



Date of Meeting: 2019 01 08

Item #: 6.0

<b>REPORT TO:</b>	<input type="checkbox"/> Administrative Council	<input checked="" type="checkbox"/> Program and School Services Advisory Committee
	<input type="checkbox"/> Policy Working Committee	<input type="checkbox"/> Planning and Priorities Advisory Committee
	<input type="checkbox"/> Board	<input type="checkbox"/> Other:
	<input checked="" type="checkbox"/> PUBLIC	<input type="checkbox"/> IN-CAMERA
<b>TITLE OF REPORT:</b>	EQAO Data and Next Steps	
<b>PRESENTED BY:</b>	Sheila Builder, Superintendent of Student Achievement Christine Stager, Manager, Research & Assessment Norah Rayfield, Research Associate, Research & Assessment Scott Armstrong, Learning Supervisor, Mathematics Kevin Auckland, Learning Supervisor, Languages Scott Askey, Principal Instructional Leadership Coach Linda Reid, Principal Instructional Leadership Coach Jeff Bruce, Principal, Westmount Public School	
<b>PRESENTED FOR:</b>	<input type="checkbox"/> Approval <input checked="" type="checkbox"/> Information <input type="checkbox"/> Advice	
<b>Recommendation(s):</b>		
<b>Purpose:</b>	To share an update on the implementation of actions based on data provided from the TVDSB 2017-18 EQAO assessments.	
<b>Content:</b>	The presentation will provide an overview of the actions that have occurred, and are planned to occur, based on the system data from the EQAO 2017-18 assessments. This presentation will also include a brief look at how one elementary school uses their school-based data to support student learning.	
<b>Cost/Savings:</b>	N/A	
<b>Timeline:</b>	Administrative Council: December 17, 2018 Program & School Services Committee: January 8, 2019	
<b>Communications:</b>	Administrative Council Program & School Services Committee	
<b>Appendices:</b>	PowerPoint Presentation	

**Strategic Priority Area(s):**

**Relationships:**

- ☐ Students, families and staff are welcomed, respected and valued as partners.
- ☐ Promote and build connections to foster mutually respectful communication among students, families, staff and the broader community.
- ☒ Create opportunities for collaboration and partnerships.

**Equity and Diversity:**

- ☒ Create opportunities for equitable access to programs and services for students.
- ☒ Students and all partners feel heard, valued and supported.
- ☒ Programs and services embrace the culture and diversity of students and all partners.

**Achievement and Well-Being:**

- ☒ More students demonstrate growth and achieve student learning outcomes with a specific focus on numeracy and literacy.
- ☒ Staff will demonstrate excellence in instructional practices.
- ☐ Enhance the safety and well-being of students and staff.

Form Revised October 2018

# TVDSB Data to Action

## EQAO Data Update



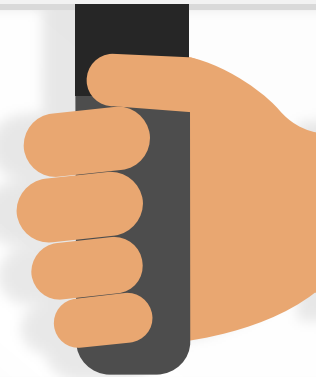
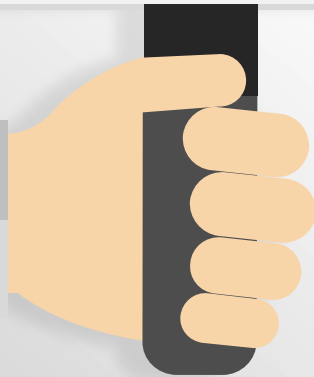
# EQAO Strategy Team



# Connections to the Operational Plan

**Improve Student  
Achievement in  
Mathematics**

**Improve our Five Year  
Graduation Rate**



## 4 Different Assessments

**Primary (Grade 3): Reading, Writing, Math**

**Junior (Grade 6): Reading, Writing, Math**

**Grade 9: Math – Academic and Applied**

**Ontario Secondary School Literacy Test (OSSLT)**





## Mobilizing our Knowledge



1

**New Reports and Analyses**



2

**Data Literacy with Senior Administration**



3

**Data Literacy with Learning Supervisors**



4

**Data Literacy with Learning Coordinators**

# Data Literacy

In-depth exploration of school and system reports and analyses to break down overall patterns of results.

