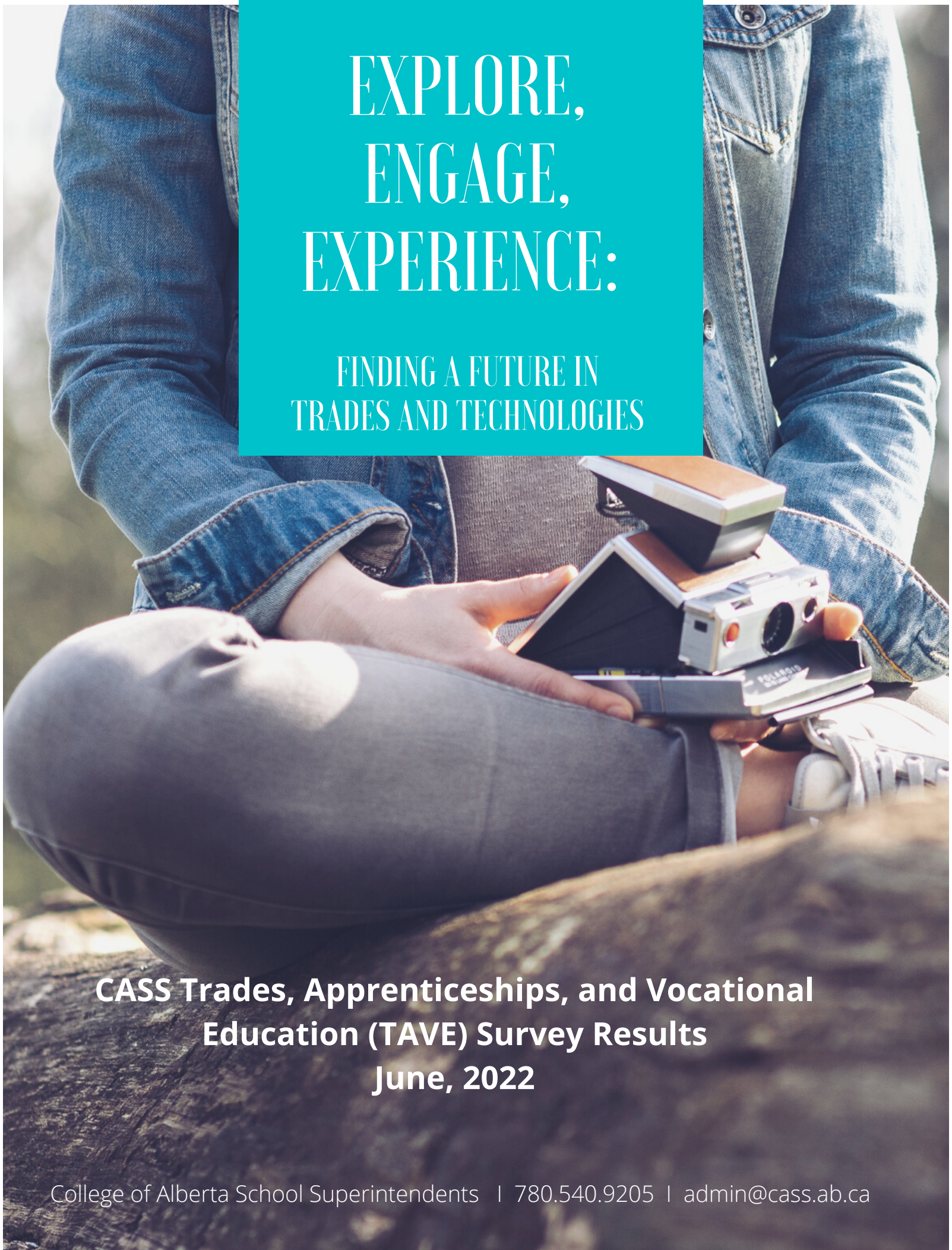

EXPLORE, ENGAGE, EXPERIENCE:

FINDING A FUTURE IN TRADES AND TECHNOLOGIES

CASS Trades, Apprenticeships, and Vocational Education (TAVE) Survey Results
June, 2022

College of Alberta School Superintendents I 780.540.9205 I admin@cass.ab.ca

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Executive Summary

Through a grant provided by Alberta Education, CASS established the **Trades, Apprenticeships, and Vocational Education (TAVE) Committee** to design a strategic framework that illustrates how stakeholder groups could come together to close the employment gap while maximizing efficiencies and building synergies among partner organizations. Made up of representatives from Alberta's education ministries, school authorities, post-secondary institutions, skilled trades partner organizations, and employers, TAVE came together under the Collective Impact Model and hopes the framework lays the foundation in building students' interest, awareness, and participation in skilled trades and technologies. The 29 members of the TAVE committee recognized that skilled trades and technologies play a crucial role in Alberta's economy.

In 2022, the College of Alberta School Superintendents (CASS) developed the **Alberta School Authority Skilled Trades and Technologies Survey** and requested feedback from all school authorities that are members of CASS. 47 school authorities responded to the survey and provided valuable information that will be a source of knowledge, confirmation, and inspiration to school authorities all over the province. Information obtained through the survey will enable Alberta school leaders to explore the ways that school authorities utilize their staff, leadership, buildings, surrounding communities, and other educational institutions to develop the knowledge and skills of their students in trades and technologies.

While Alberta school authorities share similar goals, teaching methodologies, and resources, they also have significant differences. Many factors play a role in the ability of each school authority to offer trades and technologies education to their students, including the size of the school authority, its geographic location, and its ability to access valuable and relevant technologies during the learning process. These factors are vital to student success, but can also be managed in a variety of ways. It is important for all school authorities to monitor and assess this learning process, especially in relation to teaching and learning skilled trades and technologies, and consider ways that these processes might evolve in the future for their school authority.

Many of the issues identified in the CASS 2021 Needs Assessment related to inequities among school authorities were also evident in the results of this survey one year later. The information obtained through this survey will hopefully assist school authorities and Alberta Education to ensure that all school authorities are able to provide access to technology and post-secondary training programs, regardless of their location and the size of their authority.

