[Computational Thinking in Mathematics Education – Wellington CDSB Site]
CoP ANNUAL IMPLEMENTATION AND ANNUAL REPORT COMPONENTS
November 1, 2016 – August 31, 2017

PRINCIPLES
How did the CoPs address the 3 principles of the MKN?

Addressing Teacher Identified Needs
- Annual surveys of, and annual interviews with, teachers and school (CoP)
  - Survey questions about identified needs
  - Annual feedback from teachers involved
- Assess the extent to which CoP activities addressed teacher identified needs reported in the annual survey (CoP)
  - Survey questions about the alignment of the teacher-identified needs to CoP activities
- Assess the extent to which teachers, both those in the CoP and beyond the CoP, were involved in CoP activities (CoP)
- Membership of the CoP to be specified
- Instances of annual collaboration and planning meetings will be reported

Implementation Plan

Anticipated Outcomes (See Appendix A)	Activities (e.g., events, resource development, meetings etc.)	Anticipated Outputs (if applicable)	Number and type of participants (if applicable)	Anticipated Timeline	Monitoring and Evaluation (Required: Surveys and interviews for teachers, parents, etc.)
#1	Teachers identify student and pedagogical needs.	Organized list of needs.	1 teacher from each of the 18 elementary schools.	Elementary teachers released twice in April-June for full-day workshops to co-plan and reflect.	Teachers surveyed at each session Ideas shared in group discussions recorded.
	Teachers participate in co-planning lesson plans.	Lesson plans.	1 math and 1 computer science teacher from each of 4 HS.	HS teachers released 3 full days for June and July workshops (paid supply rate) to plan math / computer science integrated lessons.	

Report

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Changing Attitudes in Mathematics
- Show evidence that the work of the CoP has a mathematical focus that is conceptually rich for students and teachers – each CoP identifies such activities
- The design of student experiences creates opportunities for students to share their learning (especially in the form of mathematical surprises and conceptual insights) with family, friends, and the wider community
  - Annual survey will also include data about the extent to which activities of the CoP engaged family and the wider community (CoP)
- Any instances of student-level impact will be reported (CoP)
  - Survey questions about attitudes toward mathematics (drawn potentially from EQAO questions)
- Evidence of artifacts (actionable resources, case stories, etc.) that were shared on the MKN website that reflect the above criteria
  - Data collected on number of artifacts created and shared

Implementation Plan

Anticipated Outcomes (See Appendix A)	Activities (e.g., events, resource development, meetings etc.)	Anticipated Outputs (if applicable)	Number and type of participants (if applicable)	Anticipated Timeline	Monitoring and Evaluation (Required: Surveys and interviews for teachers, parents, etc.)
#1	Lesson plan writing at workshops.	Lesson plans offer surprise and conceptual insight, and opportunities to share their learning with family, peers, and the wider community.	18 elementary school teachers. 8 HS teachers.	April-July	List of lesson plans.
#6	Lesson plan writing adds home connections	Home connections made. Students share learning at home; parents return feedback to teacher.	18 elementary school teachers.	April-July	Students and parents surveyed in June.
#3	Sharing of classroom-based artefacts	Classroom-based artefacts shared on MKN web-site and at teachontario.ca.	18 elementary school teachers.	April-August	List of shared artefacts.

Report

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Fostering Inclusion
- Annual surveys of, and annual interviews with, teachers and school (CoP), compiled annually (MKN). Survey diverse groups engaged in the activities (CoP)
- Report on how the design of student experiences foster differentiated learning
- Differentiation levels of artifacts and quantity of artifacts reported. Sow evidence that the design of student experiences fosters differentiated learning: for example, student experiences have a low floor (allowing engagement with minimal prerequisite knowledge) and a high ceiling (offering connections to more complex relationships and more varied representations).

Implementation Plan

Anticipated Outcomes (See Appendix A)	Activities (e.g., events, resource development, meetings etc.)	Anticipated Outputs (if applicable)	Number and type of participants (if applicable)	Anticipated Timeline	Monitoring and Evaluation (Required: Surveys and interviews for teachers, parents, etc.)
#4	Lesson plan writing at workshops.	Lesson plans promote differentiated learning: a low floor allows students to engage with minimal prerequisite knowledge and a high ceiling offers opportunities to investigate more complex relationships and varied representations.	18 elementary school teachers. 8 HS teachers.	April-July	List of lesson plans.
#5	Lesson plan writing at workshops.	CoP members' work in First Nations communities will inform lesson plans.	18 elementary school teachers.	April-July	List of lesson plans.

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ACTIVITIES/OUTCOMES
What activities have the CoPs engaged in to achieve network outcomes through their work?

CoPs will produce/report on the following annually:

Resource Production
1. Actionable evidence-informed, differentiated resources
   - Lesson plans/supporting resources
   - One case study/CoP
   - One research mini/CoP
2. Research Syntheses
   - One plain language summary/CoP

Implementation Plan

Anticipated Outcomes (See Appendix A)	Activities (e.g., events, resource development, meetings etc.)	Anticipated Outputs (if applicable)	Number and type of participants (if applicable)	Anticipated Timeline	Monitoring and Evaluation (Required: Surveys and interviews for teachers, parents, etc.)
#6	Lesson plans	Compiled and shared on the MKN website.	18 elementary school teachers. 8 HS teachers.	By end of August.	List of lesson plans.
#6	Documentary	One, for teachontario.ca.	2-4 teachers.	By end of August.	Documentary reviewed by CoP co-leads.
#6	Research mini	One, posted on MKN website.	2-4 teachers.	By end of August.	Research mini reviewed by CoP co-leads.
#6	Plain language research summary.	Posted on MKN website.	1 research assistant.	Shared on MKN website by end of June. Drafts shared with CoP members as completed.	Research summary reviewed by CoP co-leads.