Included:

- Examination of data
- Discussion of patterns observed
- Interpretation of results
- Next steps for all teams





Numeracy

An illustration showing the word "Numeracy" in large, bold, sans-serif letters. Each letter is held up by a hand of a different skin tone and wearing a different colored sleeve. The letters are: 'N' (blue), 'u' (orange), 'm' (red), 'e' (yellow), 'r' (green), 'a' (dark blue), 'c' (red), and 'y' (blue). The hands are positioned below the letters, with some fingers visible gripping the edges. The background is a light gray gradient.

# Mobilizing our Knowledge



1

**Alignment of all of our work within the Operational Plan Objective of Increasing Student Achievement in Mathematics**



2

**Principal and School Teams Mathematics Professional Learning Series**



3

**Developed a TVDSB Companion Guide for the Ministry's new Focusing on the Fundamentals of Mathematics**



4

**'New to the Role' Evening Sessions**

# Mobilizing our Knowledge



5

**Grade 4 Math Project for Teachers and LSTs**



6

**Secondary Administrators Fundamentals of Math Evening Session to help prepare them for the November 16<sup>th</sup> focus on the Fundamentals of Math day.**



7

**Spotlight Teacher Sessions for Grades 7,8 and 9**



8

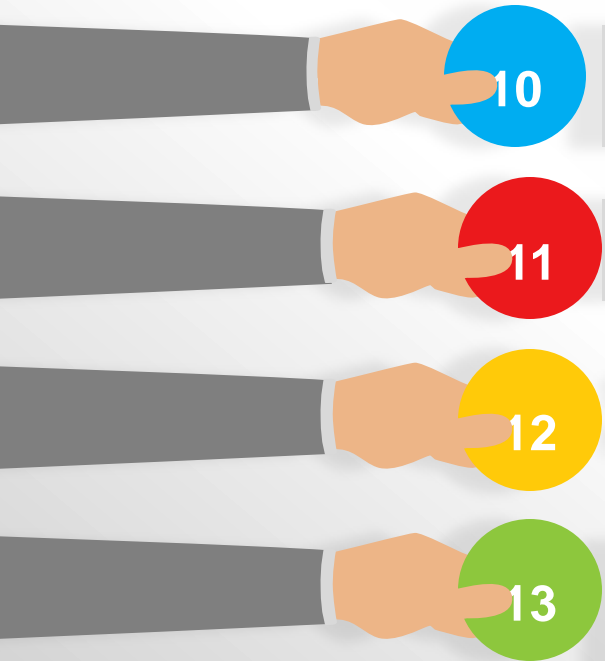
**Each panel had a Professional Activity Day devoted to focusing on the Fundamentals of Math- October 26<sup>th</sup> for elementary and November 16 for secondary.**



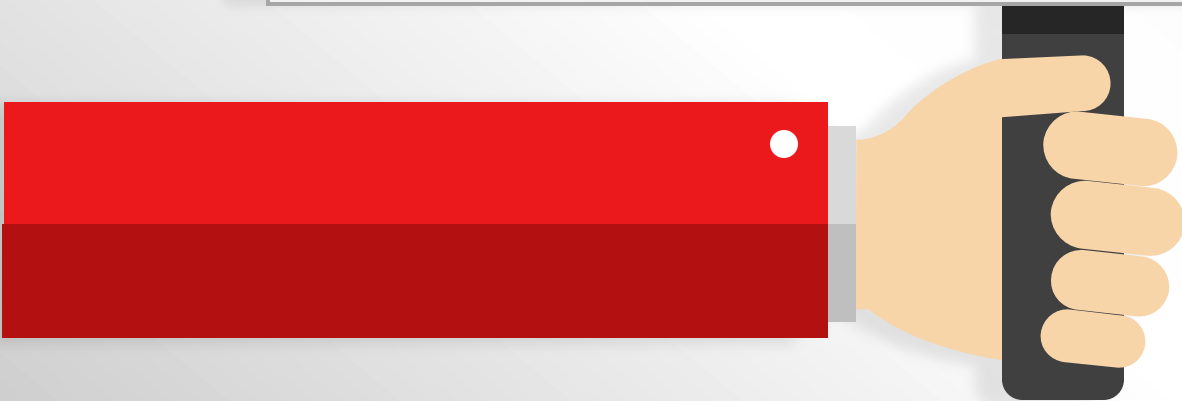
9

**Continued ongoing job-embedded professional learning opportunities by our Learning Coordinators, Secondary Coaches, Instructional Coaches and Math Learning Facilitators**

