

COMPREHENSIVE NUMERACY STRATEGY K-12

2014 – 2017 – Updated August 2015

Numeracy is our curricular focus in the Peel District School Board. We have explicitly defined our strategy to empower all educators to support the implementation of improved numeracy instruction in Peel classrooms. Our Comprehensive Numeracy Strategy has 3 drivers: the instructional focus, instructional strategies and assessment.

“[The Ontario Mathematics Curriculum] is based on the belief that students learning mathematics most effectively when they are given opportunities to investigate ideas and concepts through problem-solving and are then guided carefully into an understanding of the mathematical principles involved. At the same time, it promotes a balanced program in mathematics. The acquisition of operational skills remains an important focus of the curriculum.” (The Ontario Curriculum, Grades 1-8)

“Today’s mathematics curriculum must prepare students for their future roles in society. It must equip them with an understanding of important mathematical ideas; essential mathematical knowledge and skills; skills of reasoning, problem-solving and communication; and , most importantly, the ability and the incentive to continue learning on their own.” (The Ontario Curriculum, Grades 11 and 12)

Our Instructional Focus	Educators across all grades and subject areas will focus on teaching and learning through the lens of numeracy with an emphasis on proportional and spatial reasoning in order to make student learning visible.
Instructional Strategies	Educators will use learning goals and co-created success criteria, teach using the 3 part lesson framework, employ rich tasks and use thinking tools and manipulatives in order to support student learning and thinking.
Assessment for Learning	Educators will use descriptive feedback and formative assessment in order to improve student achievement.

As we move along our learning journey focusing on effective instruction and assessment practices to improve student achievement in mathematics, the key areas of focus for the Comprehensive Numeracy Strategy for 2015-2016 are:

- Deepening our mathematical content knowledge for teaching
- Use of rich tasks for instructional and assessment purposes
- Numeracy and how it relates to Mathematics
- Assessment for Learning to enhance instruction and student learning

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ACTION ITEM	RESOURCES	WHO IS RESPONSIBLE?	TIMELINES
<p>The Numeracy Team develop core professional learning opportunities on the 3 drivers differentiated for Superintendents, Principals, Instructional Coaches, and educators.</p>	<ul style="list-style-type: none"> Numeracy Team comprised of math educators from Peel and from the province, including, but not limited to Mathematical Literacy, Coordinator, Literacy Coordinator, Assessment Coordinator, Coordinating Principals School Effective Leads, Selected Superintendents of Education, Associate Director, ETFO and OSSTF Representatives 	<ul style="list-style-type: none"> CISESS Superintendents CISS Superintendent of Education Mathematical Literacy Instructional Coordinator 	<ul style="list-style-type: none"> Continuing September 2015 3 meeting per year (November, February and May)
<p>Numeracy Strategy addressed at Starting Point. Key messages will be reviewed. Successes and next steps will be outlined developed, A focus will be placed on:</p> <ul style="list-style-type: none"> Showcasing how math is everywhere We are ALL teachers of Numeracy - This is 21st century teaching and learning 3 Core Drivers remain unchanged Success from the first year Key areas of focus for 2015-2106 	<ul style="list-style-type: none"> Starting Point speech 	<ul style="list-style-type: none"> Director Communications Support Services Numeracy Team 	<ul style="list-style-type: none"> September 2015
<p>All schools will have a numeracy goal and theory of action as their main school success focus</p>	<ul style="list-style-type: none"> School Success Planning module to be revised to facilitate numeracy goal setting 	<ul style="list-style-type: none"> Superintendents of Education Principals School teams 	<ul style="list-style-type: none"> By November 15, 2015