Dual Credit student at Olds College from the Hospitality and Tourism Diploma program

EXPLORING CONDITIONS RELATED TO TRADES AND TECHNOLOGIES

The size of the school authority often impacts the strategies used to explore the scope of skilled trades and technologies.

Authorities with fewer than 5,000 students most often use:

- work experience programs
- CALM programs
- CTF and CTS programming,
- partnerships with local colleges
- Bridging to Teaching Program
- Dual Credit grants
- work experience
- RAP
- Green Certificate placements
- CTS courses, which are often taught by journeypersons
- myBlueprint

Authorities with 5,000 to 9,999 students often use the strategies listed above and ALSO often use:

- relationships with local industry
- STEAM challenges
- dialogue with post-secondary institutions
- a broader range of electives
- educational partnerships

Authorities with 10,000 to 39,999 students often use the strategies above and ALSO use :

- apprenticeship level education
- Career Pathway consultants
- specialized programs
- post-secondary fairs

Authorities with over 40,000 students often use the strategies above and ALSO often use:

- changemaker and maker spaces
- CTF in grades 4 to 9
- CTS in high school includes dual credit and off-campus

The geographic location of the school authority and/or school can have a significant impact on the strategies that are available for use in their area. Schools in large urban centres and smaller urban centres with access to community colleges, businesses, and partner organizations benefit from their relationships with those organizations. Schools in rural areas or small communities are often not able to access those resources as easily, but those schools and school authorities in rural settings often find creative solutions. If post-secondary institutions are not within close proximity, the role of technology in gaining access to post-secondary learning becomes much more important.

The use of technology is crucial to student learning in Alberta. The purpose of providing students with opportunities for hands-on experiences with trades and technologies is clear: skilled trades and technologies play a crucial role in Alberta's economy. School authorities have demonstrated a wide range of activities that have inspired students to pursue trades through the use of technologies:

- use of myBlueprint.ca software program in grades 7 to 12
- partnering with post-secondary colleges and institutions to deliver programming
- use of the Career Pathways model
- Virtual delivery (a person or organization broadcasting a live session with full two-way audio and video communication) offered to all schools at once
- Robotics Academy
- Chatter High
- Technology multimedia courses
- ALIS - Resources for Career Planning, Educational Planning, and Job Search through 211 Alberta
- CTF and CTS courses and projects
- partnerships with other educational organizations and schools
- Computer science offerings
- CAREERS: The Next Generation
- STEM Innovation Academy

DID YOU KNOW?

More than 27 school authorities in Alberta offer Dual Credit programs.

Exploring Skilled Trades and Technologies

Q1: How does your school authority explore the scope of skilled trades and technologies from Kindergarten to Grade 12?

Several different approaches to exploring the scope of skilled trades and technologies are currently being used more frequently than others: (numbers provided represent the number of the 47 school authorities that responded)

- Dual Credit (27 school authorities)
- CTF courses and projects (18)
- CTS courses (16)
- work experience (14)
- off-campus offerings (14), and
- the RAP program (13).

A total of 91 different approaches were described by the school authorities that responded. Depending on the location, size, and needs of the school authority, trades and technologies are being explored in often innovative ways, and are targeted to accommodate the students of that school authority in the most effective way possible. For example, a large urban school authority offers centralized programming through Unique Pathways, which is open to all of their high school students. This programming includes Dual Credit, exploratory, and internship options that create pathways in various areas, whereby students can enter and exit the pathway at multiple levels, depending on their previous exposure and certainty in their chosen path. Another example from a small rural school authority describes a variety of Jr/Sr high CTS program offerings and their current collaboration with Lakeland College's Dual Credit program. The division continually aligns the CTS programming to the local community context. A third school authority describes how they have aligned their maker-centred learning, CTF, and CTS programming from K to 12. Some school authorities describe their challenges in exploring trades and technologies and note that the students attending their larger urban schools have more opportunities, particularly in junior/senior high, than students in their smaller rural schools.

Q2: How does your school authority explore the demand for skilled trades and technologies from Kindergarten to Grade 12?

Exploration of the demand for skilled trades and technologies appears to be a challenge for many school authorities. Some school authorities describe ways in which they would like to increase their knowledge of the trades and technologies their students want to explore, while others describe ways that their students are able to provide information about their interests and explore the demand for specific trades. Other strategies for gathering information about their students' interests include:

- gathering their students' feedback following work experience opportunities,
- gathering feedback from hands-on courses offered across their division,
- using RAP programs and career internships,
- the use of tools like MyBlueprint and ALIS,
- conducting a survey of parents and students in grades 5-8 to learn more about the programming students are interested in,
- partnering with organizations like The Educational Partnership Foundation (TEPF),
- providing a monthly communication newsletter for students, parents, and schools that highlights "in demand" careers based on the National Occupational Classification data. Each month, there is an in-depth focus on one or two of these potential careers, with links to videos and resources for students to explore further, and
- providing presentations about college, university, awards, scholarship information, post-secondary fairs, RAP, Dual Credit, and Green Certification.

Q3: How does your school authority explore the value of skilled trades and technologies from Kindergarten to Grade 12?

Exploration of the value of skilled trades and technologies can be a challenge. However, a number of school authorities shared ways that they are able to explore the value of trades and technologies with their students by:

- attending a variety of engagement sessions with trades organizations, and consistently engaging with NAIT,
- holding a symposium to gather stakeholder feedback in order to inform the future of Career Pathways in the division,
- adopting a campus-style model to increase student access to the trades and technologies courses offered,
- holding a Career Day,
- having robust CTF programs in their schools and working with post-secondary and industry partners to provide programming and exposure for students,
- embodying a vision through our STEM Innovation Academy that demonstrates a vision for education our province needs more than ever – one that inspires students to be technology creators and innovators, not just technology users, and
- using off-campus coordinators' presentations and assistance, as well as presentations and assistance by career counselors.