# Mobilizing our Knowledge

- 
- 10 Online programs and tools to support our students (e.g., Knowledgehook, Dreambox, Google Equatio, Desmos, Google Read and Write, etc.)
- 11 Intermediate Math Information Nights to support our parents/guardians
- 12 Support schools by providing monthly Home Connections Newsletter
- 13 Support schools in offering Parent Math Nights, Family Math Nights etc.,

# Focusing on the Fundamentals of Math



# Focusing on the Fundamentals of Math

## A TEACHER'S GUIDE

This guide is intended to support teachers' ongoing efforts in building students' knowledge and skills in mathematics. It focuses attention on the content of expectations in *The Ontario Curriculum, Grades 1–8: Mathematics, 2005* that deal with fundamental mathematics concepts and skills (specifically, expectations in the Number Sense and Numeration strand and expectations that relate to number properties in the Patterning and Algebra strand). The guide outlines steps to achieving the knowledge and skills described in these expectations and suggests how to make more timely connections that will better support student learning. A strong foundation in the concepts and skills emphasized here will prepare students for success in high school, and ensure that they have a set of essential skills for employment and responsible citizenship in the future.

Becoming highly skilled at arithmetic requires the development of number sense alongside procedural and factual knowledge as well as the mathematical principles that govern how the operations are related to one another.

(Bruce & Chang, 2013, p. 14, citing Baroody & Dowker, 2003)

# A Parent's Guide to the Fundamentals of Math

## Grades 1 to 8

Making sure that students have a strong understanding of the fundamentals of math is one of the best ways to prepare them for success, now and in the future. What students learn today will help best position them to solve everyday problems and to increase their employability in tomorrow's economy.

As students progress through elementary school, they will develop their ability to think mathematically, learn about different concepts and relationships, and to apply their knowledge. Key concepts include addition, subtraction, division, and multiplication, which will help to set the stage for more advanced skills, including algebra, and working with integers and decimals, among others.

By developing a strong understanding of numbers, students will be able to perform mathematical calculations quickly and accurately – whether they do so mentally, on paper, or by using a calculator. The ultimate goal is for them to be able to perform mathematical procedures with ease. This skill will also support students as they develop their skills in critical thinking and problem solving.

Ontario's publicly funded schools are focusing on the fundamentals of math. This is an overview of what Ontario students in Grades 1–8 are learning in math, and how you can support your children's math learning at home.

## Fundamental math skills from Grades 1 to 8

Most students learn math facts gradually over a number of years as they build their knowledge and confidence in their own ability to do math. The chart below provides examples of some fundamental math concepts and skills that students are expected to learn in elementary school by the end of primary grades (1–3), junior grades (4–6), and intermediate grades (7–8).

### By the end of Grade 3, students will:

- Show understanding of and the use of whole numbers to 1,000, i.e., 0, 1, 2, 3... 1,000
- Count forwards and backwards from 1,000
- Use coins and bills to count and make change up to \$10
- Add and subtract numbers to 1,000
- Recall and use multiplication facts to  $7 \times 7$ , and related division facts, e.g.,  $49 \div 7$
- Understand the relationship between 1 whole and parts of 1 whole as fractions

### By the end of Grade 6, students will:

- Show understanding of and the use of whole numbers to 1,000,000 and decimal numbers to thousandths (e.g., 0.001)
- Count by tenths, hundredths, and fractional amounts
- Read money up to \$1,000 and represent it using bills and coins
- Add and subtract whole numbers and decimal numbers to thousandths

# Companion Documents

**Focusing on the Fundamentals of Math**  
in TVDSB

**How the TVDSB Focus on School Math Teams Professional Learning Series Connect to the NEW Fundamentals of Math**

The focus of our TVDSB School Math Teams Professional Learning Series has been:

- To develop a greater understanding of number relationships through decomposition, benchmarks, and representations of numbers.
- To develop a greater understanding of additive reasoning through tools and representations, meaning and properties of the operations and a variety of computational strategies.
- To develop a greater understanding of multiplicative reasoning through tools and representations, meaning and properties of the operations and a variety of computational strategies.

