



STAM MTS PD Day 2026



FRIDAY, OCTOBER 23, 2026

66TH ANNUAL STAM MTS PROFESSIONAL LEARNING CONFERENCE

Curiosity Creates the Future

Register here:

<https://www.eventbrite.com/e/stam-mts-pd-day-2026-tickets-2001954480743>

WELCOME FROM THE STAM PRESIDENT

Welcome to the 66th Annual STAM MTS PD Day. On behalf of the Science Teachers' Association of Manitoba (STAM), thank you for joining us as we celebrate curiosity, creativity, and excellence in science education. We are delighted to have you with us for a day of professional learning, collaboration, and the sharing of ideas that inspire and strengthen science teaching across Manitoba.

We invite you to join us at the STAM Annual General Meeting during the lunch break to learn more about the benefits of STAM membership, the supports, and opportunities available for you and your science program, and the many ways you can become involved with our vibrant professional community.

We hope you enjoy a rewarding and inspiring day, and we thank you for being part of this year's event.

Dr. John Wren
STAM President

WELCOME FROM THE STAM MTS PD DAY CHAIR

Welcome! This year's conference theme, 'Curiosity Creates the Future,' celebrates innovative science teaching that inspires inquiry, critical thinking, scientific literacy, and responsible use of AI. Thank you to our presenters, volunteers, sponsors, and participants for making this event possible.

Dr. Anju Bajaj
STAM MTS PD Day Chair

CONFERENCE AT A GLANCE

Session Schedule

Morning Sessions:

A: 9:00 – 10:15am

B: 10:15 – 11:30am

Note AB Sessions run 9:00 – 11:30am

Lunch Break

11:30 - 1:00PM (Lunch available on-site with prepurchase)

STAM Annual General Meeting

12:30–1:00 p.m.in cafeteria – *Door prizes for attendees!*

Afternoon Sessions

C: 1:00 – 2:15pm

D: 2:15 – 3:30pm

Note: CD Sessions run 1:00 – 3:30pm

ALL DAY SESSIONS

Please note these sessions take place at unique locations around Manitoba, see descriptions for more information

O1 AD - Ducks Unlimited Canada and Earth Rangers - Wetlands & Wildlife

Presenter: Nathalie Bays

Ducks Unlimited Canada - Oak Hammock Marsh

Level: K-6

Location: Oak Hammock Marsh

Time: 9am to 3pm

Join Stephanie Doyle, Associate Director of Education (Earth Rangers) and Emily Davidson, Interpretive Specialist (Ducks Unlimited Canada) at the Wetland Discovery Centre to learn more about wetlands, wildlife and how they are key to the biodiversity and health of our planet through investigation and activities. Leave with resources that help students explore ecosystems and take meaningful action to support them. This session is both indoors and out so please dress for the weather.

O2 AD - Teaching with Nature: Explore Your Environment & Below Zero

Presenter: Jenna Forslund (for Project Learning Tree Canada) and Kevin Groot (for the Canadian Wildlife Federation)

Level: K-8

Location: Oak Hammock Marsh

Time: all day

Session Description:

Bring nature into your teaching practice! Join the Canadian Wildlife Federation (CWF) and Project Learning Tree Canada (PLTC) for a free, full-day, hands-on professional learning workshop focused on Nature-based Education. This engaging training combines indoor learning with facilitated outdoor activities, modeling how nature-based approaches can fit into the school day. You'll also receive practical, curriculum-linked lessons that are ready to use in your classroom.

Why You'll Love It

A balance of indoor and outdoor learning, with movement, fresh air, and collaboration

Hands-on, experiential, nature-based activities

Print copies of Explore Your Environment and Project WILD activity guides

Access to additional print and online resources

CWF and PLTC are proud members of the Nature Education Collective. This training is supported by the Government of Canada, Consecon Foundation, and Fondation Gaspé Beaubien.

O3 AD - Take Environmental Science Outdoors

Presenter: Katrina Froese and Thomas Gauthier, FortWhyte Alive

Level: 6 - 12

Location: 1961 McCreary Rd, Winnipeg MB, R3P 2K9 - FortWhyte Alive McCreary Entrance

Time: 10:00 - 3:30pm

Max: 30 participants

Session Description: Join FortWhyte Alive educators at our 660 acre greenspace in south-west Winnipeg to help build your confidence in taking science outdoors. We will be sharing hands-on activities from our onsite school programs, and providing a toolbox of lesson ideas and investigations that can work in a schoolyard or local outdoor space. Activities will be targeted at a Grade 6-12 level, but all educators are welcome.

Our workshop will include outdoor time, rain or shine. Participants should dress for the weather, wear closed toe shoes. Our trails are crushed limestone, with some topography, and we have floating boardwalks which provide some instability. If you have any accessibility concerns, please contact kfroese@fortwhyte.org for information.

O5 AD - Incorporating Agriculture into the New Science Curriculum

Presenter: Lindsey Andronak (Faculty of Agriculture and Food Science, University of Manitoba) and Jessica Painter (Agriculture in the classroom - Manitoba)

Level: K-10

Location: Bruce D. Campbell Farm and Food Discovery Centre, 1290 Research Sta Rd, Glenlea, MB

Time: 9:00 - 3:30pm

Max: 40 participants

Session Description: Join Agriculture in the Classroom – Manitoba and University of Manitoba for a fun, informative, and interactive PD opportunity on October 23rd, MTS PD Day at the innovative Bruce D. Campbell Farm and Food Discovery Centre south of Winnipeg. Return to your classroom feeling energized after this hands-on opportunity to learn about free resources and programs and how they can help you incorporate agriculture into your teaching as you implement the new Science curriculum. Our resources are Monday-morning-ready and all free so you'll leave this session with feeling like you've received something that's tangible and actually going to help you teach!

During the day, you'll learn and play some of the over 200 free AITC-M resources, get the opportunity to tour of the University of Manitoba's Farm and Food Discovery Centre (home to AITC-M's Amazing Agriculture Adventure program), discover careers and post-secondary

opportunities in one of Manitoba's largest sectors, and network with other passionate colleagues about how you're implementing the new Science curriculum!

