreneurial thinking and skills.

Character Development

- Diverse student population from across Calgary and area allows students to build positive relationships with those who they may not normally cross paths with.
- Character, community, and curiosity are the fundamental to our school culture.
- We host culture days to support diversity of all our learners.
- Students are encouraged to grow in their resiliency with an emphasis on teaching and developing a growth mindset in daily course work.
- Students held accountable for their actions as citizens in our learning community.
- 55 minutes/day of physical education for Grades 7-9 to enhance mental and physical well-being.

Community Engagement

- Social studies curriculum naturally leads students to learn their role in being citizens in a democratic environment. Students take part in the student vote during federal and provincial elections modelling the process of civil participation.
- School council and student leadership allows students to have a voice in their activities.
- Student surveys allow student voice in course development and school culture.
- Future ready speaker series at the high school exposes students to industry and post-secondary leaders from many diverse backgrounds and career pathways.

8. Sharing Practices: *The charter authority shares its innovative practices and learning outcomes with the education community.*

During the last two years, STEM IA has revamped its website to a user-friendly website that informs parents, students, and the broader community comprehensive information about our program. https://steminnovationacademy.com/.

STEM IA Journal is intended to showcase to our community the excellent learning that is happening at our schools. Since its creation in October 2022, there have been over 10,000 visits to the journal.

In the past three years, we have hosted the following schools and/or authorities to share information regarding our program and our start up journey to date: Grand Prairie and District Catholic Schools, Regina Public Schools, Prairie Rose Public School Division, Calgary Girls' Charter School, Thrive Charter School, New Horizons Charter School, STEM Collegiate, and Fusion Collegiate.

At the TAAPCS bi-annual conference in October 2023, all staff of STEM IA attended and networked with colleagues from other charter schools. We also had two teachers present at this conference on our Design Thinking Process.

Our high school recently hosted multiple teams from around the province at the regional VEX robotics competition. In addition, our high school robotics students volunteer at Telus Spark Science Centre to bring First Lego Robotics to young Calgary children and share about STEM learning.

9. Student Achievement: *Student Achievement is consistently strong or improving.*

STEM IA student achievement is very strong in our first two years of writing PAT exams for grade 9. We continue to exceed provincial averages in all areas. Our 2023 results show improvement on our test averages in all areas overall with the exception of Social Studies.

June 2023 PAT Results Summary

	# Students Writing	% Acceptable		% Excellence		% Below		STEM IA Test Average	Province Test Average	Difference (STEM IA & Province)
		STEM	Prov	STEM	Prov	STEM	Prov			
ELA	131	98.5%	85.1%	24.4%	15.9%	1.5%	14.9%	72.9%	65.1%	+7.8%
Writing		96.2%	88.8%	27.5%	20.1%	3.8%	11.2%	70.4%	66.5%	+3.9%
Reading		96.9%	80.1%	43.5%	19.9%	3.1%	19.9%	75.4%	63.6%	+11.8%
Math	131	99.2%	64.0%	58.8%	15.6%	0.8%	36.0%	83.0%	57.1%	+25.9%
Part A		93.9%	47.6%	66.4%	17.1%	6.1%	51.6%	79.0%	43.5%	+35.5%
Part B		99.2%	70.7%	59.5%	17.9%	0.8%	29.3%	84.0%	60.5%	+23.5%
Science	130	99.2%	78.5%	56.9%	24.1%	0.8%	21.5%	81.3%	62.7%	+18.6%
Knowledge		96.9%	77.8%	53.1%	21.7%	3.1%	22.2%	81.4%	63.2%	+18.2%
Skills		99.2%	79.9%	66.9%	29.7%	0.8%	20.1%	81.2%	62.4%	+18.8
Social Studies	131	90.1%	69.0%	35.9%	19%	9.9%	31.0%	71.4%	58.6%	+12.8%
Knowledge								73.7%	63.7%	+10.0%
Skills								69.7%	55.5%	+14.2

June 2022 PAT Results Summary

	# Students Writing	% Excellence		% Acceptable		% Below		STEM IA Test Average	Prov Test Average	Difference (STEM IA vs Province)
		STEM	Prov	STEM	Prov	STEM	Prov			
Mathematics	82	40.2	19.6	89.0	62.7	11.0	37.3	72.4%	56.5%	+15.9%
Part A		48.0	19.5	73.2	47.8	26.8	50.8	75%	54%	+21%
Part B		45.1	22.4	90.2	70.6	9.8	29.4	72%	57%	+15%
Science	79	50.6	27.6	94.9	82.0	5.1	18.0	79%	66.5%	+12.5%
ELA	80	20.0	15.8	98.8	85.4	1.3	14.6	71.8%	65.3%	+6.5%
Writing		21.3	18.1	97.5	88.6	2.5	11.4	68.2%	65.8%	+2.9%
Reading		37.5	21.3	97.5	81.0	2.5	19.0	75.6%	64.8%	+10.8%
Social Studies	81	28.4	20.6	95.1	72.4	4.9	27.6	74.2%	63.0%	+11.2%

Each year, students in junior high complete baseline assessments in English Language Arts and Mathematics. Additionally, all students complete midterm and final exams in all core academic areas. Teachers use these results to develop a strong understanding of where students are at in their mastery of key outcomes.