One division responded that they don't believe they have embedded strategies and they do not have an implementation plan. However, they do have a strong belief in the value of trades and trades-related programming to support student pathways to high school completion. They have also collaborated with other local divisions to host a "Tour of the Trades" for students; their high school teachers and counselors promote the trades, and they participate in ad hoc events to promote the trades.

Q4: How does your school authority inspire youth to go into skilled trades and technologies?

Much is being done to inspire not only the students but also parents and communities. School authorities across the province are working hard to inspire their students to seriously consider entering skilled trades and technologies, and are planning and finding new ways to make that happen. School authorities provided over 30 examples, including:

- promoting the Registered Apprenticeship Program (RAP),
- providing work experience,
- inviting guest speakers and online presentations,
- participating in skills competitions,
- providing off-campus coordinators, career counselors, and vocational coordinators,
- providing dual credit programming,
- holding career fairs and providing invitations to tradespeople to share their passions,
- offering CTS courses that provide opportunities to explore the scope of skilled trades and technologies,
- bringing in post-secondaries that provide trades and technology training and education,
- creating new programs and partnerships. For example, working with the Oil Sands Trade Show to add an element of learning for students this fall,
- partnerships with post-secondary Institutions (e.g. CTF programming challenge with SAIT),
- providing CTF exploratory courses, and
- opening a STEM school for the coming year focusing on technology.

A great deal is being done to encourage students across the province to consider trades and technologies. While the strategies being employed and/or considered are extremely diverse, they are being developed by individual school authorities based on their own needs and knowledge of their communities. It appears that some are already experiencing significant success.

Q5: What authentic, hands-on training or opportunities related to skilled trades and technologies does your school authority offer?

School authorities in Alberta are working hard to provide a variety of experiences related to skilled trades and technologies for their students. School authorities carefully consider their working and learning environment, the needs of the students, the working environment and needs in their area, and the authority's ability to provide new alternatives that will support their students as they move into post-secondary institutions or workplace settings. It is extremely important that the learning and training opportunities offered are relevant to their surrounding communities. If the programs being introduced or already being utilized do not support the needs of the local community or communities in reasonable proximity, they may not be successful. Training programs need to be authentic, relevant, stimulating, and engaging.

An extensive list of 58 programs that are already in place or are poised to become a reality in 2022 was compiled from school authorities across Alberta. Here are some examples that are in place in multiple school authorities:

- CTS - noted by 16 school authorities
- RAP - 13 school authorities
- Dual Credit - 27
- Partnerships with post-secondaries - 6
- Internship opportunities
- Partnerships with private companies to take students into work experience
- Green Certificate
- Culinary arts, shop, cosmetology
- Automotives, Cosmetology, Comm Tech, and photography at the high school level
- CTF courses in Computer Science and Robotics
- Mobile Trades Lab – Welding exploration for grades 5 - 12
- Trades Exposure Centre - an operational oil rig and training facility with a camp for students to fully experience what it may be like to live in a camp
- Multimedia program: audio, sound, lighting, etc.
- Aviation Academy: focuses on remaining a part of the military community; parents come to science class to talk about avionics and other curricular links

It is readily apparent that school authorities all over Alberta are working diligently to ensure that their programming is able to accommodate students who plan to enter the trades or technologies. Many school authorities also described new hands-on opportunities that will be introduced in their schools in the near future.

Fort McMurray Catholic Schools student

A wonderful example of the opportunity for students to explore a trade while they are still in high school came very recently from the city of Grande Prairie in northern Alberta. Nicholas Lavallee, a 17-year-old student who attends St. Joseph Catholic High School, decided a year ago to take RAP, the Registered Apprenticeship Program, following a discussion with his mom. After learning about RAP, Nicholas realized that learning a trade through RAP while still in high school was something he was interested in doing. Kamwin Electric took him on as a RAP student about a year ago. He was able to work on the brand new Louis Riel Catholic School, a grade 4 to 8 school set to open in Grande Prairie in the fall of 2022. Nicholas stated that he was able to get familiar with tools, and learned how to work with the people around him. He quickly felt comfortable on the job, and that helped him to learn. He assisted with putting lights into the ceiling, plugs in the walls, and pulling wires from panels to boxes.

After his experience in the RAP program during the past school year, Nicholas has decided to stay in the RAP program for the remainder of his schooling and save as much money as he can to pursue his passion for music through audio engineering.

Nicholas Lavallee, RAP student
Shared with permission from the Lavallee family and St. Joseph Catholic High School, Grande Prairie and District Catholic Schools.

Students from Chinook's Edge School Division experiencing the Veterinary Technician Assistant Certificate, which is a certificate program in dual credit.

Q6: What partner organizations do you engage with to assist you in providing skills, training, and opportunities for your students?

School authorities all over Alberta are partnering with a wide variety of organizations that assist the school authorities to engage their students in skills, training, and opportunities that the school themselves may not be able to do without that connection to the wider community. While not all school authorities described partnerships with other organizations, many partnerships exist, including with the following organizations:

CAREERS: The Next Generation - 30 partnerships

Skills Canada - 15

Women Building Futures (WBF) - 8

Rupertsland Institute - 6

SAIT - 5

TEPF (The Educational Partnership Foundation) - 5

Try a Trade - 5

Skills Alberta - 4

Career Transitions - 4

Olds College - 3

Lakeland College - 3

Keyano College - 2

Junior Achievement - 2

myBlueprint - 2

a talented student fabricating an intake for the turbo on his truck

Did you know???

Many other organizations and public services (such as the RCMP), local industries, and businesses are also engaged with at least one school program. The number of organizations that are committed to supporting Alberta students is impressive! The schools they engage with are also committed to planning for future growth and development of the programs and opportunities they provide to their students. School authorities described their plans for continual exploration and the creation of future partnerships that provide opportunities and experiences for their students. One school authority described experiencing a challenge in successfully securing employers for apprenticeships due to cycles in the local economy, but they have hired a person to work in the community to build greater opportunities. Evidence from all over the province demonstrates that engaging with organizations, businesses, and educational institutions creates valuable sources of opportunities and experiences for Alberta students.

