

TCDSB K to 12 Professional Learning Form 2016-2017



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BACKGROUND – DATA ANALYSIS

Student Achievement Data (EQAO, CAT4, etc.)	Perceptual Data (Survey data, School Climate, etc.)	Demographic Data (N tiles, etc)	Program Data (Empower, 5 th Block, Taking Stock, SSI, etc.)	Other (SSLN, EDI, etc.)
<p>Recap of the EQAO data: 2014-2015: -38 Grade 3 students wrote the Math assessment, 13% with special needs -33 students wrote the Language and Math assessments with 6% special needs Gr. 3: 13% received accommodations Gr. 6: 3% received accommodations</p> <p>Gr. 3-71% like math most of the time Gr. 6: 61% like math most of the time Updated 5 year trend: Gr. 3 Math: 72, 61, 60, 62, 68 Gr. 6 Math: 66, 67, 68, 75, 82 Gr. 6 Reading: 73, 82, 84, 88, 91 Gr. 6 Writing: 90, 87, 89, 92, 97 Gr. 3 Math: Level 1: 2 or 5%</p>	<p>For the Grade 3 cohort from 2014-2015: 47% like to read most of the time and 71 % like math most of the time Perceptual Data: For the Grade 6 cohort from 2014-2015: 67% sometimes like to read and 61 % like math most of the time</p> <p>According to the BLIP/SEF Survey from June 2016: -45% routine use of respondents (22) state that "A Variety of relevant and meaningful assessment data is used by students and educators to continuously monitor learning, to inform instruction and determine next steps (Why is this not higher)? Implementation, 64% "During learning, timely, ongoing,</p>	<p>Based on an enrollment of 366, Low Family Income 23.7% 6 Ntile based on Income Tax filed in 2014 statcan.gc.ca</p> <p>Number of IEPS, excluding Gifted as of Oct. 2015, 20</p> <p>Parent Unemployment 10.1% 5 Ntile</p> <p>Single Parent Families: 25.0 % 6Ntile</p> <p>Parent Education 11.6% who have not completed a high school diploma</p>	<p>None</p>	<p>Focus was on how strands were misaligned in Grades 8 and applied and academic 9, also looked at disconnection between problem solving using a variety of methods inn elementary and how in Grade 9, students are expected to use more of a standard method using formulas and specific algorithms, -also looked at the imbalance of assessment and a focus on differentiating assessments based on the achievement chart; whereas in grade 9, the assessments already addressed specific areas of the achievement chart, i.e. for Knowledge and Understanding,</p>