HALF DAY OFF-SITE SESSIONS

O6 AB - Biomedical science connections to the new MB Science Curriculum: Experiential learning at the Youth BIOlab

Presenter: Steve Jones
Youth BIOlab

Level: 5-12

Location: St. Boniface Hospital Albrechtsen Research Centre

Time: 9:30-11:30AM

Join us as we explore how current research at the St. Boniface Hospital Albrechtsen Research Centre connects to the dimensions of the new science curriculum and beyond. You'll experience some of the ways that Youth BIOlab programming can support teaching and learning through lab activities that highlight our work in neurodevelopmental and neurodegenerative disorders, cardiovascular disease and functional foods research.

O7 AB - Facilitating Connections to Nature with Living Prairie Museum - AM

Presenter: Marika Olynyk
Living Prairie Museum

Level: Junior high focus but elementary and high school teachers also welcome

Location: Living Prairie Museum, 2795 Ness Avenue, Winnipeg

Time: 9:30-11:30AM

Maximum: 25 participants per session

Connect with our prairie heritage and explore topics relating to conservation and environmental stewardship, evolution and adaptation, and relationships and interdependence. This interactive workshop will introduce our urban nature preserve, with information about the endangered tall grass prairie habitat, and the species and processes that make it unique. We will look at how we care for the prairie and other natural areas, how we continually work towards reconciling Indigenous and western ways of knowing, and ideas for how to connect urban learners with the natural world, with a focus on facilitating connections and curiosity primarily for ages 11-14 (but teachers of other ages welcome too). Our program will include a short indoor presentation, an outdoor tour and activities on the prairie, and facilitated discussion time with staff and participants. Activities will be both indoors and outdoors. We expect to walk on flat wood-chipped trails but outdoor activities can be modified for accessibility needs (please let us know in advance if possible). Please dress for the weather.

O8 AB - Take Flight! Programming at the Royal Aviation Museum Western Canada

Presenter: Brianne Vielfaure

Royal Aviation Museum of Western Canada

Level: General

Location: 2088 Wellington Ave, Winnipeg, MB R3H 1C5

Time: 9:30-11:30AM

Discover the curriculum-based, STEM-focused programming at the Royal Aviation Museum of Western Canada, designed for students from kindergarten through grade 12. Explore engaging programs that enhance classroom learning and spark students' curiosity about current topics and future careers. With aviation and aerospace gaining momentum especially following the recent Artemis II mission featuring Canadian astronaut Jeremy Hansen students participate in hands-on, memorable activities. Whether they're building buoyant, waterproof Orion Capsules, sitting in our 1950s Air Canada passenger plane and exploring the forces of flight, or learning how objects are safely transported from Earth into space, students are immersed in dynamic, interactive experiences. This session features a guided museum tour that highlights our educational programs, provides a comprehensive overview of offerings, and demonstrates clear connections to the Manitoba science curriculum.

O9 AB - Set sail on Lake Winnipeg!

Presenter: Lauren Beauchamp

Presenter: Lake Winnipeg Research Consortium

Level: 7-12

Location: Gimli, MB Docks (additional information will be sent to registrants)

Time: 9:30am - 12pm

Join the crew of the Lake Winnipeg Research Consortium for a half-day excursion on the M/V Namoo, Lake Winnipeg's floating research platform. Learn about our flagship Lake Ecology Field Program, where students come onboard the ship and discover how scientists sample different parts of the lake ecosystem, and learn about why we conduct whole lake scientific research and monitoring on Lake Winnipeg to gain a better understanding of ecological processes and how they are changing over time.

O10 CD - Facilitating Connections to Nature with Living Prairie Museum - PM

Note this is a repeat of the morning session.

Presenter: Marika Olynyk (Living Prairie Museum)

Level: Junior high focus but elementary and high school teachers also welcome

Location: Living Prairie Museum, 2795 Ness Avenue, Winnipeg

Time: 1:30-3:30PM

Maximum: 25 participants per session

Connect with our prairie heritage and explore topics relating to conservation and environmental stewardship,

evolution and adaptation, and relationships and interdependence. This interactive workshop will introduce our urban nature preserve, with information about the endangered tall grass prairie habitat, and the species and processes that make it unique. We will look at how we care for the prairie and other natural areas, how we continually work towards reconciling Indigenous and western ways of knowing, and ideas for how to connect urban learners with the natural world, with a focus on facilitating connections and curiosity primarily for ages 11-14 (but teachers of other ages welcome too). Our program will include a short indoor presentation, an outdoor tour and activities on the prairie, and facilitated discussion time with staff and participants. Activities will be both indoors and outdoors. We expect to walk on flat wood-chipped trails but outdoor activities can be modified for accessibility needs (please let us know in advance if possible). Please dress for the weather.

O11 CD - Indigenous Perspectives in Science: Practical Ideas for Classroom Implementation (In Person)

Presenter: Lilian Pozzer and Amy Farrell (Faculty of Education, University of Manitoba)

Level: K-8

Location: Room 300 and 309, Faculty of Education, University of Manitoba, Fort Garry Campus

Time: 1:00-4:00pm

In this hybrid workshop, in-person participants will engage in several practical activities designed to explore Indigenous ways of knowing and being in the context of the new science curriculum. Activities will encompass the production and use of different artifacts following Indigenous traditional knowledge, intersecting with K-8 science. Online participants will be invited to engage in several digital and practical tasks they will be able to complete remotely, and interact with the in-person group. A digital booklet of activities and resources will be shared with all participants.

ON-SITE HALF-DAY AM

Note: Sessions labeled as AB run for the whole morning (9:00-11:30AM).

G13 AB - Laboratory Management 101 for Science Teachers (AM Session)

Presenter: François Gauvin (Université de Saint-Boniface, retired) and Shannon Baxter (Associate Head, École George-McDowell)

Level: 9-12

Location: Garden City Collegiate

Time: 2 hours morning

Session Description:

- Are you a new Grade 7-12 level science teacher?
- Do you have old bottles of chemicals in your school storage area?
- Would you like to know more about management of chemicals and chemical safety at school?

This workshop will cover the knowledge and skills to acquire in terms of chemical products management and laboratory safety in schools. This is a starting point to support and assist teachers who are new to teaching science courses or who have questions about good usage and good storage of chemicals, and general chemical safety in their Grade 7-12 level schools.

Classification, storage and disposal of chemicals, along with several procedures to follow in case of incidents, will be covered. Complementarily, current Canadian chemical safety systems like WHMIS, TDGR, CCCR, and United States NFPA 704, will be discussed.