Q7: Many Alberta employers can provide high-quality learning opportunities and accessible, inclusive workplace experiences. How does your school authority engage with employers to offer successful workplace experiences?

Work experiences are a vital piece of the puzzle that ultimately helps to make students successful in the workplace. Many school authorities throughout Alberta work closely with local employers, organizations, and businesses to provide opportunities for their students to gain work experience. Students have often been able to benefit from successful workplace experiences through local businesses, industry partners, and collaboration with organizations such as Skills Alberta.

Employers and organizations sometimes support workplace experiences as follows:

- Successful workplace experiences are often established through RAP (Registered Apprenticeship Program), one of the most frequently used programs for workplace experiences. Thirteen school authorities reported that they utilize RAP to promote effective work experiences. Off-Campus teachers and school administrators often work directly with employers through the RAP process. Two school authorities indicated that RAP is their biggest means of offering successful work experiences. Another school authority strongly encourages and supports students entering the RAP program. They have engaged with a number of employers over the last few years, increasing the ability of their students to explore a skilled trade placement.
- Some school authorities collaborate with CAREERS to identify, place, and support students in workplaces, and were described as doing so by seven school authorities.
- School authorities have found that Dual Credit employment opportunities can be successful in local businesses, hospitals, and nursing homes.
- Some school authorities partner with other organizations, such as the Christian Labour Association of Canada (CLAC). The same school authority also reported having a partnership with a company to help their students learn about greenhouse growing as part of CTS/Science classes. They also use RAP, CAREERS, Skills Alberta, and Try-a-Trade.
- Other organizations, including Work-Ex, Green Certificate, the University of Alberta, and the Youth Achievement Program (YAP), are utilized successfully by school authorities in Alberta.
- Some school authorities utilize partnerships with the University of Alberta and the Youth Achievement Program (YAP) for job shadow experiences.
- In one school authority, Work Experience takes place in all senior high schools.
- Another school authority described the responsibilities of their Off-Campus Coordinator who oversees all aspects of workplace experiences. Safety visits, ongoing monitoring, and recruitment of new employer partners are part of the OCC's responsibilities.
- Five school authorities in Alberta described using CAREERS in relation to work experience.

A number of areas for growth related to workplace experiences were described:

- One school authority has partnered with two other local divisions to collaborate on on-site inspections. Rather than requiring someone from each school or division to do multiple inspections of one site, they share site inspections so employers only need to have one inspection done when needed.
- In many situations, RAP and workplace positions ceased to exist during Covid. Thus, the relationships between the school, students, and workplace staff will need to be re-established before workplace experiences can be successful again.
- School staff work to the best of their ability to build up the students for these placements as much as possible. One school authority stated, "If we are not preceding these work placements with readiness and skill learning experiences then we are not really preparing youth well for a successful transition into their apprenticeship years."
- At times, schools have reported that employers are not sure what to do with the students in their work settings. As CAREERS has more dedicated funding and more time to build relationships with the community, it was suggested by that school authority that it would be more effective if CAREERS took the lead on that work in the community. The hope is that by clearly defining roles and responsibilities, CAREERS can connect with businesses, school staff members can connect with students, and CAREERS and staff can then put students and businesses together. Another school authority also reported that the employers are sometimes not sure what to do with the youth. Thus, many job sites have limited learning occurring. It was suggested that the province needs to create a defined learning expectation for employers to achieve with youth. Provincial guidelines on skills that should be taught would be advisable.
- One school authority stated that “our schools have done a great job securing successful workplace experiences. Many of our communities are small and do not always have the most robust workplace opportunities. We have scheduled face-to-face focus groups for the fall of 2022 with local businesses, trades, chamber of commerce, school principals, school counselors, CTS teachers, town and county politicians, and local trustees to meet to discuss our current reality and what the schools are doing, businesses to share their current reality and need, and then to discuss possible partnerships that could happen.”

It appears that, while RAP, Career Internships, and other work projects are invaluable and enable students to learn new skills, more work may need to be done in some settings by business owners, school staff members, and the school authority to ensure the success of the students in those settings.

Q8: What trades experiences does your school authority offer?

The range and scope of the trades experiences and hands-on training opportunities that are offered in Alberta schools are vast and somewhat complex. It is important to note that not all of the learning opportunities provided can be considered to be trades. A trade is defined in the Oxford Dictionary as, “a skilled job, typically one requiring manual skills and special training.” While some school authorities that responded to the survey listed several trades, other boards also engaged in valuable vocational education activities that were enjoyed by the students who experienced them.

The complete list of courses described and listed as trades on the Alberta Advanced Education Apprenticeship and Industry Training website that were noted by all school authorities included:

- welding/fabrication - 6 school authorities
- hairstyling - 3
- esthetics credentialed pathway
- chef
- cook/foods - 3
- culinary arts (cook) - 3
- auto service technology - 2
- carpentry - 2
- machining
- mechanics - 3
- electrical
- heavy equipment technology
- automotive service technology (auto service tech)
- communication technology
- baking
- plumbing
- cook apprenticeship credits
- cabinet making apprenticeship credits
- welding apprenticeship credits
- power engineering (power system technician)

School authorities also listed a total of 18 additional vocational education courses. These courses included:

- agricultural technology - 2 authorities
- animation technology
- art design
- broadcast video
- computer sciences
- construction / construction technology - 5
- cosmetology - 3
- design studies
- esthetics
- fashion studies - 2
- health care aide
- medical services
- music production
- pipe fitter
- photography/videography - 2
- robotics
- sports medicine
- technical theatre

Fort McMurray Catholic Schools students

Dual Credit Pre-employment Agriculture Equipment Technician certificate program at Olds College

Summary data related to trades in all school authorities:

- Data related to trades was gathered from all 47 school authorities that responded.
- The number of trades and vocational education experiences provided by each board ranged from 0 to 15.
- Larger school authorities tended to offer more trades and vocational education experiences, although four boards with fewer than 10,000 students offered up to 12 experiences.
- One school authority with fewer than 5,000 students listed 14 trades and/or vocational education options, which was surprising and impressive, given its relatively small size.
- Some school authorities also listed items such as dual credit and CTS that are not technically considered trades.
- Six school authorities do not offer trades experiences. This occurred for a variety of reasons. Three of these school authorities are small charter schools in which trades and work-related courses were not possible as a part of their programming, some of the charter schools do not offer high school programming at this time, and a larger school authority did not yet offer high school programming but will be expanding into high school in 2022/23. One Francophone school authority that does not offer trades found it difficult to find employers who can offer services in French.