**Linking our TVDSB School Math Teams Professional Learning Series Work to the Fundamentals of Math Chart Grades 1 to 8**

Category	Session 1	Session 2	Session 3	Session 4
Working with numbers	<ul style="list-style-type: none"> <li>Counting principles</li> <li>Characteristics of number systems</li> <li>Counting by powers of 10</li> <li>Counting by powers of 10</li> </ul>	<ul style="list-style-type: none"> <li>Linear understanding of number</li> <li>Discrete and extending number</li> <li>Building multiplication and division fact fluency through number patterns</li> </ul>	<ul style="list-style-type: none"> <li>Linear understanding of number</li> <li>Discrete and extending number</li> <li>Building multiplication and division fact fluency through number patterns</li> </ul>	<ul style="list-style-type: none"> <li>Linear understanding of number</li> <li>Discrete and extending number</li> <li>Building multiplication and division fact fluency through number patterns</li> </ul>
Representing and modeling understanding of number properties	<ul style="list-style-type: none"> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> </ul>
Mastering Math Facts	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>
Developing Mental Math Skills	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>
Developing Proficiency with Operations	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>
Linking to Session	<a href="#">https://www.youtube.com/watch?v=...</a>	<a href="#">https://www.youtube.com/watch?v=...</a>	<a href="#">https://www.youtube.com/watch?v=...</a>	<a href="#">https://www.youtube.com/watch?v=...</a>

In 2017-2018, the TVDSB Math Department engaged staff in a series of professional learning sessions; the focus and content of the four sessions are connected to the Fundamentals of Math in the chart.

**Focusing on the Fundamentals of Math - Connections Between Grade 8 Fundamentals of Math Concepts and Grade 9 Applied Curriculum**

Through the ongoing work in AEAC - Achieving Excellence in Applied Courses, the most commonly identified student learning needs are:

1. Mathematical Strands - number sense, algebra
2. Learning Environment to Facilitate Growth Mindset - confidence building and advocacy, respect for individual learning needs
3. Mathematical Processes - problem solving, reasoning
4. Basic Numeracy Skills - fractions, integers

By focusing on the categories outlined in the chart, this will help to address these areas of need.

Category	Grade 8	Grade 9 Applied Curriculum
Working with numbers	<ul style="list-style-type: none"> <li>Linear understanding of number</li> <li>Discrete and extending number</li> <li>Building multiplication and division fact fluency through number patterns</li> </ul>	<ul style="list-style-type: none"> <li>Linear understanding of number</li> <li>Discrete and extending number</li> <li>Building multiplication and division fact fluency through number patterns</li> </ul>
Representing and modeling understanding of number properties	<ul style="list-style-type: none"> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> <li>Place value relationships (base ten understanding)</li> </ul>
Mastering Math Facts	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>
Developing Mental Math Skills	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>
Developing Proficiency with Operations	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>	<ul style="list-style-type: none"> <li>Place value relationships</li> <li>Counting</li> </ul>
Linking to Session	<a href="#">https://www.youtube.com/watch?v=...</a>	<a href="#">https://www.youtube.com/watch?v=...</a>

**Some Important Questions Answered in Focusing on the Fundamentals of Math: A Teacher's Guide**

**When should students master math facts?**

Though individual students may progress at different rates, generally speaking, addition/subtraction facts should be mastered by the end of Grade 3, and multiplication/division facts should be mastered by the end of Grade 5.

**What about "Drill"?**

"Repeated practice, or 'drill' by itself may improve speed but it does not contribute to understanding and it is not sufficient to guarantee immediate recall."

**Should students memorize?**

"Children should learn their number facts. However, they would benefit from learning these facts by using an increasingly sophisticated series of strategies rather than by jumping directly to memorization."

**What is the best way for students to learn math facts?**

"Strategies help students find an answer even if they forget what was memorized. Discussing math fact strategies focuses attention on number sense, operations, patterns, properties, and other critical number concepts."

**Should I introduce algorithms right away?**

As educators plan student learning experiences, it is important to focus on student understanding and when making the subsequent introduction of the algorithms, and the application of skills in problem-solving contexts both in and outside the classroom. The goal should be to provide opportunities for students to come to recognize, internally, how numbers and operations work. Only then should formal methods, such as algorithms, be introduced, modeled, and supported.

**What about timed tests?**

Research shows that, for many students, timed testing may be less constructive, as it fosters math anxiety, which negatively impacts the student's efficiency and accuracy.