G14 AB - Planning Resources for K-10 Science with a Northern, Land-based Perspective

Presenter: Jacqueline Monteith (Frontier School Division)

Level: K-10

Location: Garden City Collegiate

Time: 9:00-11:30AM

Session Description: Explore multiple support resources created for the new K-10 Science Curriculum. Resources include Approaches to Teaching Science, Multi-Grade Classrooms, Materials list, and much more. The session will be hands-on. Participants will leave with multiple free planning resources and materials for immediate implementation.

G15 AB - Effective Strategies (and mindset) That Leverage the Expertise in the Room to Examine & Explain Complex Science Concepts.

Presenter: Shane Watson (Pembina Trails School Division)

Level: General

Location: Garden City Collegiate

Time: 9:00 – 11:30am

Session Description: The session may include some of the concepts found in the videos I made below.

How teaching models influence our Decisions

<https://youtu.be/MUaxdczvAKw>

Senior Years Science

<https://www.youtube.com/watch?v=JHY1AhIgyqA>

Middle Years Science

<https://youtu.be/kRQkG7OTHUE>

Early Years Science.

<https://youtu.be/TWE5CHqSv9E>

Early Years Science (and more).

<https://youtu.be/ZM-GShVFclc>

G16 AB - Overview of K-10 Renewed Science Curriculum (AM)

Presenter: Jason Braun, and Michelene Reiniger (Manitoba Education and Early Childhood Learning)

Level: General

Location: Garden City Collegiate

Time: 9:00 – 11:30am

Session Description: Ready to bring Manitoba's renewed K–10 Science Curriculum to life in your classroom?

Join us for a dynamic 2.5-hour workshop designed to support educators in implementing the renewed curriculum with confidence.

During this interactive session, you will:

Gain a clear overview of the renewed K–10 Science Curriculum and its alignment with the Manitoba Framework for Learning.

Discover how science literacy, global competencies, and the five curriculum strands support student learning.

Use the Learning Experience Planning Template to design learning experiences and assessment practices in support of meaningful, coherent, and responsive science learning.

Examine the Evaluation and Communication of Student Learning, including the revised science report card categories.

Consider practical classroom applications and implementation strategies.

Leave with actionable insights and renewed confidence for the science learning ahead.

Come ready to collaborate, reflect, and be inspired by the possibilities of science education in Manitoba.

ON-SITE 75MIN. AM SESSIONS

A sessions run 9:00-10:15am; B sessions run 10:15-11:30am

G17 A - Introducing Shad Canada

Presenter: Ebony Demers(Shad Canada)

Level: 9-11

Location: Garden City Collegiate

Time: 9:00 – 10:15am

Session Description: Shad is a STEAM and entrepreneurship program that runs every summer in the month of July. The program works to ignite curiosity, build confidence, and prepare students in Grades 10 and 11 to thrive in a fast-changing world. In this session, we will share more about why Shad could be a great fit for your students, how they can apply for the program, and answer questions you might have.

G18 A - Rocks: Their Formation and Location

Presenter: Jeff Young

Department of Earth Sciences, University of Manitoba

Level: K-4

Location: Garden City Collegiate

Time: 9:00 – 10:15am

Session Description: All rocks contain stories that describe the formation and evolution of the Earth. This session will focus on the identification of the three basic types of rocks and discuss their distribution in Manitoba.

G19 A - Bunsen burner skills

Presenter: Roby Yeung

Level: 9-12

Location: Garden City Collegiate

Time: 9:00 – 10:15am

Session Description: How do students learn how to use a Bunsen burner in chemistry class? Through diagrams? Through explicit instructions? Through stations?

This session is to incorporate the global competencies in the new science curriculum by learning how we can have our students make their own personalized glass stirring rod while learning how to safely use and operate a Bunsen burner. You will learn how to safely cut glass tubing, design, and seal glass tubing to make your very own glass stirring rod. A discussion will follow on how we can incorporate the 6 global competencies in chemistry class.

G20 A - Brain Changing: Exploring connections between Neuroscience and Innovative Teaching

Presenter: Brian Dentry (MAPT, Perimeter Institute, STAM)

Level: K-12

Location: Garden City Collegiate

Time: 9:00 – 10:15am

**** This session is part of a series of 4 throughout the day, each with a different topic within the theme described below.****

Session Description: Human perception is frightfully narrow: We believe we see the whole when in fact we've seen a fraction.

Why Are Our Students in Our Classroom?

How do YOU conceptualise teaching & learning?

- Do you think of learning as a contractual agreement: the teacher performs certain actions to facilitate learning, and the student, in turn, explicitly or implicitly promises to behave in ways to receive that learning?
- Do you think of learning in sociological terms: the learner, through what they learn transforms their beliefs and becomes a more emancipated citizen of the world?
- Do you think of learning in psychological terms: learners are motivated, store facts in their minds, and create mental knowledge structures.

All of these ways of conceptualizing learning can be beneficial in understanding how students learn and what makes teaching effective. However, at their most fundamental and mechanistic level, teaching and learning are neurological phenomena arising from physical changes in the brain cells and connections; learning occurs through the modification of the brain's neural connections.

During the day, through discussions on the following topics during our sessions, we will explore what is known from research about the neurobiological basis of learning and explore how various teaching techniques might harness known neurological mechanisms to promote creativity, and the creation and retrieval of long-term memories. Each topic will explore ways to conceptualize teaching and learning, with an emphasis on the biological changes in the brain. Creativity with the curriculum will be "The Play". The BIG question or THEME will be "How do you conceptualize LEARNING?".

These sessions are designed for all educators (K-12), even though there will be some references to specific grade levels.

G21 A - Session title: Discover STEM Skills for Future Careers

Presenter: Anju Bajaj

Let's Talk Science

Level: Gr. 4-12

Location: Garden City Collegiate

Time: 9:00 – 10:15am

Session Description: STEM is everywhere in modern life and is transforming how we live, where we live, and how we earn a living. In a world that is increasingly driven by

innovation and technology, the demand for people who can fill STEM-related jobs will only continue to increase. Join this Let's Talk Science session to discuss the importance of STEM when students are considering their possible future career options. Discover the ways technology disrupts and changes the workplace and how to prepare students to solve current and future problems like climate change.