Question 9: What post-secondary organizations/institutions do you engage with to offer your students skilled trades and technologies experiences? Please list the post-secondary organization and program.

Post-secondary organizations/institutions play a very important role in the education of Alberta students even before they leave high school and move on to their post-secondary education. Strong connections are often developed between secondary schools and the post-secondary institutions that their students move to after completing high school.

The information gathered in response to Question 9 of the 2022 TAVE survey discovered that 29 different post-secondary institutions in Alberta have been an important part of the continued success of Alberta students beyond high school. Secondary schools all across Alberta contact these 29 post-secondary organizations and institutions to ensure their students are able to continue to develop skilled trades and technologies beyond high school.

Post-Secondary Organization	Total Connections Made	Program(s)
Lakeland College	12	Natural Resources, Power Engineering, Dual Credit, Health Care Aid Dual Credit; Sign Language; Play - Early Childhood; Heavy Oil and Gas
NAIT	5	Courses not listed
SAIT	3	Dual Credit in Healthcare; Pre-employment; Pharmacy Assistant; Healthcare Career Essentials; Carpentry and Welding; Pipe Fitter
	1	Aviation: Dual Credit: Aviation Programs Accreditation Compliance
	1	Aviation Avionics Technology: Dual Credit
	1	Health Fields and Nursing: Dual Credit
	2	NDT (Non-Destructive Testing)
	4	Courses not listed
	3	Courses not listed
	1	pre-employment carpentry, welding, pipe trades, culinary courses
	1	Dual Credit, programs such as management
	1	exploration of the Youth Foundations Program
	1	Tech World of Choices – new course
SAIT School for Advanced Digital Technology	1	Course not listed
Portage College	1	Computer Science
	4	Courses not listed
Northern Lakes College	4	Child Care; Education Assistant; Power Engineering
	3	Courses not listed
	1	Healthcare Aide
Northwestern Polytechnic	1	Dwindled due to change in dual credit funding
	2	Courses not listed
Olds College	8	Agriculture; Horticulture; Veterinary Tech; Heavy Duty Mechanic Dual Credit; Veterinarian Technical Assistant: 1 Dual Credit

Question 9, continued: What post-secondary organizations/institutions do you connect with to offer your students skilled trades and technologies experiences? Please list the post-secondary organization and program.

Post-Secondary Organization	Total Contacts Made	Post-Secondary Program
Olds College, continued	5	Courses not listed
	1	AG Tech; Solving Technology Problems
	1	Certification in Fabrication; vet tech
	1	Introduction to the Veterinary Profession
	1	Marketing for Hospitality and Tourism
	1	Veterinary Practices - Team Connections
	1	Introduction to Sports Management
	1	Global and Sustainable Tourism
	1	Applied Ecology
Red Deer Polytechnic	3	courses not listed
Education Partnership Foundation	1	Pipe Trades training
Bow Valley	1	Dual Credit
Red Deer College	1	Culinary Arts; Welding
Christian Labour Association of Canada (CLAC)	1	Welding
Alberta University of the Arts	1	Visual Communications Design Program
Concordia University Edmonton	1	Information Technology - Faculty of Science: Dual Credit
	1	course not listed
NAIT - (via NAIT Community Marketplace)	1	Nanotechnology
	1	course not listed
Lethbridge College	2	courses not listed (2)
	1	Explorations - 2-D and 3-D animation
	1	auto service technician (developing program for future years)
	1	Dual Credit, Trades, and Technologies
Mount Royal College	1	course not listed
Bow Valley College	1	course not listed
Keyano College	2	Dual Credit Welding; electrician; NDT
Athabasca University	2	courses not listed
Grande Prairie Community College	2	Fairview Campus; courses not listed
Medicine Hat College	1	Course not listed
	1	course not listed
MacEwan University	1	course not listed
University of Alberta	2	courses not listed
University of Calgary	2	courses not listed
Marvel Beauty School	2	courses not listed
Estelle's School of Cosmetology	2	courses not listed
Fairview College	2	courses not listed

The diversity of the post-secondary institutions and the subject matter of the courses taken are worth noting. The course subject matter varies greatly and demonstrates the diversity of the experiences of the students in finding a career that suits their abilities and interests. It is interesting that, as they enter post-secondary educational institutions, students appear to have widened their horizons dramatically. Exposure to a wide variety of topics and experiences in junior high and high school may have opened the eyes of the students to greater possibilities in their post-secondary educational choices. It is also possible, as our world changes more quickly over time, that student interests are generally becoming more diverse and more oriented toward non-traditional subject areas and careers.

Question 10: How does your school authority include skilled trades and technologies programs and programming for students in your:

a. school authority policies, and
b. education plan?