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Principals work with staff teams to promote a school culture that supports numeracy cross the curriculum based on Balanced Mathematics Instruction K-12 document	<ul style="list-style-type: none"> • <i>Balanced Mathematics Instruction K-12</i> document • Workshops: Facilitation Skills for Department Heads • <i>EngageMath</i> website • Mathematics Learning in a Play-Based Environment document 	<ul style="list-style-type: none"> • Superintendents of Education • Principals • Secondary Department Heads 	<ul style="list-style-type: none"> • Continuing September 2015 and ongoing
<p>All Principals will focus their professional learning opportunities at the school level (staff meetings, release days, department meetings, PL Days) on their numeracy goal</p> <p>Provide meaningful, focused support and professional development for lead teachers and secondary Department Heads</p>	<ul style="list-style-type: none"> • <i>EngageMath</i> website 	<ul style="list-style-type: none"> • Principals • Instructional Coaches (to build capacity with school teams) • CISS Math Team (to include Mathematics Resource Teachers and School Effectiveness Leads) 	<ul style="list-style-type: none"> • Continuing October – June 2016
<p>Principals and/or VPs will attend portions of <i>all</i> collaborative inquiries (K-6 networks, 7-10 networks, school sessions) related to numeracy with their teaching teams</p> <p>Key areas of focus:</p> <ul style="list-style-type: none"> • Deepening our mathematical content knowledge for teaching • Use of rich tasks for instructional and assessment purposes • Numeracy and how it relates to Mathematics • Assessment for Learning to enhance instruction and student learning 	<ul style="list-style-type: none"> • Resources developed by CISESS staff & Math Team in order to support building a unit of study, assessment & reporting 	<ul style="list-style-type: none"> • Principals, Vice-Principals • Teachers • Program Coordinators • Instructional Coaches • CISS Math Team 	<ul style="list-style-type: none"> • Continuing October 2015 – June 2016

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<p>All schools K – 12 will participate in numeracy focused collaborative inquiry networks.</p> <p>7 -10 Networks will continue to support cross-panel family of schools groupings.</p> <p>K-6 networks will again focus on grades 3 to 6 with a school choice of participation in centrally supported and directed networks or in self-selected, self-directed networks.</p> <p>Selected schools will have the opportunity to use the resource 'Dreambox' as a pilot project to support their professional learning and their work with students.</p> <p>Early Years Lead Network Inquiries (K-2) will focus mathematical learning in the primary grades.</p> <p>Identified schools in the SSI initiative will adopt numeracy as the focus of their collaborative work – specifically supporting teachers of grade 9 and 10 applied mathematics.</p>	<ul style="list-style-type: none"> Math Team Engage Math website Curriculum documents Ministry resources Dreambox on-line software Peel resources 	<ul style="list-style-type: none"> Mathematical Literacy Coordinator SEL's Math Team Dreambox Learning Early Years Coordinator 	<ul style="list-style-type: none"> October 2015 to February 2016
<p>The Comprehensive Numeracy Strategy K-12 is used as the main focus for the submission of the Board Improvement Plan</p> <p>Schools develop School Success Plans based on Comprehensive Numeracy Strategy</p>	<ul style="list-style-type: none"> Board Improvement Plan integrally aligned with Comprehensive Numeracy Strategy Reviewed with ISS Team in August 	<ul style="list-style-type: none"> CISESS Superintendents CISS Math Team 	<ul style="list-style-type: none"> By Fall 2015
<p>The CISS Math Team will provide in-depth, differentiated professional learning for instructional</p>	<ul style="list-style-type: none"> Comprehensive Numeracy Strategy K-12 	<ul style="list-style-type: none"> CISS Math Team 	<ul style="list-style-type: none"> First week of September 2014

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<p>coaches on the 3 drivers referenced in the Comprehensive Numeracy Strategy K-12.</p> <p>Professional learning will include PRIME training to support the instruction coaches' content knowledge for teaching mathematics</p>	<ul style="list-style-type: none">Balanced Mathematics Instruction K-12<i>EngageMath</i> Website	<ul style="list-style-type: none">Nelson (PRIME) Representatives	<p>(will need to be revised)</p> <ul style="list-style-type: none">Friday meetingsSeptember 2015 – December 2015