G22 A - Math in Nature using an Inquiry Approach

Presenter: Jennifer Tessier

Level: K-8

Location: Garden City Collegiate

Time: 9:00 – 10:15am

Session Description: Are you interested in connecting math with nature? Join us for an exciting Let's Talk Science session to review examples of mathematics in our natural world. Build your confidence by exploring mathematical concepts found in nature. Discover a learning strategy that can be scaffolded and used inside and outside the classroom. Examine opportunities for mathematics to be integrated across different subject areas to achieve various curriculum outcomes.

G23 B - Ready for Takeoff: How to Merge Hands-On STEM Curriculum with Drone Pilot Certification (AM)

Presenter: Mabini Joy Pagtakhan *Winnipeg Adult Education Centre*

Level: 9-12

Location: Garden City Collegiate

Time: 10:15 – 11:30am

Session Description: Mabini is a science educator with the Winnipeg Adult Education Center, where she developed a drone certification curriculum for her students. She has found many ways to incorporate drone based activities into her school's STEM programing. She will share her successes and advice on how you can use drones in your classes.

G24 B - Rocks and Tectonics

Presenter: Jeff Young (Department of Earth Sciences, University of Manitoba)

Level: 5-8

Location: Garden City Collegiate

Time: 10:15 – 11:30am

Session Description: All rocks contain stories that describe the formation and tectonic evolution of the Earth. This session will focus on the identification and distribution of different rocks and their importance in understanding tectonic activity through time.

G25 B - Grade 10 Astronomy Resources for the new curriculum

Presenter: Andrea Misner (Seven Oaks school Division)

Level: 9-12

Location: Garden City Collegiate

Time: 10:15 – 11:30am

Session Description: Bringing the Universe to your students with ready to go, student tested lesson plans, worksheets and projects using a remote telescope!

G26 B - The Thinking Classroom and Assessment

Presenter: Brian Dentry (MAPT, Perimeter Institute, STAM)

Level: K-12

Location: Garden City Collegiate

Time: 10:15 – 11:30am

****** This session is part of a series of 4 throughout the day, each with a different topic within the theme described below. ******

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These sessions are designed for all educators (K-12), even though there will be some references to specific grade

levels.

G27 B - Bunsen burner skills (repeat session)

Presenter: Roby Yeung

Level: 9-12

Location: Garden City Collegiate

Time: 10:15 – 11:30am

Session Description: How do students learn how to use a Bunsen burner in chemistry class? Through diagrams? Through explicit instructions? Through stations?

This session is to incorporate the global competencies in the new science curriculum by learning how we can have our students make their own personalized glass stirring rod while learning how to safely use and operate a Bunsen burner. You will learn how to safely cut glass tubing, design, and seal glass tubing to make your very own glass stirring rod. A discussion will follow on how we can incorporate the 6 global competencies in chemistry class.

G28 B - Zip, Zap, STEM: Using Improv To Energize Science Learning (AM)

Presenter: John Wren (STAM)

Level: 9 - 12

Location: Garden City Collegiate

Time: 10:15 – 11:30am

Session Description: Over the past few years, I have combined my passion for short-form improv with my science teaching practice to create highly engaging learning experiences. Join me for a fast-paced, hands-on session exploring how drama-inspired strategies can enhance science instruction. From quick introductory games to full-body simulations of concepts such as chemical reactions, mitosis, ecosystem interactions, and molecular behavior, participants will experience firsthand how improv can make abstract ideas tangible and memorable. Come ready to move, laugh, and learn while collecting adaptable activities that promote student engagement, scientific thinking, collaboration, and creativity in biology, chemistry, and general science classrooms. No improv experience required!

G29 B - Mtigwaaki: Exploring Forests Through a Two-Eyed Seeing Lens

Presenter: Peiki Loay (Hanover School Division)

Level: K-8

Location: Garden City Collegiate

Time: 10:15 – 11:30am

Session Description: This session introduces Two-Eyed Seeing (a concept originally brought forth by Elder Albert Marshall) as a lens for coming to know science from diverse perspectives. To illustrate how educators could weave between Indigenous and Western science knowledge

systems in the classroom, participants will sample from six rotation stations themed around forests. Through a playful and embodied exploration of texts, natural materials, and virtual spaces, this session aims to spark wonder and curiosity about what it might mean to be ‘among the trees.’ Educators will engage in conversations on how they might extend these provocations to their own classroom contexts. Participants should bring a device for accessing activity QR codes. Headphones are optional, but helpful.

G30 B - Baby Mammals and Their Microbes: Hands-on science lessons for Grades 1–3. (AM)

Presenter: Meghan Azad, Ph.D., Shayna Giesbrecht, Biorepository Lab Manager, Manitoba Interdisciplinary Lactation Centre (MILC), Rowan Shwaluk, M.Sc. Student, Department of Immunology, Isabelle Poulin, Ph.D. student, Community Health Sciences, Bridget McGann, Research Assistant and Knowledge Translation Consultant

Level: 1-3

Location: Garden City Collegiate

Time: 10:15 – 11:30am

Session Description: Normalizing breastfeeding begins in the classroom: “Baby Mammals and their Microbes” lesson plans for Grades 1-3.

"Baby Mammals and their Microbes" is a set of activities for Grades 1-3 that helps children explore the kingdoms of life and mammalian adaptations. It was developed as a collaboration between THRiVE Lab at the University of Manitoba and the Science Art and Writing Trust in the UK. The resources are comprised of games and activities to build science vocabulary, team working, numeracy, communication skills, and a greater awareness of the relationship between breastmilk, health and our gut microbes. The activities address outcomes across four of the five Strands of the renewed Manitoba science curriculum, with the densest coverage at Grade 3 (classification, life-cycle processes, and metric measurement), and for Grades 1 and 2, two hands-on learning activities that map directly to activities suggested by the curriculum.

"Baby Mammals and their Microbes" supports children in making informed decisions about their health as adults and prebunks health misinformation by normalizing breastfeeding before social stigma sets in. It also establishes breastfeeding as an essential component of human biology education. In this session, we will demonstrate the activities, and discuss tools for how teachers can answer off-the-wall student questions and tackle emotionally fraught topics in a competent, culturally-sensitive manner. We will also touch on how misinformation about infant feeding spreads in the digital age.