Feedback to this question indicated that most of the policies and programs related to skilled trades and technologies occur through administrative procedures. However, there is considerable diversity among school authorities and the ways they include skilled trades and technologies in their school authority policies:

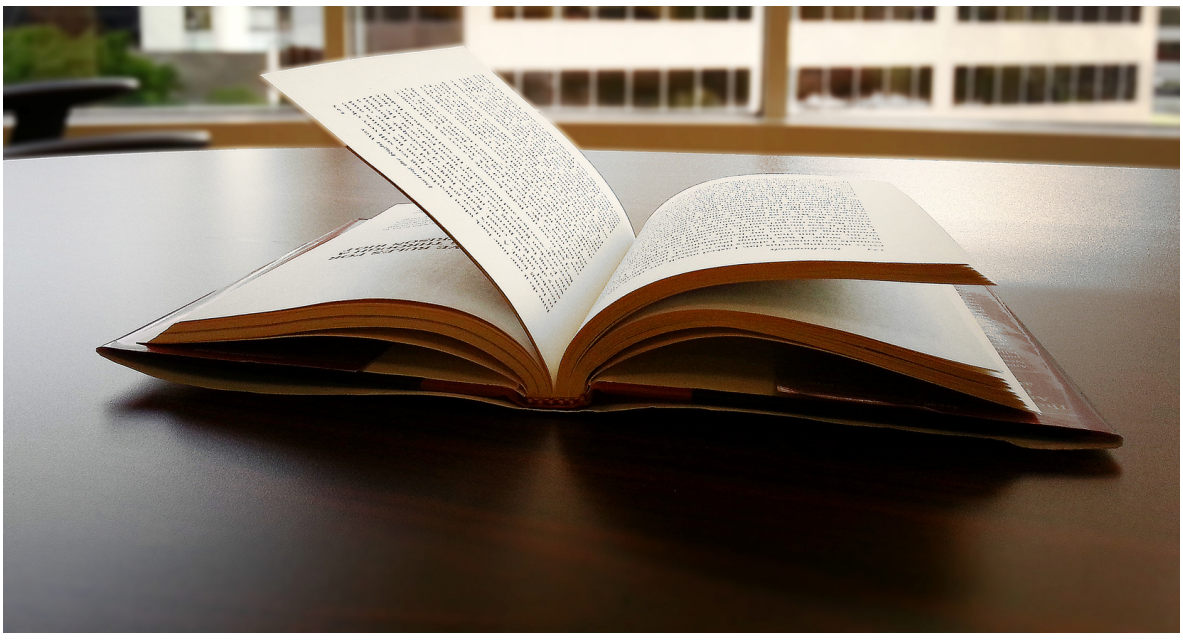
- A small majority of school authorities (27 of 47) include skilled trades and technologies programming in their administrative procedures
- 8 school authorities provide that direction through off-campus regulations, and
- no policy exists in 11 school authorities.

In school authorities where no policy or guidance currently exists, schools address their students' needs or desires through student success plans, referring to their school authority goals (if present) related to dual credit, off-campus opportunities, and partnerships with post-secondary and other external partners. One school authority commented that the current Board of Trustees is very supportive of programming around the trades, technologies, and careers, and has committed funds in the budget to support a position related to career opportunities for students.

Information and processes related to off-campus activities have provided some much-needed information to those school authorities that do not yet have a policy or processes in place related to trades and technologies. Some school authorities rely on Administrative Procedure 216, which relates to Off-Campus Education. Other school authorities also referenced the Guide to Education, the Off-Campus Handbook, and the Alberta Program of Studies/Curriculum, particularly portions related to CTF and CTS pathways.

32 of 47 authorities (68%) stated that their school authority has an Education Plan that references skilled trades and technologies programming.

It appears that smaller school authorities, especially those with fewer than 5,000 students, do not include trades and technologies in their programming as frequently as larger ones. This may be due to a lack of access to facilities, business partners, and educational institutions in their region, or they may not have as many secondary schools that are able to include CTS and other related programming in their schools. It also appears that some school authorities offer some trades-based and technology-based programming in schools, even though it is not specifically included in their education plans. This could possibly change in the near future as the expectation for trades and technology-related education increases.



Question 11: Describe a program, project, or course (including e-learning) that your school authority offers that could be replicated, adapted, or leveraged to include other school authorities.

Forty-seven school divisions responded to this question, indicating that various trades, apprenticeship, and vocational education programs, projects, and courses are occurring across Alberta.

The trades and technologies educational opportunities are largely unique to each division. The following examples were reported in this survey:

Programs

- Welding competency training for teachers offered in collaboration with the local Boilermakers Union Hall
- Supporting students return to high school for an additional year of grade 12 to participate fully in RAP
- Using myblueprinit as a learning portfolio and career exploration tool
- 2D and 3D Animation Programs
- Career Coaching Strategy
- Outreach programs that offer virtual courses, summer school, work readiness certifications
- Middle School partnership with Medicine Hat College provides middle school students access to high-quality trades experiences
- Oil Rig Training Program
- Robotics Program at Portage College
- Indigenous Culture and Cree Language Program as well as Dual Credit at Portage College
- Virtual K and E program
- The Farm is a program for students to learn agriculture, construction, mechanics
- Culinary Program
- Emergency Services Academy
- Robotics Academy
- Stem Innovation Academy

- A greenhouse provides indoor growing experiences connected to science and CTS curriculums.
- Community Marketplace is a website that allows teachers (K-12) to book community organizations (e.g. NAIT) to visit the classroom or take a field trip to experience careers
- Virtual Career Day
- Staff hired to lead an initiative and/or help showcase careers in the classroom
- Drone Pilot

Courses

- LDC 3123 Foundations in Industry Workplace Safety 35 under development
- Partnership with Lakeland College provides Technology Multimedia courses within schools
- Partnership with a local safety company to offer Foundations in Industry Workplace Safety
- Summer School Courses
- - Dual Credit with Career the Next Generation
- Aquaponics
- Innovation and Design Framework ensures systemic alignment between Maker-Centered Learning, CTF, and CTS from Kindergarten to Grade Twelve.
- Elective CTS Course for grades 7 and 8 includes topics such as robotics and coding
- Fabrication
- Forestry Mechanic
- Textiles and Fashion

Also reported were examples of multiple districts working together to offer:

- Shared site inspections
- Tri-district tours of trades
- Dual Credit (SWAC) Model enables students to participate in technical training and pre-employment at Red Deer Polytechnic and Olds College.

Question 12: Please consider providing any additional information, including documents, photos, videos, or other media that you feel would contribute to the collective impact of inspiring Alberta's youth to pursue trades and technologies as a career pathway.

10 of 47 responses were completed for this optional question.

School districts that responded to this question collectively indicated a strong commitment to creating pathways for youth to explore trades and technologies as a career pathway. Hands-on experiences within the students' communities were identified as key opportunities for exploration and engagement with trades and technologies. Specific examples included building a house from the ground up in partnership with a local home builder, agricultural programs in partnership with local businesses, and a community marketplace where community friends share their career passions in the classroom.