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The CISS Math Team will provide regular professional learning for the ISS Team on the curriculum	<ul style="list-style-type: none"> Comprehensive Numeracy Strategy K-12 Balanced Mathematics Instruction K-12 Professional Resource: <i>Making Math Meaningful</i> <i>EngageMath</i> Website Curriculum Documents 	<ul style="list-style-type: none"> CISS Math Team 	<ul style="list-style-type: none"> October 2015 – February 2016 at: <ul style="list-style-type: none"> Pre Board meetings ISS Meetings
Educators will be encouraged to engage in after-hours professional learning related to the teaching of Mathematics	<ul style="list-style-type: none"> Ministry AQ courses Dinner & Dialogue series 	<ul style="list-style-type: none"> Mathematical Literacy Coordinator Superintendents of Education 	<ul style="list-style-type: none"> Continuing September 2015
At SOE meetings, Superintendents of Education will integrate and align the language of Instructional Rounds and the Comprehensive Numeracy Strategy K-12	<ul style="list-style-type: none"> Comprehensive Numeracy Strategy K-12 Balanced Mathematics Instruction K-12 	<ul style="list-style-type: none"> Superintendents of Education 	<ul style="list-style-type: none"> Continuing September 2015 and ongoing
Provide explicit links to recommended Transformational Practices strategies to be used to implement Comprehensive Numeracy Strategy	<ul style="list-style-type: none"> Mathematical Literacy Coordinator CISS Math Team Instructional Coaches 	<ul style="list-style-type: none"> Mathematical Literacy Coordinator Assessment Coordinator Instructional Coaches 	<ul style="list-style-type: none"> continuing September 2015 and ongoing
Explore and identify a common assessment for proportional and spatial reasoning K-12	<ul style="list-style-type: none"> SEF Framework Comprehensive Numeracy Strategy K-12 Balanced Mathematics Instruction K-12 	<ul style="list-style-type: none"> Mathematical Literacy Coordinator Assessment Coordinator 	<ul style="list-style-type: none"> September 2015 to June 2016

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<p>Develop a data monitoring strategy that includes indicators of student achievement in the six areas of the Balanced Mathematics Instruction K-12</p> <p>Develop clear established success criteria which link to the 3 core drivers</p>	<ul style="list-style-type: none"> Comprehensive Numeracy Strategy K-12 Balanced Mathematics Instruction K-12 	<ul style="list-style-type: none"> Mathematical Literacy Coordinator Math Team Secondary Department Heads 	<ul style="list-style-type: none"> By February 2016 and ongoing
CISESS Celebrating Learning (Literacy/Numeracy Conference)	<ul style="list-style-type: none"> Guest speakers to include Cathy Marks Krpan Literacy/Numeracy Break-out sessions 	<ul style="list-style-type: none"> Mathematical Literacy Coordinator Literacy Coordinator 	<ul style="list-style-type: none"> November 18 &19, 2015 Pearson Convention Centre

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Parent Numeracy Conference	<ul style="list-style-type: none"> Keynote speaker Parent Workshops Vendor display 	<ul style="list-style-type: none"> Communications Support Services All CISESS Coordinators 	<ul style="list-style-type: none"> Spring 2016
<p>Engage parents in the Comprehensive Numeracy Strategy through various strategies (eg. Math Nights for families, Welcome to Kindergarten Events, PRO Grants, and camera-ready articles) that explain the broad strategy and deal with the six areas of the Balanced Mathematics Instruction, K-12 document</p> <p>Continue to produce age appropriate articles for newsletters on the six components of the <i>Balanced Mathematics Instruction, K-12</i> document:</p> <ul style="list-style-type: none"> Basic Facts and Operational Skills Attitudes to Math Approaches to Instruction/Assessment Teaching Through Problem-Solving 	<ul style="list-style-type: none"> Address the successes from the previous year, key areas of focus for 2015-2016, brief outline of the Comprehensive Numeracy Strategy, and address the 3 drivers in the form of a camera-ready article Minimum of 6 camera-ready articles for inclusion in school, one for each column of the 	<ul style="list-style-type: none"> Communications Support Services Camera-ready articles to support presentations at School Council meetings CISS Math Team 	<ul style="list-style-type: none"> Continuing September 2015 and ongoing

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<ul style="list-style-type: none"> Purposeful Practice Purposeful Use of Resources 	<p><i>Balanced Mathematics Instruction</i> document</p> <ul style="list-style-type: none"> Section of each school's website to include camera-ready articles, <i>Balanced Mathematics Instruction</i> document, etc. based on grade levels in school 		
Review and gather feedback of the Comprehensive Numeracy Strategy – Year 2	<ul style="list-style-type: none"> Transformational Practices document Comprehensive Numeracy Strategy K-12 Balanced Mathematics Instruction K-12 	<ul style="list-style-type: none"> Mathematical Literacy Coordinator Assessment Coordinator Numeracy Team CISESS Superintendents Superintendents of Ed. 	By May 2016
Revise and publish Comprehensive Numeracy Strategy for Year 3	<ul style="list-style-type: none"> Numeracy Team 	<ul style="list-style-type: none"> Numeracy Team CISESS Superintendents Superintendents of Ed. Mathematics Literacy Coordinator 	June 2016