The activity pack comes with a set of PowerPoint slides with embedded videos, and printable resources, and may be completed in 1 hour and 20 minutes or five 20-minute sessions. Attendees will receive a handout visualizing how

various parts of the curriculum map to the renewed curriculum's strands and outcomes.

G31 B - Grade 10 Space Unit

Presenter: Heidi Werner (MAPT, St. James Collegiate)

Level: 9-12

Location: Garden City Collegiate

Time: 10:15 – 11:30am

Session Description: Grade 10 Space Unit

Participants will receive lessons, activities, demos, and assignments for the new Space Unit in the Science20S curriculum, modified materials included. Come and explore the wonders of space and learn how these materials can be used with your students.

ON-SITE HALF-DAY PM

Sessions labeled as CD run for the whole afternoon (1:00-3:30PM)

G32 CD - Laboratory Management 101 for Science Teachers (PM session)

Presenter: François Gauvin (Université de Saint-Boniface, retired) and Shannon Baxter (Associate Head, École George-McDowell)

Level: 9-12

Location: Garden City Collegiate

Time: 2 hours morning

Session Description:

- Are you a new Grade 7-12 level science teacher?
- Do you have old bottles of chemicals in your school storage area?
- Would you like to know more about management of chemicals and chemical safety at school?

This workshop will cover the knowledge and skills to acquire in terms of chemical products management and laboratory safety in schools. This is a starting point to support and assist teachers who are new to teaching science courses or who have questions about good usage and good storage of chemicals, and general chemical safety in their Grade 7-12 level schools.

Classification, storage and disposal of chemicals, along with several procedures to follow in case of incidents, will be covered. Complementarily, current Canadian chemical safety systems like WHMIS, TDGR, CCCR, and United States NFPA 704, will be discussed.

G33 CD - Overview of K-10 Renewed Science Curriculum (PM)

Presenter: Jason Braun, and Michelene Reiniger (Manitoba Education and Early Childhood Learning)

Level: General

Location: Garden City Collegiate

Time: 1:00 – 3:30pm

Session Description: Ready to bring Manitoba's renewed K–10 Science Curriculum to life in your classroom?

Join us for a dynamic 2.5-hour workshop designed to support educators in implementing the renewed curriculum with confidence.

During this interactive session, you will:

Gain a clear overview of the renewed K–10 Science Curriculum and its alignment with the Manitoba Framework for Learning.

Discover how science literacy, global competencies, and the five curriculum strands support student learning.

Use the Learning Experience Planning Template to design learning experiences and assessment practices in support of meaningful, coherent, and responsive science learning.

Examine the Evaluation and Communication of Student Learning, including the revised science report card categories.

Consider practical classroom applications and implementation strategies.

Leave with actionable insights and renewed confidence for the science learning ahead.

Come ready to collaborate, reflect, and be inspired by the possibilities of science education in Manitoba.

G34 CD - Project WET Foundations of Water Education and Water in Earth Systems K–12 Certification Workshop

Presenter: Jenna Forslund and Jennifer Engbrecht (Project WET)

Level: K-12

Location: Garden City Collegiate

Time: 1:00-3:30pm

Session Description: Explore Project WET's Foundations of Water Education and Water in Earth Systems workshop through engaging, interactive, and inquiry-based learning experiences designed for K–12 teachers. This session features hands-on, ready-to-use lesson plans that connect water to Earth systems, environmental literacy, outdoor learning, and cross-curricular outcomes.

The Foundations of Water Education guide focuses on building water literacy. The guide is designed to support and complement other Project WET guides by providing foundational activities that help introduce new topics and concepts, deepen student understanding, and extend learning before or after other activities, or function as a standalone guide.

Building on these foundational concepts, the Water in Earth Systems guide focuses on the role of water within Earth's interconnected systems, including the atmosphere, hydrosphere, geosphere, and biosphere.

Through collaborative activities and experiential learning, teachers will explore water science concepts while discovering practical strategies to support diverse learning environments and integrate local knowledge, place-based learning, Indigenous perspectives, and community connections.

Teachers will leave with practical classroom resources from both guides, adaptable teaching strategies, and engaging activities that can be implemented immediately in both indoor and outdoor learning environments.

G35 CD - The Challenge of Quantum Reality (PM)

Presenter: Noah Joseph

Level: 9-12

Location: Garden City Collegiate

Time: 1:00 – 3:30pm

Session Description: I will be going through the Perimeter Exploration: The Challenge of Quantum Reality. I will

walk through the activities step by step to show how this activity relates to the grade 11 physics curriculum.

ON-SITE 75MIN. PM SESSIONS

G36 C - Ready for Takeoff: How to Merge Hands-On STEM Curriculum with Drone Pilot Certification (PM)

Presenter: Mabini Joy Pagtakhan *Winnipeg Adult Education Centre*

Level: 9-12

Location: Garden City Collegiate

Time: 1:00 – 2:15pm

Session Description: Mabini is a science educator with the Winnipeg Adult Education Center, where she developed a drone certification curriculum for her students. She has found many ways to incorporate drone based activities into her school's STEM programing. She will share her successes and advice on how you can use drones in your classes.

G37 C - The Thinking Classroom with Physics and STEM

Presenter: Brian Dentry (MAPT, Perimeter Institute, STAM)

Level: K-12

Location: Garden City Collegiate

Time: 9:00 – 10:15am

**** This session is part of a series of 4 throughout the day, each with a different topic within the theme described below.****

Session Description: Human perception is frightfully narrow: We believe we see the whole when in fact we've seen a fraction.

Why Are Our Students in Our Classroom?

How do YOU conceptualise teaching & learning?

- Do you think of learning as a contractual agreement: the teacher performs certain actions to facilitate learning, and the student, in turn, explicitly or implicitly promises to behave in ways to receive that learning?
- Do you think of learning in sociological terms: the learner, through what they learn transforms their beliefs and becomes a more emancipated citizen of the world?
- Do you think of learning in psychological terms: learners are motivated, store facts in their minds, and create mental knowledge structures.

All of these ways of conceptualizing learning can be beneficial in understanding how students learn and what makes teaching effective. However, at their most fundamental and mechanistic level, teaching and learning are neurological phenomena arising from physical changes in the brain cells and connections; learning occurs through the modification of the brain's neural connections.