Many school districts shared information about their dual credit programs, which were available on school district websites. It was identified that there is a need for more dual credits and more opportunities for students to be actively engaged in trades and technologies in the local community. This would require dedicated staffing and resources, making it difficult for some school districts to achieve. Some school districts identified STEM as a way to inspire students to become creators and innovators in technology, not just users of technology. A curriculum could include topics such as: Biomedical Sciences, Virtual Reality and Augmented Reality, Digital Media and Design, Architectural Technologies, Coding, Robotics and Automation Clean Tech, Cryptocurrency and Blockchain, Game Design, or Digital Fabrication. Dedicated experiences in these areas resulted in students having unique experiences that drove their passion to learn more.

Chinook's Edge School Division students who recently completed
Heavy Equipment Pre-Employment Training at Olds College

2022 Alberta School Authority Skilled Trades and Technologies Survey Summary

Through a grant provided by Alberta Education, the College of Alberta School Superintendents established the **Trades, Apprenticeship and Vocational Education Committee (TAVE)** to design a strategic framework that illustrates how stakeholder groups could come together to close the employment gap while maximizing efficiencies and building synergies among partnering organizations. Made up of representatives from Alberta's education ministries, school authorities, post-secondary institutions, skilled trades partner organizations, and employers, TAVE's framework lays the foundation for building students' interest, awareness, and participation in skilled trades and technologies.

Due to the hard work of school superintendents and their dedicated teams across Alberta, the information gained from the 2022 Alberta School Authority Skilled Trades and Technologies Survey is an enlightening and important glimpse into schools around the province. Our thanks go out to:

- all school authorities that responded and contributed to this work
- the entire TAVE committee for their commitment to this project and for providing the framework to make this happen. The TAVE team takes every opportunity to work collectively with students. What was learned through this survey process will lay the groundwork for continued progress and action related to trades and technologies education across Alberta. It has been through the initiative and desire of school authorities to improve the delivery of trades and technologies education for Alberta students that change is already occurring. The data and information provided by the 47 school authorities that responded to the survey will enable school authorities to continue to move forward in this process, and
- CASS, for providing the funding to make this project possible.

Some of the factors that appear to play a defining role in the kinds of educational opportunities that Alberta students have are the student population of the school authority, its geographic location, and its ability to access and use technology effectively. School authorities that serve rural or semi-rural areas sometimes struggle with the complications of their distance from post-secondary institutions as well as other schools whose resources could potentially be shared, and their relatively small student populations. However, the Trades and Technologies Survey revealed some potential considerations regarding these issues. One possible solution to consider is the use of technology as a medium for providing instruction and sharing expertise in a particular trade. Pursuing support from Alberta Education to access programming, accredited instructors, and resources online may increase the availability and use of technology for school authorities that require support in this area. Smaller jurisdictions could also potentially share the expertise of school authorities experiencing similar issues, and consider sharing the costs and resources related to online programming.

Shared access to resources, including teaching staff, may also be possible in smaller school authorities. By establishing a partnership with another school or jurisdiction, shared learning may also occur, resulting in students having the opportunity to partner and work with students in another school or school authority. This shared access to resources and learning is already occurring in some areas. Advances in technology are also making these kinds of partnerships more accessible.

Questions 8 and 9 in the TAVE survey asked school jurisdictions to indicate what trades experiences they offer, what post-secondary organizations/institutions they connect with to offer their students skilled trades, and what vocational education courses they are able to access. The information provided was incredible: Alberta schools are currently offering courses in no fewer than 20 different trades and providing a total of 18

additional vocational education courses. Secondary schools across Alberta also connect with 29 different post-secondary institutions, and state that this helps to ensure their students are able to continue to develop skilled trades and technologies experiences beyond high school. Again, technology appears to play a very important role in the education of Alberta students who are pursuing trades. These connections between schools and post-secondary institutions are crucial to the futures of Alberta students. Finally, one of the last questions in the Trades and Technologies Survey asked school authorities to describe a program, project, or course (including e-learning) that they offer in their jurisdiction that could be replicated, adapted, or leveraged to include other school authorities. Almost every school authority responded with something that they offered and would be willing to share, or something they would like to learn from their colleagues in other school authorities. It is clear that virtually all Alberta school jurisdictions are prepared to share what they are doing with other school authorities across the province and to work together as a learning community to benefit their students. The opportunities that were shared for all Alberta school jurisdictions to learn from each other regarding teaching the trades and technologies are impressive.

Where do we go from here?

Many opportunities, possible changes, and new directions came directly from the data provided by the 47 school authorities that contributed to this document. Alberta school authorities will hopefully continue to keep the end in mind and move relentlessly toward the future. That “end” is being able to provide all interested Alberta students, regardless of their location in the province, with access to practical hands-on education and experiences with trades and technologies that will assist them with the training and education to pursue a trade. We have already seen the positive beginnings of this process and can envision what the future may look like for those students as they work toward a successful career in the trade of their choice. By working together across Alberta, we can ensure our Alberta students are ready for a bright future in trades and technologies.

Chinook's Edge School Division students who completed courses through
Red Deer College (now Red Deer Polytechnic)

Appendix A: Acronyms Related to the Trades and Technologies Survey Results

ALIS: The Alberta Learning Information Service - Resources for career planning, educational planning, and job search through 211 Alberta. It is managed by the Alberta government.

Apprenticeship: Apprenticeship is hands-on training for people who want to work in a skilled trade or occupation that includes learning new skills from skilled journeypersons. Students can choose an apprenticeship as their pathway after high school. Other postsecondary pathways include college, university, or the workplace. Apprenticeship training provides access to well-paying jobs that demand a high level of skill, judgment, and creativity. Apprentices are paid while gaining work experience, and their wages rise as their level of skill increases.

Bridge to Teacher Certification Program - The Bridge to Teacher Certification Program is a one-year program that helps school authorities sponsor and hire journey-certificated tradespeople to teach CTS. The government, the Alberta Teachers' Association, and post-secondary institutions worked together to create the program.