**What supports do students need to learn math facts?**

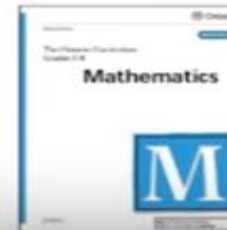
Most students learn math facts gradually, over a number of years, using tools such as manipulatives and calculators.



# FUN da MENTAL MATH

October 26, 2018

Professional Activity Day



0:01 / 8:35

Thames Valley District School Board

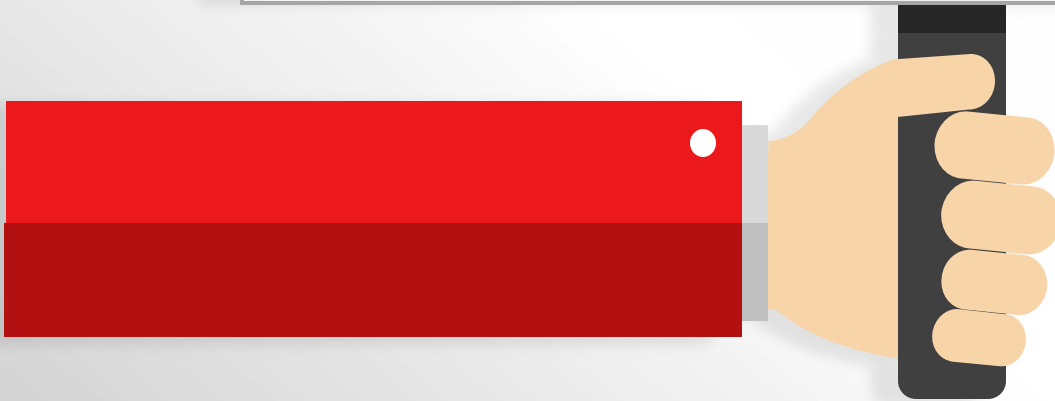
We build each student's tomorrow, every day.



<https://drive.google.com/drive/folders/1vyiawziPDrX7i5K14FsCfEke87WT7CRh>



# Focusing on Leading the Math in Schools with Principals



# "Digging Deeper" Administrator Sessions

## Regional Data Sessions for PVP



**Session #1:** 115 Elementary Administrators attended

**Session #2:** 105 Administrators attended

**Locations:** Strathroy, Woodstock, St. Thomas, London,  
Mount Brydges, Aylmer

# Digging Deeper into EQAO

## Big Ideas in Action

- ✓ Understand large scale assessment data
- ✓ Find trends and areas of growth in EQAO data to determine next steps
- ✓ Analyze different types of questions and skills assessed (Knowledge, Application, Thinking)
- ✓ Determine a plan of action that supports the overall School Improvement Plan