During the day, through discussions on the following topics

during our sessions, we will explore what is known from research about the neurobiological basis of learning and explore how various teaching techniques might harness known neurological mechanisms to promote creativity, and the creation and retrieval of long-term memories. Each topic will explore ways to conceptualize teaching and learning, with an emphasis on the biological changes in the brain. Creativity with the curriculum will be "The Play". The BIG question or THEME will be "How do you conceptualize LEARNING?".

These sessions are designed for all educators (K-12)

G38 C - Math in Nature using an Inquiry Approach

Presenter: Jennifer Tessier

Level: K-8

Location: Garden City Collegiate

Time: 1:00 – 2:15pm

Session Description: Are you interested in connecting math with nature? Join us for an exciting Let's Talk Science session to review examples of mathematics in our natural world. Build your confidence by exploring mathematical concepts found in nature. Discover a learning strategy that can be scaffolded and used inside and outside the classroom. Examine opportunities for mathematics to be integrated across different subject areas to achieve various curriculum outcomes.

G39 C - What's the Dirt on Soil? Let's talk dirty!

Presenter: Kent Lewarne (Nutrients for Life Canada)

Level: General

Location: Garden City Collegiate

Time: 1:00 – 2:15pm

Session Description: Come and enjoy a number of activities about Manitoba Soils, great for all age levels! Also good for Manitoba Envirothon Training.

G40 C - Rocks, Smart Phones and Earth Resources

Presenter: Jeff Young (Department of Earth Sciences, University of Manitoba)

Level: 9-12

Location: Garden City Collegiate

Time: 1:00 – 2:15pm

All rocks contain stories that describe the formation and evolution of the Earth and its resources. This session will focus on natural resources contained within rocks including energy resources, Earth materials and water.

G41 C – School Energy Review

Presenter: Kris Garner (Efficiency Manitoba - Generation-E)

Level: 6-12

Location: Garden City Collegiate

Time: 1:00 – 2:15pm

Session Description: Teachers will learn how to conduct a School Energy Review workshop with their students. Lessons plans are provided. They will learn how to show their students how to use a variety of measurement tools to identify energy-consuming products, technologies and equipment in their school and determine how to reduce energy use.

Information about Generation-E can be found at <https://generation-e.ca/>

G42 C - Indigenous Science Perspectives

Presenter: Christine Wren and Jen Piasecki (MAPT)

Level: 9-12

Location: Garden City Collegiate

Time: 1:00 – 2:15pm

Session Description: This session will focus on the new Science curriculum through an Indigenous lens and how to cultivate authentic learning experiences. Topics include the Gr. 9 Genetics and Gr. 10 Ecology units.

G43 C - Manitoba Envirothon: Connections to the Manitoba Framework for Learning (PM)

Presenter: Julia Burcar, Manitoba Association of Watersheds, and Jacqueline Monteith, Frontier School Division

Level: 9-12

Location: Garden City Collegiate

Time: 1:00 – 2:15pm

Session Description: The Manitoba Envirothon is a high school competition where teams of 5 students learn all about Wildlife Ecology, Aquatic Ecology, Soil Ecology, Plant Ecology, and a theme which changes annually.

This interactive session will showcase how students can earn credits for participation, links to the new Manitoba Science curriculum, connections to the Global Competencies, and how a greater focus on Indigenous perspectives is a priority. In addition, learn about the vast resources available to teachers who are looking to connect more to land-based learning in a localized, authentic context.

G44 D - Planet Earth: Looking at Grade 8 curriculum and more

Presenter: Brian Dentry (MAPT, Perimeter Institute, STAM)

Level: K-12

Location: Garden City Collegiate

Time: 9:00 – 10:15am

**** This session is part of a series of 4 throughout the day, each with a different topic within the theme described below.****

Session Description: Human perception is frightfully

narrow: We believe we see the whole when in fact we've seen a fraction.

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All of these ways of conceptualizing learning can be beneficial in understanding how students learn and what makes teaching effective. However, at their most fundamental and mechanistic level, teaching and learning are neurological phenomena arising from physical changes in the brain cells and connections; learning occurs through the modification of the brain's neural connections.

During the day, through discussions on the following topics during our sessions, we will explore what is known from research about the neurobiological basis of learning and explore how various teaching techniques might harness known neurological mechanisms to promote creativity, and the creation and retrieval of long-term memories. Each topic will explore ways to conceptualize teaching and learning, with an emphasis on the biological changes in the brain. Creativity with the curriculum will be "The Play". The BIG question or THEME will be "How do you conceptualize LEARNING?".

These sessions are designed for all educators (K-12)

G45 D - Connect the Drops! - Watershed Trivia!

Presenter: Kent Lewarne (Manitoba River Watch)

Level: General

Location: Garden City Collegiate

Time: 2:15 – 3:30pm

Session description: This presentation will focus on the importance of watershed education as the only infrastructure that will shift the conversation from "the lake has a problem" to "the watershed has a solution". Join us to discuss our amazing Lake Winnipeg Basin!

G46 D - Zip, Zap, STEM: Using Improv To Energize Science Learning (PM)

Presenter: John Wren (STAM)

Level: 9 - 12

Location: Garden City Collegiate

Time: 2:15 – 3:30pm

Session Description: Over the past few years, I have combined my passion for short-form improv with my science teaching practice to create highly engaging learning experiences. Join me for a fast-paced, hands-on session exploring how drama-inspired strategies can enhance science instruction. From quick introductory games to full-body simulations of concepts such as chemical reactions, mitosis, ecosystem interactions, and molecular behavior, participants will experience firsthand how improv can make abstract ideas tangible and memorable. Come ready to move, laugh, and learn while collecting adaptable activities that promote student engagement, scientific thinking, collaboration, and creativity in biology, chemistry, and general science classrooms. No improv experience required!

G47 D - Physics Teachers' Favourites

Presenter: Trevor Friesen-Stoesz, and Heidi Werner, (MAPT)

Level: 9-12

Location: Garden City Collegiate

Time: 2:15 – 3:30pm

Session Description: Join us for physics lab demonstrations and activities that are tried-and-true classroom favourites. This session will provide information about modules and equipment you can incorporate into your own classroom.