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<p>Level 2: 10 or 26% Level 3: 22 or 58% Level 4: 4 or 11 % Gr. 6: Reading Level 2: 3 or 9% Level 3: 20 or 61% Level 4: 10 or 30% Gr. 6: Writing Level 2: 1 or 3% Level 3: 22 or 67% Level 4: 10 or 30% Gr. 6: Math Level 1: 1 or 3% Level 2: 5 or 15% Level 3: 14 or 42% Level 4: 13 or 39% - In Grade 3, 52 students wrote the EQAO assessment in Math only -21% are students with special needs, almost a quarter of the cohort -19% of students have the first language learned at home other than English -Born outside of Canada (9ntile) -12.2% Raw data, Second language at home (8th ntile) -IIR : According to the latest Item Information Report for EQAO, students struggled most with multiple choice and short answer questions in the Measurement strand (4 sections)</p>	<p>descriptive feedback about student progress is provided based on student actions and co-constructed success criteria” Areas of need: Routine Use, 27% state that “Teaching and learning in the 21st Century is collaborative, innovative and creative within a global context 32% Routine Use “Resources for students are relevant, current, accessible, inclusive and monitored for bias” 32%- Routine Use, “Opportunities for authentic learning experiences and experiential learning exist in all classrooms, schools and community programs</p>			<p>Communication, thinking, Application with weights given to each</p> <p>In Grade 9, EQAO results are 5% of their report card with 10% as the maximum allowed</p> <p>Grade 9 teachers find it challenging to place students in streamed math classes as elementary school is destreamed</p>
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<p>EQAO Math Data/ 5 year trend: 2009-2010 (75%) 2010-2011 (72%) 2011-2012 (61%) –a drop of 11% from the previous year 2012-2013 (60%) 2013-2014 (62%) –indication of a modest 2% increase -students have achieved at level 2 range for the past 3 years. What are the variables? Disengagement, difficulty with basic computation, problem solving, vocabulary? -Of the 52 students who wrote only 26 of them or 50% reached level 3 and above, compared to 54% at the board -Math 4% below the board, 5% below the province Recap of Junior Data for OLW CES (Grade 6 cohort from 2013-2014) - 24 students wrote the EQAO assessments in Reading, Writing and Math -0 % are ELL</p>				
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<p>-4% have special needs</p> <p>-21% of students have the first language learned at home other than English</p> <p>-Born outside of Canada (9th ntile)</p> <p>-12.2% Raw data, Second language at home (8th ntile)</p> <p>-IIR: According to the latest Item Information Report for EQAO, students struggled most with multiple choice and short answer questions in Geometry and Spatial Sense and Data Management and probability (3 sections a piece)</p> <p>EQAO Math Data/5 Year Trend:</p> <p>2009-2010: 75%</p> <p>2010-2011: 66%</p> <p>-drop of 9% from previous year</p> <p>2011-2012: 67%</p> <p>-signs of improvement in next 3 cohorts</p> <p>2012-2013: 68%</p> <p>2013-2014: 75%</p> <p>-increase of 7% from previous year</p> <p>-Of the 24 students who wrote, 12 of them or 50% reached</p>				
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<p>level 3, compared to the board at 42%</p> <ul style="list-style-type: none">-Math 22% above the board, stats for the province N/A-Comparing the percentages of Grade 3 students achieving levels 2 in 2011 at 25%, there is a major decrease in the percentage of students achieving level 2 at 12%.-teachers observed that when tracking the grade 1 cohort in 2010-2011 throughout 5 years using report card data, Patterning and Algebra generally posed a challenge for that cohort up to grade 3, students achieving C-Grade 2 cohort from 2010-2011 until 2014-2015, Number Sense and Numeration became an issue with 24% achieving at level C, along with challenges in PA and Data Management, Also, when you look at the grade				
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<p>3 and Grade 4 cohorts in 2010-2011, both of these groups experience and increase in the percentage of students achieving in the C range once they enter grade 5, specifically in number sense and geometry and spatial sense</p> <p>-issue transitioning from French language in Grade 4 (Math and Language) to 5 (math and language) in English</p> <p>-When looking at the Term 2 report card data from 2011-2016 for math, the Probability component of the DM and Probability Strand and the Measurement Stands have consistently been an area of need considering the following mean numbers of students achieving at the C level: Measurement Grade 1: 5, Grade 2: 6, Grade 3: 2, Grade 4: 4, Grade</p>				
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<p>5: 4, Grade 6: 5, Grade 7: 3 and Grade 8: 2</p> <p>Data Management and Probability: Grade 1: 4, Grade 2: 9, Grade 3: 5, Grade 4: 3, Grade 5: 3, Grade 6: 3, It is also noteworthy that that mastery of operations skills and fractions as concepts and skills covered in term 2 of the Number Sense and Numeration have challenged students at the Grade 2, 4, 5 levels CAT 4 -Percentage of students at Stanines 3 and below in computation in Grade 5 is as follows from 2012-2016, specifically at 15% in 2012-2013, 6% in 2013-2014, 15% in 2014-2015 and 18% in 2015-2016. In terms of math, the Percentage of students at Stanines 3 and below in Grade 5 is as follows from 2012-2016: 7%, 3%, 9% and</p>				
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<p>12%</p> <p>- Percentage of students at Stanines 3 and below in computation has ranged from 6%, 3%, 11%, 12% and 0% in Grade 7 from 2011-2016</p> <p>Percentage of students at Stanines 3 and below in math has ranged from 0%, 3%, 0%, 0% and 0% in Grade 7 from 2012-2016</p> <p>Using the latest CAT 4 results from 2015-2016 (The then Grade 5 cohort), a subgroup consisting of 20 of 30 or 66% of current Grade 6 students have been identified as students who will require intervention to succeed in meeting the provincial standard based on stanines 4-6.</p> <p>4 of 30 or 13% of current Grade 6 students have been identified as requiring significant intervention to meet the provincial standard based</p>				
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<p>on stanines 1-3.</p> <p>Using the latest CAT 4 results from 2015-2016 (The then Grade 7 cohort), a subgroup consisting of 14 of 26 or 54% of current Grade 8 students have been identified as students who will require intervention to succeed in meeting the provincial standard based on stanines 4-6.</p>				
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<p>URGENT CRITICAL LEARNING NEED Explain in 140 characters or less ... student learning problems we need to solve - Professional learning focus for this year.</p>	<p>-Support Math processes. Math talks to practice justifying- Timely, specific descrip, feedback & assessment with links to achievement chart Lower scores in application questions (EQAO).</p>
<p>From the data, what learning condition will support increased achievement?</p>	<p>-Providing extra support, explicit teaching of using open approach to solving word problems related to Probability/Measurement -More practice with "Application" type questions for students -Greater links to cross strand investigations once students reach the review stage of their learning of a specific concept/skill</p>