CAREERS: The Next Generation: High school students learn and earn as they test-drive different careers through paid internships, helping them find out what kind of work appeals to them. Employers are able to promote opportunities in their industries. Our corporate partners and donors not only support Alberta's youth but are also instrumental in building a stronger, more resilient economy.

Career Pathways: A Career Pathway is a series of structured and connected education programs and support services that enable students, often while they are working, to advance over time to better jobs and higher levels of education and training. Each step on a career pathway is designed explicitly to prepare students to progress to the next level of employment and/or education.

Career Transitions: Career Transition courses help students prepare for the transition from school to the workplace. Through such CTS courses as safety and career readiness, students learn to see themselves as agents of change, innovators, and leaders of their future goals. Introductory, Intermediate, and ADvanced Career Transitions courses are available through Alberta Education.

Chatter High: Chatter High is a content engagement technology platform in the classroom and at home that accesses the Daily Quizor the Mindful Modules. The "Daily Quiz" provides a daily career and programs of study exploration, while the "Mindful Modules" are customized, subject-specific learning modules.

Collective Impact Model: Collective Impact is the commitment of a group of actors from different sectors to a common agenda for solving a specific social problem, using a structured form of collaboration.

CTF: Career and Technology Foundations - Career and Technology Foundations (CTF) provides students in grades 5 to 9 the opportunity to explore their interests within various occupational areas and technologies.

CTS: Career and Technology Studies - Career and Technology Studies (CTS) is designed for high school students so they can explore their interests and career options. CTS offers students opportunities to develop skills that can be applied in their daily lives and improve their employability following high school.

Dual Credit grants - Dual credit is optional career-based high school programming. It can assist students in making meaningful transitions to post-secondary education or the workplace. School authorities have the flexibility to develop and implement dual credit programming that provides students with relevant learning experiences.

E-Learning: E-learning is a structured course or learning experience delivered electronically; it can also include performance support content.

Green Certificate Placements: The Green Certificate Program provides trainees with opportunities to enter a variety of agriculture-related, structured learning pathways as a part of their senior high school program and to earn up to 16 Grade 12 diploma credits and a credential leading to a career in agribusiness.

Makerspace: A MakerSpace is a venue for students to congregate and collaborate on various projects or creations and exercises. These spaces are geared towards investigating, exploring, tinkering, and problem-solving – through hands-on creativity. MakerSpaces are built on the premise that learning sometimes needs to happen outside of the classroom, in spaces dedicated specifically to creative play. The students, rather than the teachers, determine and drive their projects forward, led by their own natural curiosity and wonder. MakerSpaces apply STEAM principles of Science, Technology, Engineering, Arts, and Mathematics to create useful objects that can make a real-world impact.

myBlueprint: myBlueprint is an inquiry-based approach that follows a comprehensive education and career planning process that meets the learning needs, interests, and aspirations of all students. Students actively learn about their interests, skills, passions, and feelings, and document what they discover about themselves in pictures, videos, and journals.

NDT (non-destructive testing): NDT stands for Non-Destructive Testing. It refers to an array of inspection methods that allow inspectors to evaluate and collect data about a material, system, or component without permanently altering it.

RAP: Registered Apprenticeship Program - The Registered Apprenticeship Program (RAP) is an apprenticeship program for high school students where students who are attending high school to earn their Alberta High School Diploma or Certificate of Achievement, can also work towards a registered apprenticeship.

Skills Alberta / Skills Canada: At Skills Canada and Skills Alberta excellence in trades and technology careers is promoted through skills competitions, hands-on programs for students, and resources for educators.

STEAM Academy or STEAM Challenges: STEAM refers to a learning program that is curriculum-based and educates students in five specific disciplines: science, technology, engineering, arts, and mathematics.

STEM: Science, Technology, Engineering, and Math (STEM) is a broad term used to group together these academic disciplines. This term is typically used to address an education policy or curriculum choices in schools.

STEM Innovation Academy: The STEM Innovation Academy embodies a vision for education our province needs more than ever – one that inspires students to be technology creators and innovators, not just technology users. It is a new public charter school that is unique to Alberta. It opened for grades 7 to 9 in September 2021 and is opening the high school in August 2022.

SWAC: The School Within a College (SWAC) pathway provides students with the opportunity to complete their high school diploma, earn college-level credits, and learn in an adult learning environment in a college setting. These are often referred to as “dual credit” programs. Students build self-advocacy, literacy skills, and learning strategies in preparation to make a successful transition to post-secondary education. In some provinces and/or locations, the primary focus is on students facing challenges in graduating and who have the potential to succeed in college.

TAVE: Trades, Apprenticeship, and Vocational Education (TAVE) is a committee created through CASS. Through a grant provided by Alberta Education, the College of Alberta School Superintendents established the Trades, Apprenticeship and Vocational Education Committee (TAVE) to design a strategic framework that illustrates how stakeholder groups could come together to close the employment gap while maximizing efficiencies and building synergies among partnering organizations. Made up of representatives from Alberta’s education ministries, school authorities, post-secondary institutions, skilled trades partner organizations, and employers, TAVE hopes the framework lays the foundation in building students’ interest, awareness, and participation in skilled trades and technologies.

Try-A-Trade: Skills Canada Alberta attracts 10,000 high school students to its annual Provincial Skills Competition and Try-A-Trade. Try-a-Trade is a tradeshow where students can try different trades-associated projects at booths hosted by businesses. Due to Covid-19, Try-A-Trade® Take-out was created for the 2020-21 school year, with the support of partners such as Syncrude. Teachers could order free project kits online, giving students the chance to test-drive careers and learn new skills. Each Try-A-Trade® Take-out kit includes the necessary materials to complete an activity, instructions, and tutorial videos where needed.

Work Experience: Work Experience 15–25–35 are separate courses for credit that provide experiential learning activities undertaken by a student as an integral part of a planned school program under the cooperative supervision of an off-campus education coordinator.