Peterborough Victoria Northumberland and Clarington Catholic District School Board

MATH ACTION PLAN

MONITORING MOMENT

"**Monitoring** is the ongoing gathering, reviewing and assessing of information to track and document progress towards achieving results and goals." *Adapted from Utilization Focused Evaluation, M. Patton*

GOAL:
If all educators foster a growth mindset in Math as they implement effective, evidence-based instructional and assessment strategies that include 3-part problem solving lessons that emphasize consolidation and the use of descriptive feedback, then all students will be able to demonstrate an increased ability to think critically and communicate their Math learning.

Who	**Actions** What learning opportunities were/are planned?	**Preferred Future** Success Criteria – What does it/would it look like, sound like if fully implemented?	**Potential Sources of Evidence** List the sources of evidence.	**Analysis of Impact/Influence** What happened/is happening? What worked/is working? What isn't working? How, why and under what conditions did practices and organizational conditions produce results?	**Next Steps** What needs, variations, and/or potential adaptations are emerging? What intentional and informed next steps might be considered?
District	• Foster common understanding of growth mindset in Math with all stakeholders • Support principals by providing material on Math and growth mindset to be included in their school newsletters • Support principals and school team leaders (e.g. teachers, curriculum chairs) through explicitly defining inquiry learning (i.e. sounds like, looks like) and strategies for implementation (e.g. Oct 9 professional learning with Kelly Forsyth and Jenni Donohoo) • Support professional learning in Math curriculum and content K-12 within collaborative learning and optional central PD opportunities • Support professional learning in Math instruction and assessment strategies K-12 within collaborative learning and central PD opportunities	• Embed and model growth mindset attitude in all Math learning opportunities • Provide opportunities for professional learning focused on Math content • Provide opportunities for professional learning in Math intervention strategies • Provide opportunities for educators to participate in Math collaborative inquiries	• Documented collections (Central Repository) of triangulated student work that will demonstrate development of critical thinking and communication in Math	• On-going monitoring of Central Repository • Reviewing summaries of learning from collaborative inquiries with the purpose of determining next steps	

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Learning Council	• Provide resources that focus on growth mindset in Math and inquiry • Plan Math professional learning opportunities for principals • Plan for sharing of updates of learning as defined by success criteria created for school-based collaborative inquiry in principal learning teams	• Members will embed and model growth mindset language in their conversations with all stakeholders • Members will embed and model growth mindset language in their conversations about Math	• Creating and maintaining a Central Repository that will contain triangulated collections of documented student work that demonstrate development of critical thinking and communication in Math • Analyzing trends from collected data in the Central Repository to determine professional learning that support the needs of the inquiries	• Opportunities for professional learning as identified by trends in schools • Analysis of evidence collected at collaborative inquiries	
Principal Learning Teams / Family of Schools Meetings	• Share and explore growth mindset learning with peers • Share and explore Math content and process learning with peers • Share updates of learning from school-based collaborative inquiries	• Embedding growth mindset language in their conversations with other principals and staff particularly in Math • Principals will be the instructional leader and participate in their Math Collaborative Inquiries	• Sharing triangulated evidence of documented student work that demonstrates development of critical thinking and communication in Math • Analyze trends from documented student work to determine professional learning that supports the needs of inquiries • Exit surveys to inform possible next steps of principal learning	• Opportunities for professional learning as identified by student / teacher needs • Analysis of evidence collected at Math collaborative inquiries • Sharing updates of learning in collaborative inquiries through the use of monitoring practices (how we know it is working)	

Who	Actions What learning opportunities were/are planned?	Preferred Future Success Criteria – What does it/would it look like, sound like if fully implemented?	Potential Sources of Evidence List the sources of evidence.	Analysis of Impact/Influence What happened/is happening? What worked/is working? What isn't working? How, why and under what conditions did practices and organizational conditions produce results?	Next Steps What needs, variations, and/or potential adaptations are emerging? What intentional and informed next steps might be considered?
Schools / Educators	● Explicit teaching of growth mindset with students ● Use growth mindset language in conversation with students, parents, colleagues ● Teaching cognitive / metacognitive skills ● Provide classroom environments with the following: o Math Talk / word walls o Manipulatives o Technology o Authentic Tasks (Open Tasks / Parallel Tasks) o Differentiated Instruction o 3 Part Problem Solving Lessons o Problem Solving Strategies o Mathematical Processes ● Math Collaboration ● Assessment for/as/of learning practices o Learning goals, co-constructed success criteria o implement a variety of formative assessment practices o Feedback that focuses on success criteria o Communication with parents regarding Math progress/next steps and growth mindset	● Teachers using growth mindset language in their interactions with parents, peers and students ● Math Talk Communities in classrooms ● Differentiation includes use of open and parallel tasks concrete and virtual manipulatives as "expected practice" ● Evidence of co-constructed success criteria for problem solving and math learning ● 3 Part lessons that incorporate consolidations that highlight and name student learning through multiple strategies and solutions ● Regular use of descriptive feedback related to both problem solving and math content acquisition to support student learning ● Provide opportunities for students to reflect, set, and communicate individual learning goals for their Math learning ● Teacher participation in Math Collaborative Inquiries that focus on refining instructional and assessment practises to support student thinking and communication in Math	● Collecting and documenting triangulated evidence of student work that demonstrates development of critical thinking and communication in Math ● Analysis of collected data from Math Inquiries to determine next steps for educators ● Documentation of descriptive feedback from colleagues (around agreed area of focus) to support next steps for educators ● Documentation of the learning from collaborative inquiries and from shared learning with a larger school community	● Assessment for and as learning (e.g. Student voice and work is used to plan next steps) ● Professional learning to support Math instruction and assessment (e.g. collaborative inquiries, staff or divisional meetings)	

Who	**Actions** What learning opportunities were/are planned?	**Preferred Future** Success Criteria – What does it/would it look like, sound like if fully implemented?	**Potential Sources of Evidence** List the sources of evidence.	**Analysis of Impact/Influence** What happened/is happening? What worked/is working? What isn't working? How, why and under what conditions did practices and organizational conditions produce results?	**Next Steps** What needs, variations, and/or potential adaptations are emerging? What intentional and informed next steps might be considered?
Students	● Using growth mindset in Math ● Using cognitive / metacognitive skills ● Working in collaboration ● Using descriptive feedback to improve learning and determine next steps	● Students using growth mindset language to describe their math learning (They believe that they can do Math.) ● Students engaged in solving quality Math problems/tasks ● Students using Math vocabulary to communicate their understanding ● Students selecting Math tools and strategies appropriate to their learning ● Students referring to co-constructed anchor charts and success criteria to support their own learning	● Demonstrating a growth mindset (i.e. seeing themselves as Mathematicians who persevere to solve problems both collaboratively and independently) ● Reflecting on and providing feedback about their learning (e.g. through Exit Cards, questioning, journals) with respect to critical thinking and communication in Math	● Success criteria accessible ● Students provided with time to reflect and use timely and descriptive feedback to plan individual learning goals	