G48 D - Baby Mammals and Their Microbes: Hands-on science lessons for Grade 1-3 (PM)

Presenter: Meghan Azad, Ph.D., Shayna Giesbrecht, Biorepository Lab Manager, Manitoba Interdisciplinary Lactation Centre (MILC), Rowan Shwaluk, M.Sc. Student, Department of Immunology, Isabelle Poulin, Ph.D. student, Community Health Sciences, Bridget McGann, Research Assistant and Knowledge Translation Consultant

Level: 1-3

Location: Garden City Collegiate

Time: 2:15 – 3:30pm

Session Description: Normalizing breastfeeding begins in the classroom: "Baby Mammals and their Microbes" lesson plans for Grades 1-3.

"Baby Mammals and their Microbes" is a set of activities for Grades 1-3 that helps children explore the kingdoms of life and mammalian adaptations. It was developed as a collaboration between THRiVE Lab at the University of Manitoba and the Science Art and Writing Trust in the UK. The resources are comprised of games and activities to build science vocabulary, team working, numeracy, communication skills, and a greater awareness of the relationship between breastmilk, health and our gut microbes. The activities address outcomes across four of the five Strands of the renewed Manitoba science curriculum, with the densest coverage at Grade 3 (classification, life-cycle processes, and metric measurement), and for Grades 1 and 2, two hands-on

learning activities that map directly to activities suggested by the curriculum.

"Baby Mammals and their Microbes" supports children in making informed decisions about their health as adults and prebunks health misinformation by normalizing breastfeeding before social stigma sets in. It also establishes breastfeeding as an essential component of human biology education. In this session, we will demonstrate the activities, and discuss tools for how teachers can answer off-the-wall student questions and tackle emotionally fraught topics in a competent, culturally-sensitive manner. We will also touch on how misinformation about infant feeding spreads in the digital age.

The activity pack comes with a set of PowerPoint slides with embedded videos, and printable resources, and may be completed in 1 hour and 20 minutes or five 20-minute sessions. Attendees will receive a handout visualizing how various parts of the curriculum map to the renewed curriculum's strands and outcomes.

VIRTUAL SESSIONS

These sessions will be held virtually, you can attend them at your own locations or on site with your own device (please bring headphones, as quiet spaces are limited). Close to the event you will get an email with the presentation links.

V1 A - Welcome to Let's Talk Science (Virtual) (AM)

Presenter: Tamara Smith (School Board Liaison, Let's Talk Science) (Let's Talk Science)

Level: General

Location: Virtual

Time: 9:00 – 10:15am

Session description: Come learn about Let's Talk Science and how we can support you and your students with free programming and resources.

We will explore some fun, free, low-prep, and easy-to-implement K-12 STEM programming and resources for your classrooms. Discover events for students, National STEM Projects, career and competition opportunities, and curriculum-aligned resources that are readily accessible on our website.

We will also dive deeper into our professional learning micro-credentialling program, Learning Pathways, where educators of all levels can participate in a professional learning journey that builds towards certification in STEM-based concepts. Using a flexible approach that meets your unique needs as an educator, we will show you how to get started on your learning journey today!

Let's Talk Science is a national charitable organization that offers free, curriculum-aligned, online educational programs and resources in K–12 science, technology, engineering, and mathematics (STEM) subjects for both students and educators in English and French.

www.letstalkscience.ca

V2 A - Canadian Museum of Nature Virtual Workshop Demo (Virtual) (AM)

Presenter: Ruth Bryce (Canadian Museum of Nature)

Level: General

Location: Virtual

Time: 9:00 – 10:15am

The Canadian Museum of Nature is Canada's national natural-history museum, that aims to inspire curiosity and understanding of the natural world through evidence-based research, rich collections, and curriculum-linked educational programs. Our virtual educational experiences offer fun and interactive sessions, connecting students with knowledgeable museum interpreters in real-time interactions.

This session will showcase our virtual workshops with a live demonstration, as well as a Q&A section with staff about our virtual workshops. Workshops highlighted may include:

- Arctic Ecosystems: Learn about Canada's North and the role humans play in sustaining ecosystems.

- Exploring Rocks and Minerals: Learn about the stories behind rocks and minerals.

- NEW! Water Systems: Learn about the importance of freshwater for us and our ecosystems.

V3 B - Curiosity in Action: Building Deeper Understanding Through Simulation and Inquiry-Based Learning (Virtual) (AM)

Audience: Grades 5–8

Presenter: Jessica Barrett (Explore Learning)

Level: 5-8

Location: Virtual

Time: 10:15 – 11:30pm

Session Description: Today's middle years science classrooms must spark curiosity, encourage exploration, and help students make sense of the world around them. This interactive session explores how simulation-based inquiry can support Grades 5–8 students in investigating scientific phenomena, asking meaningful questions, analyzing evidence, and developing deeper conceptual understanding through hands-on exploration and discovery.

Participants will experience engaging, curriculum-connected virtual science simulations designed to support implementation of the new Manitoba science curriculum while fostering student curiosity, creativity, and scientific thinking. Through interactive simulations and visual models, educators will explore strategies for making abstract and difficult concepts more accessible and engaging across life, physical, earth, and space science topics.

The session will also highlight practical approaches for supporting classroom discussion, differentiation, assessment, and student engagement through inquiry-driven learning experiences. Educators will leave with ready-to-use ideas and strategies that help students think critically, explore confidently, and build understanding like young scientists.

V4 A - More Feedback for Students. Less Grading Time for Teachers (Virtual) (AM):

Presenter: Ash Misquith (Swift Grade)

Level: 9-12

Location: Virtual

Time: 9:00 – 10:15am

Session Description: At first glance, AI grading sounds like it's about saving teachers time and it does but that's not the real story. This session is about giving students and parents something they rarely get: rich, specific feedback

on every question, from the assessments teachers already give. The kind of feedback any teacher would love to write for every student on every question, if only there were enough hours in the day.

We'll show how to take that stack of papers sitting on your desk, scan it on the school photocopier, and upload it no special answer sheets, no new test format. SwiftGrade returns detailed per-question feedback the teacher reviews and owns, plus a clear class-wide picture of where students struggled.

Because it works on real, handwritten paper done in class, it also sidesteps the growing problem of students using AI to do the work for them — the student's thinking stays authentic, while the teacher gets back hours and far better feedback to share.

If you want your students to submit their work online, we support that as well.

We'll walk through the full workflow live, look at real analysis output, and discuss how teachers can use it to group students and target their review.