PROFESSIONAL LEARNING PLAN TO MEET URGENT CRITICAL NEED:

<p>Collaborative Inquiry Question (What is the problem of practice?)</p>	<p>Goal</p> <ul style="list-style-type: none"> How might a greater understanding of a well-balanced mathematical justification and other relevant tools assist students to improve their ability solve Application questions which are multi-step and multi-strand?
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<p>If... Then... Statement:</p>	<p>If all teachers adopt routinely in their math instructional practice an emphasis on identification and gap analysis and strengthening Grade specific operational skills through a variety of effective print and digital</p>
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	<p>resources, explicitly teach students how to solve math word problems through an open approach by 1) understanding the problem situation 2) mathematizing the situation, 3) conducting a mathematical analysis and 4) interpreting and communicating results, equipping students with resources and tools to take ownership of key math words in French and English, then student achievement and problem solving ability across the math strands will improve significantly.</p>
<p>Learning Goals (related to urgent critical learning need)</p>	<p>Goal</p> <ul style="list-style-type: none"> · Strengthen basic skills. Use them to make connections to break complex, multi-step problems down into manageable chunks. <p>Our school community is learning to facilitate multiple ways of representing mathematical thinking, making connections and developing math concepts amongst our students</p> <ul style="list-style-type: none"> -Improving students' computation and mental math capabilities through explicit teaching and student opportunities to practice - developing a mathematics learning environment for all students with opportunities for student-student as well as teacher-student math talk and interaction -responding to students' thinking by providing timely feedback with opportunities to act on that feedback and planning next steps for instruction -focusing on problematic key concepts in the mathematics curriculum (Measurement, Probability) -ensuring cross-curricular connections -developing authentic tasks founded on key concepts in mathematics -ensuring an intentional use of learning experiences and selecting technologies, manipulatives and content knowledge to involve students in learning actively <p>Areas of further exploration and action consist of: Teachers enabling students to build their own multiple choice questions and then peer answering to help students understand the mindset of the question creator and how to approach them.</p> <p>Focusing on situating the math skills and concepts to be used in real-world problems to help students see the relevance in their real lives.</p> <p>Create end-of-chapter tests/summative assessment not from Nelson but from former EQAO testing.</p>
<p>Marker students who will receive intervention (subgroups e.g., achieving at 2.5-2.9, Applied, gender, Grade(s), etc)</p>	<p>Using class level data from their current point in their math programs (Tests, quizzes, key assessment questions, diagnostic assessments, problem solving tasks/questions, Term 2 math report card data from 2015-2016, CAT 4 data from 2015-2016, teachers have compiled lists of students to monitor (2.6 and below) and students to move (2.7 to 2.9) Submitted.</p> <p>Using the latest CAT 4 results from 2015-2016 (The then Grade 5 cohort), a subgroup consisting of 20 of 30 or 66% of current Grade 6 students have been identified as students who will require intervention to succeed in meeting the provincial standard based on stanines 4-6.</p> <p>4 of 30 or 13% of current Grade 6 students have been identified as requiring</p>