10. Continuous Improvement: *The charter authority exhibits in multiple ways ongoing commitment to engaging students, teachers, parents, and community members in a model of continuous improvement.*

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.

Our teachers from Grades 7-12 meet bi-annually in subject specific teams to ensure vertical alignment from grade to grade in the applicable subject. Key 'must knows' are identified as well as appropriate resources, blueprinted assessments, standard setting on written assessments and effective, research-based teaching strategies for each grade level. In addition, PAT results are analyzed in the fall by each subject area team to improve understanding of areas of strength and growth in terms of teaching and learning.

Our options courses are examined bi-annually by teachers, students, and industry experts to ensure their validity and adaptability to ever-changing technological innovations. For example, new offerings of courses at the junior high and high school were offered in 2023-24 after feedback was gathered by STEM IA options team.

We continue to develop new option courses including both CTF and CTS. In addition, we developed, wrote, and received approval for a new Locally Developed Course – Biomedical Studies 25 in Spring 2023 that is currently being offered in the 2023-24 school year.

In section 11 more detail is provided about community engagement.

11. Community Engagement: *The charter authority works collaboratively with stakeholders and demonstrates broad and sustained levels of community 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 in the last school year:

- Open House for current and prospective junior high families – November 2023 attended by 800 people.
- Open House for current and prospective high school families – November 2023 attended by 1000 people.
- School Council meetings held monthly with all parents from junior high and high school attending.
- Weekly update to families from Principal and Classroom Teachers.
- Transportation Parent Engagement meeting February 2023 to strategize solutions to ongoing bus disruptions due to driver shortages.
- Professional growth conversations with staff twice each year.
- Monthly standing faculty meetings occur each week (full faculty, curriculum, grade level).
- 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, UVic) for high school course planning.
- Annual local and provincial surveys to students, staff, and all STEM IA parents.
- Administration attending recruiting fairs at universities: St. Mary's, U of L, U of C, U of A, and UBC.

12. Research-Informed: *The charter authority uses research-informed practices to create innovative learning environments and improve student learning.*

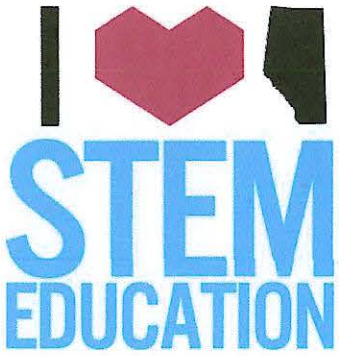
As stated in our Charter, STEM IA utilizes a variety of instructional methods anchored in current research to address individual and larger group needs. Direct instruction is a key component of our teaching philosophy and is utilized to ensure that students have a sequentially developed knowledge base. Project-based learning builds on this foundation and provides opportunities for active, hands-on learning. Instructional methods are implemented so that learning may be:

- enriched in terms of the breadth and depth of studies conducted by the students,
- engaged in whole class, small group, and individual work, as appropriate to meet the desired learning objectives, and
- individualized in terms of the recognition of each student's unique profile.

Working collaboratively, teachers develop projects and use supporting materials that are common across courses and grades, thus ensuring that precious teaching time is spent using examples and resources that have been deliberately chosen to provide coherence to the learning goals of the school as a whole – moving across the grades. Our strong academic results are a testament to the success of our research-informed instructional approach to teaching and learning.

In 2023, STEM IA adopted Marzano's High Reliability Schools (HRS) framework. The HRS framework defines five progressive levels of performance that a school must master to become a high reliability school—where all students learn the content and skills they need for success in university, careers, and beyond. The framework shows how best practices work together and provides indicators to empower districts and schools to measure their progress on attaining five increasing levels of reliability. Using the framework and its indicators, STEM IA can drive permanent, positive, and significant impacts on student achievement by synthesizing multiple complex initiatives into one interrelated system. STEM IA has started implementation of Level 1: Safe, Caring and Collaborative Culture and Level 2: Effective Teaching in Every Classroom. All members of the senior leadership team, administrative teams, and school-based leadership teams are engaging in book studies on 'Leading a High Reliability School' to ensure we are building capacity in our teachers and focusing on excellence in student achievement. Our journey to develop and maintain attributes of a High Reliability school will continue into future years.

In Summer 2023, STEM IA conducted research into 100 of the top performing schools around the world as identified through PISA and other international surveys. The purpose of this research was to investigate the program and course offerings specifically in the 'hard sciences' and technology areas of study that these schools offer and decide how STEM IA could adapt some of these offerings to our students. These findings have since informed both our junior high and high school option course offerings to include the following strands:

- Engineering & Design
- Computational Thinking
- New Media
- Specializations such as:
    - Biomedical Studies
    - Sport Science
    - Space Science
    - Neuropsychology
    - Artificial Intelligence
    - Game Design and Development
    - PC Remix

STEM Innovation Academy is on a positive trajectory to become the premier learning community for the design and advancement of innovative Science, Technology, Engineering and Mathematics education both in Canada and worldwide. Regular research, consultation with post-secondary institutions, and leading industry representatives will continue to be an important part of our growth as a premier learning community.