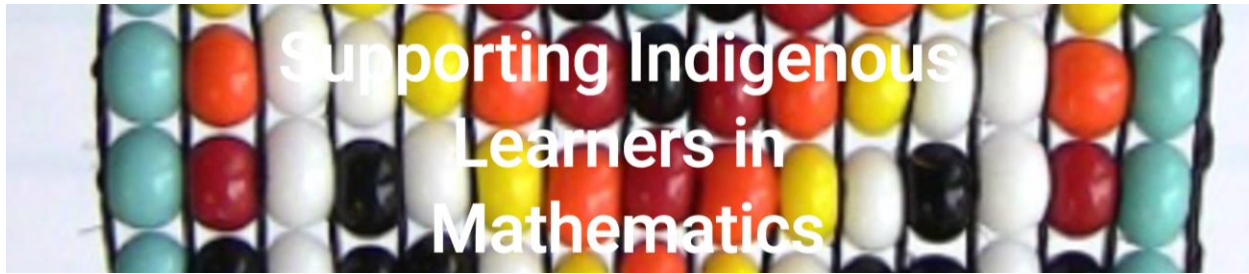


Supporting Indigenous Learners, in Mathematics



October 5, November 9, December 7, 2017 & January 11, 2018 1:00pm – 3:00pm
Suggested Audience: Teachers (K-8); Indigenous Consultants/Coordinators; Math Facilitators/Consultants/Coaches; Principals/Vice-Principals; Indigenous Community Partners (ex., Elder, Knowledge Keeper, Artist, Education Liaison, etc.) Participants are encouraged to register as a team with Indigenous community partners.

Note: This is a new series for Fall 2017.

Details

This series focuses on a multi-year participatory community-based research project that has brought together artist, educators, Elders and community members of Pikwakanagan First Nation, non-Indigenous educators, and First Nations and non-Indigenous students to explore the mathematics inherent in First Nations cultural practices. Participants will learn through the lens of a shared journey done ‘in relation’ and discover the power of placing Indigenous culture at the heart of mathematics teaching and learning. As researchers, teachers, artists, and students have done, it is hoped that participants will broaden their understanding of culture and what it means to ‘do math’ and ‘think mathematically’.

In this series participants will develop an understanding of:

- The project Protocols and Framework for engagement and collaborative work with Indigenous partners
 - Importance of doing the work “in a good way”
 - Components of a cyclical and iterative process
 - Ethnomathematics
- Learning Mathematics through culture to develop mathematical and cultural identity
 - Authentic culturally responsive teaching and learning
 - Robust mathematical thinking
 - Connections to the Ontario mathematics curriculum
- The project in relation to the FNMI Framework
 - Reflect on individual local context

Session Descriptions

October 5, 2017 1:00 – 3:00pm

In this session, we will focus on the importance of relationships and the necessity for a framework for engagement and collaborative work that upholds the UN Declaration on the Rights for Indigenous Peoples and The Truth and Reconciliation Commission: Calls to Action. Through video, tasks and discussions, we will explore the design and creation of Algonquin bone pipe bracelets and looming in Primary classrooms and unpack how these activities within a cultural context support students' mathematical thinking.

Emphasis will be placed on Early Number Sense and Operation, unitizing, connections between spatial and numeric representations such as composing and decomposing quantity, patterning, algebraic balancing and the introduction to multiplicative thinking.

November 9, 2017 1:00 – 3:00pm

Session two will focus on community engagement and protocols when working with First Nations communities, specifically the importance and role of tobacco, story and beads/beading. The co-plan and co-teach aspects of the framework for engagement will be discussed in detail and project partners from the Algonquin community of Pikwakanagan will share their views and key learnings from a leadership perspective within the work. Through tasks, videos and discussion we will continue to look at bead looming with a focus on Grade 3. Collectively we will look at the progression of complexity of thinking from early primary and the connection between repeating and growing patterns. We will further unpack thinking in relation to Spatial Reasoning and Number Sense, specifically multiplicative thinking with a focus on *unitizing*, "groups of" language.

December 7, 2017 1:00 – 3:00pm

We will go deeper into the robust mathematical thinking in Grade 3 related to bead looming in this third session. The focus will be on proportional reasoning, transformations, and the transition from patterning to algebraic thinking with an emphasis on unitizing, multiplicative thinking, generalizing and making far predictions. Supporting community goals for the revitalization of Algonquin culture and language, as well as how Indigenous pedagogical approaches benefit both Indigenous and non-Indigenous students' mathematical learning will be explored and discussed.

January 11, 2018 1:00 – 3:00pm

In this final session of the series, we will transition the focus from Grade 3 to Grade 6 mathematical thinking in relation to bead looming with an emphasis on algebra, proportional, and spatial reasoning. The central role of design will be explored through a 20 x 20 template. The sharing and re-consulting phases of the framework will be emphasized and the impact on student mathematical and cultural identity explored and celebrated.