V5 CD - Indigenous Perspectives in Science: Practical Ideas for Classroom Implementation (Virtual) (PM)

Presenter: Lilian Pozzer and Amy Farrell (Faculty of Education, University of Manitoba)

Level: K-8

Location: Virtual

Time: 1:00-4:00pm

Session Description: In this hybrid workshop, in-person participants will engage in several practical activities designed to explore Indigenous ways of knowing and being in the context of the new science curriculum. Activities will encompass the production and use of different artifacts following Indigenous traditional knowledge, intersecting with K-8 science. Online participants will be invited to engage in several digital and practical tasks they will be able to complete remotely, and interact with the in-person group. A digital booklet of activities and resources will be shared with all participants.

V6 C - Welcome to Let's Talk Science (Virtual) (PM)

Presenter: Tamara Smith (School Board Liaison, Let's Talk Science) (Let's Talk Science)

Level: General

Location: Virtual

Time: 1:00 – 2:15pm

Session description: Come learn about Let's Talk Science and how we can support you and your students with free programming and resources.

We will explore some fun, free, low-prep, and easy-to-implement K-12 STEM programming and resources for

your classrooms. Discover events for students, National STEM Projects, career and competition opportunities, and curriculum-aligned resources that are readily accessible on our website.

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www.letstalkscience.ca

V7 C - More Feedback for Students. Less Grading Time for Teachers (Virtual) (PM)

Presenter: Ash Misquith (Swift Grade)

Level: 9-12

Location: Virtual

Time: 1:00 – 2:15pm

Session Description: At first glance, AI grading sounds like it's about saving teachers time and it does but that's not the real story. This session is about giving students and parents something they rarely get: rich, specific feedback on every question, from the assessments teachers already give. The kind of feedback any teacher would love to write for every student on every question, if only there were enough hours in the day.

We'll show how to take that stack of papers sitting on your desk, scan it on the school photocopier, and upload it no special answer sheets, no new test format. SwiftGrade returns detailed per-question feedback the teacher reviews and owns, plus a clear class-wide picture of where students struggled.

Because it works on real, handwritten paper done in class, it also sidesteps the growing problem of students using AI to do the work for them — the student's thinking stays authentic, while the teacher gets back hours and far better feedback to share.

If you want your students to submit their work online, we support that as well.

We'll walk through the full workflow live, look at real analysis output, and discuss how teachers can use it to group students and target their review.

V8 C - Inquiring Teachers' Perspective of New Manitoba K-10 Science Curriculum: Challenges, Successes and Opportunities for Professional Growth (Virtual) (PM)

Presenter: Dr. Latika Raisinghani (Assistant Professor, University of Winnipeg; Adjunct Professor, University of Manitoba)

Level: K-10

Location: Virtual

Time: 1:00 – 2:15pm

Session Description: In this interactive session, we will share key learnings from a provincially funded research project that inquires into Manitoba teachers' experiences of piloting and voluntary implementation of new K-10 science curricula. The focus will be on discussing the challenges and successes experienced by the participating teachers around various dimensions of Manitoba's new science curriculum. Based on the key themes emerged, we will discuss potential opportunities for teachers' professional development around specific key strands that may include science identity, Nature of Science, Practical Science, and Indigenous People within the Natural World, as well as global competencies as informed by the Framework of Learning.

V9 C - Curiosity in Action: Building Deeper Understanding Through Simulation and Inquiry-Based Learning (Virtual) (PM)

Audience: 9-12

Presenter: Jessica Barrett (Explore Learning)

Level: 9-12

Location: Virtual

Time: 1:00 – 2:15pm

Session Description: Today's science classrooms must do more than deliver content. They must develop curious, analytical, and evidence-driven scientific thinkers. This interactive session explores how simulation-based inquiry can help Grades 9–12 students actively investigate scientific phenomena, test ideas, analyze data, and build deeper conceptual understanding through exploration and discovery.

Participants will experience engaging, curriculum-connected science investigations designed to support implementation of the new Manitoba science curriculum while fostering student curiosity, creativity, and critical scientific thinking. Through interactive simulations and visual models, educators will explore strategies for making complex and abstract concepts more accessible across biology, chemistry, physics, and earth science classrooms.

The session will also highlight practical approaches for supporting classroom discussion, differentiation,

assessment, and student engagement through inquiry-driven learning experiences. Educators will leave with ready-to-use ideas and strategies that help students think, question, and investigate like scientists.

V10 D - Polar Bears in the Classroom (Virtual) (PM)

Presenter: Kayla McCurry (Polar Bears International)

Level: General

Location: Virtual

Time: 2:15 – 3:30pm

Session Description: From cub to parent, the polar bear lives an extraordinary life that's uniquely adapted to Arctic sea ice. Polar Bears International hosts free webcasts, teaching and learning materials, and fun activities for classrooms, so you and your students can follow your curiosity and be inspired to make a difference. Join us for a session about Manitoba's charismatic bear, the important science and innovations that go into understanding their ecology, ways to connect your students to the polar bear story, and the myriad free resources available to you as an educator!

<https://polarbearsinternational.org/education-center/>

V11 D - Exploring the Nature of Science: Using Universal Design of Learning to Promote Student Learning (Virtual) (PM)

Presenter: Dr. Latika Raisinghani (Assistant Professor, University of Winnipeg; Adjunct Professor, University of Manitoba)

Level: K-4

Location: Virtual

Time: 2:15 – 3:30pm

Session description: In this interactive presentation, we will share the importance of teaching the Nature of Science (NOS) to promote scientific literacy as envisioned in the science education literature and Manitoba's new science curriculum, and how it can be taught in an engaging manner through using the Universal Design of Learning (UDL) framework to promote student learning. The focus will be on sharing the key aspects of NOS and UDL principles and provide examples of utilizing these in K-4 Manitoba classrooms.

V12 D - Introducing Shad Canada

Presenter: Ebony Demers(Shad Canada)

Level: 9-11

Location: Garden City Collegiate

Time: 2:15 – 3:30pm

Session Description: Shad is a STEAM and entrepreneurship program that runs every summer in the month of July. The program works to ignite curiosity, build

confidence, and prepare students in Grades 10 and 11 to thrive in a fast-changing world. In this session, we will share more about why Shad could be a great fit for your students, how they can apply for the program, and answer questions you might have.