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	<p>significant intervention to meet the provincial standard based on stanines 1-3.</p> <p>Using the latest CAT 4 results from 2015-2016 (The then Grade 7 cohort), a subgroup consisting of 14 of 26 or 54% of curr</p>
<p>Actions/Interactions (What will we do to meet our goals?)</p>	<ul style="list-style-type: none"> • Establishing and communicating clear learning goals and success criteria for the task/math experience • 3 part math lesson structure • 2-3 week math learning cycles • Using teacher selected diagnostics assessments (A Pas de Geants, Jump Math), analysis of school wide and classroom data to assess gaps and inform instruction • Math Word walls (JK-2 in French with examples, 3-4 dual language with examples, 5-8 in English with examples, i.e. explanations, definitions, illustrations, what the concept is Not)-Freyer model • Use of Ontario Curriculum Tracking Templates for Math Grades 1-8, http://www.ontarioreportcards.com/ontario-curriculum-tracking-templates.html • Allowance for and integration of math talks and learning conversations in your 60-minute math instructional block (Integrating Guidelines for Whole Class Math Talk- as outlined by Catherine D. Bruce), making the process and strategies of problem-solving transparent for the students and their peers, ownership and identification of strategies used, use of feedback • Completion of Mental Math Trajectory, including strands for Geometry and Spatial Sense, Data Management and Probability and Algebra and Patterning using Nova Scotia and PEI Mental Math Strategies documents and continuums. • Continued Emphasis on “just in time” feedback (On the process, product, self-regulation, strategy chosen, success criteria) given by teacher, peers to inform strengths and next steps which are specific to the task, skill, concept at hand, opportunities to apply verbal, written feedback to refine and correct student work and repair misunderstanding (use of teacher selected graphic organizer for feedback, i.e. Stars and Stairs, digital, etc...) • Initiation and maintenance of a learning goals and success criteria notebook which may be teacher guided, student authored and maintained as an ongoing reference tool • Looking at the Evidence of Impact: What does the student work tell us, where are the gaps in understanding, application of skills, and ability to problem solve and communicate? • Integrating Information Communication Technology in purposeful ways to enhance student learning in the strands (i.e., implementation of Netmath/Journee de Math in French, Grades 3-4 and in English Grades 5-8)and facilitate communication, documentation of student work, understanding of key math concepts and application of skills in different ways (look at the Supporting Technology portion of the newly revised long range plans) • An eye for balancing math summative assessments and varying assessments to include a balanced approach to question types that don't

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	<p>only dwell on Knowledge and Understanding and mathematical representation but also include Application questions, problem solving questions with an emphasis on “Showing/Justifying” how a student knows the answer provided is correct</p> <ul style="list-style-type: none"> • When rubrics are used, that they reflect the task-specific success criteria that you are assessing and evaluating, also that student work is assessed and evaluated according to Knowledge and understanding (Subject specific content), Thinking, Communication and application (see long range plan) <p>Mindful of facilitating math learning experiences which have multiple entry points, are skill and big ideas/concept embedded in alignment with your math program, are meaningful and practical with an eye for cross-curricular integration.</p>
<p>Strategies to address the needs of students who have an IEP or are ELL</p>	<p>Assess and determine gaps</p> <ul style="list-style-type: none"> -Differentiate instruction and assessment -make the math experiences relevant -Focus on Strengthening basic operational skills, explore an open approach to solving multi-strand, multi-step/operation word problems, use a variety of manipulatives and digital tools, allow for math talks and give frequent feedback about the chosen strategy, process, product, based on specific criteria -remediate/re-teach when necessary
<p>PD Required for Staff</p>	<p>Pedagogical documentation-deepening our practice, revisiting monograph: “Pedagogical Documentation Revisited,” exploring technologies to capture student work and allow for annotation of observations-Voicethread</p> <ul style="list-style-type: none"> -Time to explore Guide d’enseignement efficace des mathématiques de la maternelle à la 3e année (Modélisation et algèbre, Mesure) -Further exploration of Netmath and how it can support student understanding and achievement in math -Exploration of Research monograph # 1 Student Interaction in the Math Classroom: Stealing Ideas or Building Understanding and Monograph #34 Les Problèmes Mathématiques Écrits -Exploration of resources on http://learnteachlead.ca/projects/engaging-students-in-mathematics/ -Time for Completion of Mental Math Trajectory, including strands for Geometry and Spatial Sense, Data Management and Probability and Algebra and Patterning using Nova Scotia and PEI Mental Math Strategies documents and continuums. -Building Inquiry into Math infused learning experiences
<p>Measures/Evidence of Success to be used</p>	<p>Increased proficiency in correctly answering multi-step, multi-operation, multi-strand application questions, improved student achievement as it relates to computational skills, demonstrated actual student improvement in understanding and using key French and English math terms within the appropriate context</p>
<p>Resources Required (human, material, #code days)</p>	<p>7 Code Days as part of the RMS</p> <ul style="list-style-type: none"> -Opportunity to network with other French Immersion Schools/area schools

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	for professional learning visits that are focused on Effective math practices, -Continued partnership with Area 4 math resource and SAO
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