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Capacity Building

1. Networking and scaling up (meetings, conferences, additional funding, etc.)
   - Number of first-time teacher participants
   - Number of teacher participants who have participated in other provincial initiatives beyond CoPs
   - Number of extended projects
   - Number of potential leveraging grants
2. CoP-led workshops (4 annually)
   - Number of teacher participants
   - Number of math-teacher lead participants
   - Number of administrator participants
   - Number of participants outside of the CoP
   - Overall number registered to attend

Implementation Plan

Anticipated Outcomes (See Appendix A)	Activities (e.g., events, resource development, meetings etc.)	Anticipated Outputs (if applicable)	Number and type of participants (if applicable)	Anticipated Timeline	Monitoring and Evaluation (Required: Surveys and interviews for teachers, parents, etc.)
#6	18 elementary teachers released 3 full day workshops.	Lesson plans	18 elementary teachers	April-June	List of lesson plans.
#6	8 HS teachers released 3 full days for June and July workshops (paid supply rate) to plan math / computer science integrated lessons.	Lesson plans	8 HS teachers	June-July	List of lesson plans.
#6	Funds allotted to support participation from other school districts in CoP workshops. [6 release days]	Share CoP ideas. Facilitate networking and capacity building.	3 elementary or 2 HS teachers	April-July	List of lesson plans.
#6	CoP members present at OAME 2017; and at events in other school districts.		2 CoP members	April-July	List of presentations.

Report

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Knowledge Dissemination
1. Arts-informed knowledge dissemination
   - One story-based research mini
   - Up to one research song
   - Post-concert/activity surveys
2. TeachOntario
   - CoPs utilize TeachOntario as a digital space for KM and collaboration – report on number of instances of collaboration
   - CoPs make use of existing resources available on TeachOntaio – report on number of artifacts posted
3. Publications
   - One article/CoP for each of the target audiences (practitioners, scholarly community)
4. Conferences
   - One conference/CoP per year

Implementation Plan

Anticipated Outcomes (See Appendix A)	Activities (e.g., events, resource development, meetings etc.)	Anticipated Outputs (if applicable)	Number and type of participants (if applicable)	Anticipated Timeline	Monitoring and Evaluation (Required: Surveys and interviews for teachers, parents, etc.)
#2	Sharing of classroom-based artefacts.	Lesson plans, documentary and research mini will share new practice-based knowledge.	18 elementary school teachers. 8 HS teachers.	April-August	List of shared resources.
#6	Sharing of research summary.	Research summary posted on MKN website.	1 research assistant.	June-August	Research summary reviewed by CoP co-leads.
#6	Funds allotted to support participation from other school districts in CoP workshops. [6 release days]	Share CoP ideas. Facilitate networking and capacity building.	3 elementary or 2 HS teachers	April-July	List of lesson plans.
#6	CoP members present at OAME 2017; and at events in other school districts.		2 CoP members	April-June	List of presentations.

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ADDITIONAL INFORMATION

1. List and attach copies of any other relevant final documents or other products including marketing and promotional materials; media coverage; developed resources; testimonials; participant feedback, surveys, analysis, and other performance measurement tools/mechanisms, and so forth, that demonstrate the success and achievements of the CoP.
2. List any adjustments to the annual knowledge mobilization plans.
3. Highlight some promising practices that have shown evidence of improving mathematics outcomes for students.
4. Provide any OTHER information that may be relevant to this report and/or demonstrate the success of the CoP.
5. Provide details of any challenges/barriers faced while implementing CoP activities or working towards achieving network outcomes. Include steps taken to address them. Highlight issues of continuing concerns and potential solutions to them.
6. Lessons Learned: Based on your experience in implementing CoP activities and working towards achieving network outcomes, provide details on what can or should be done differently and why.

<u>Report</u>

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Appendix A
Anticipated Outcomes

1. Increased awareness, understanding, use and sharing of evidence-informed practices for mathematics by engaging teachers in co-designing mathematical learning experiences for students that offer surprise and conceptual insight, and opportunities to share their learning with family, peers, and the wider community, changing mindsets around professional learning and attitudes towards mathematics;
2. Enhanced capacity of school districts, organizations and universities in Ontario to collaborate, to access existing, as well as generate new, evidence-based knowledge that can positively impact the teaching and learning of mathematics, and efficiently meet the goals and directions of Ontario curriculum and policy;
3. Increased collaboration, partnerships, and networking between and among the Ministry, organizations, communities, networks and associated communities of practice across the education sector;
4. Improved student engagement, and equity of outcomes and well-being for marginalized students by enhancing learning and participation opportunities;
5. Advanced mathematics learning for First Nations, Métis and Inuit students, built on ways that have been identified through traditional technologies and design, as well as expanding the lens of educators to deepen their understanding of the benefits of integrating Indigenous "ways of knowing" into their practice; and
6. Sustained growth, in breadth and depth, of networks that provide evidence-based knowledge sharing to inform mathematics program, policy, and practice, based on existing and other sources of funding.