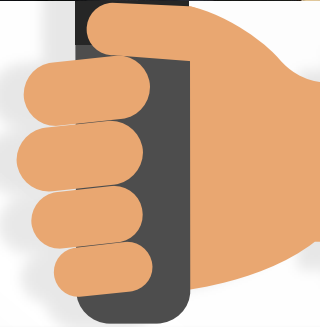
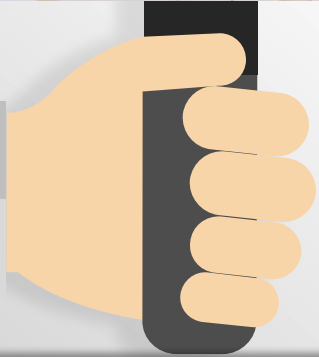
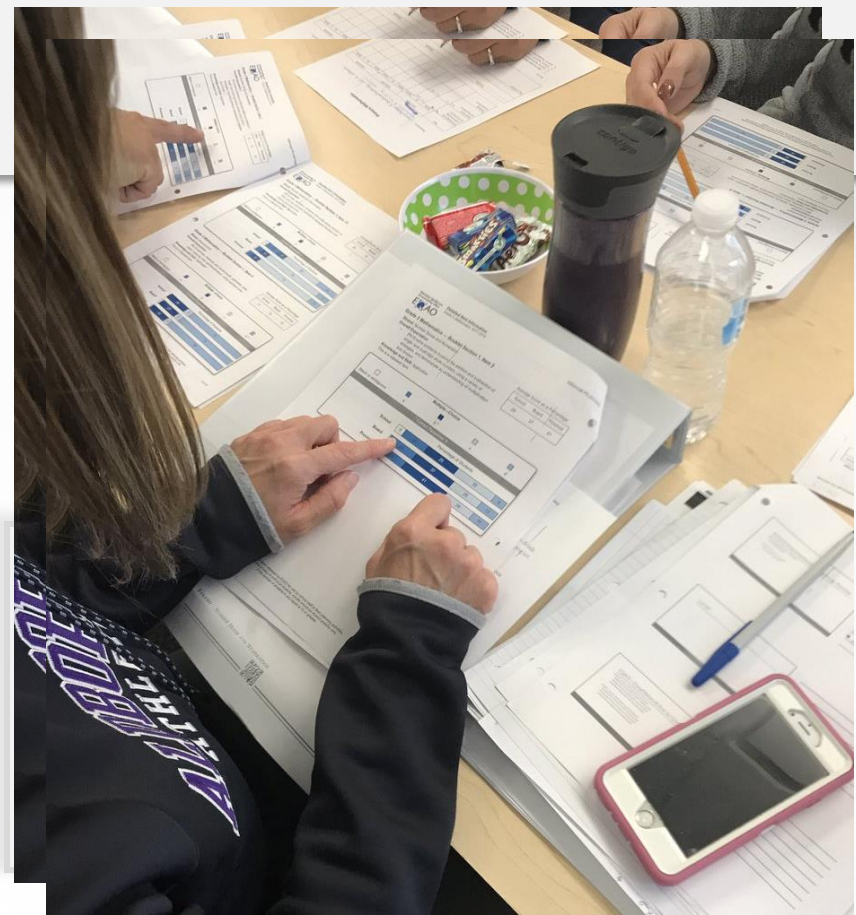
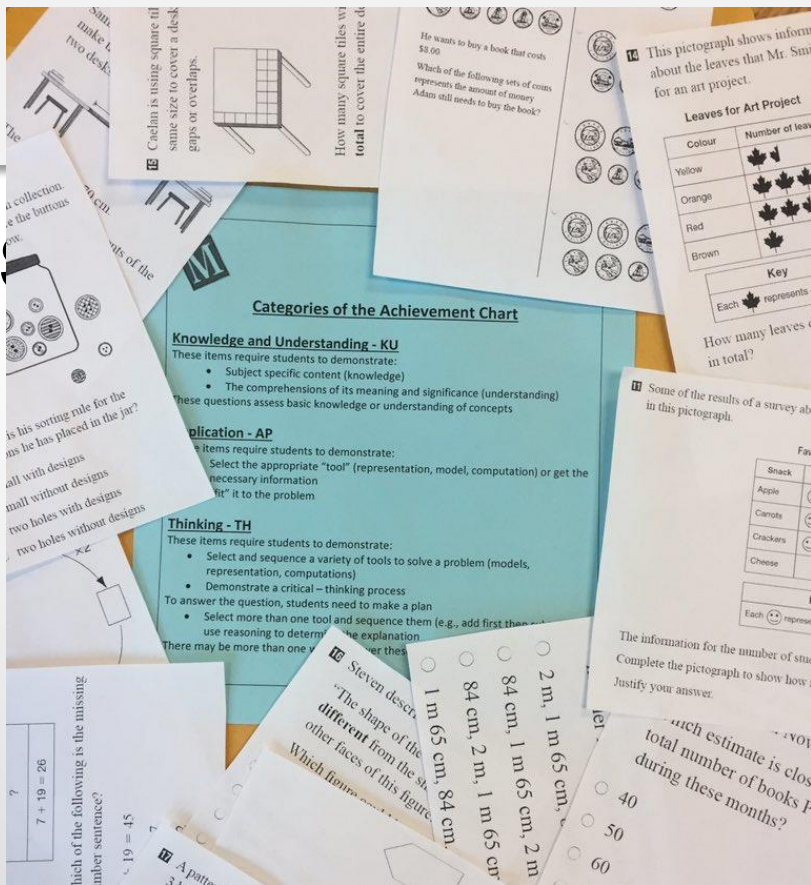
# Digging Deeper - Now What?

## Big Ideas in Action

- ✓ Understand how EQAO questions are "mapped" to the curriculum
- ✓ Connect EQAO questions directly to the Ontario Curriculum
- ✓ Develop connections of math concepts from grade to grade
- ✓ Focusing on Fundamentals of Math (e.g., equality)
- ✓ Develop a plan to ensure EQAO is a "whole school" responsibility



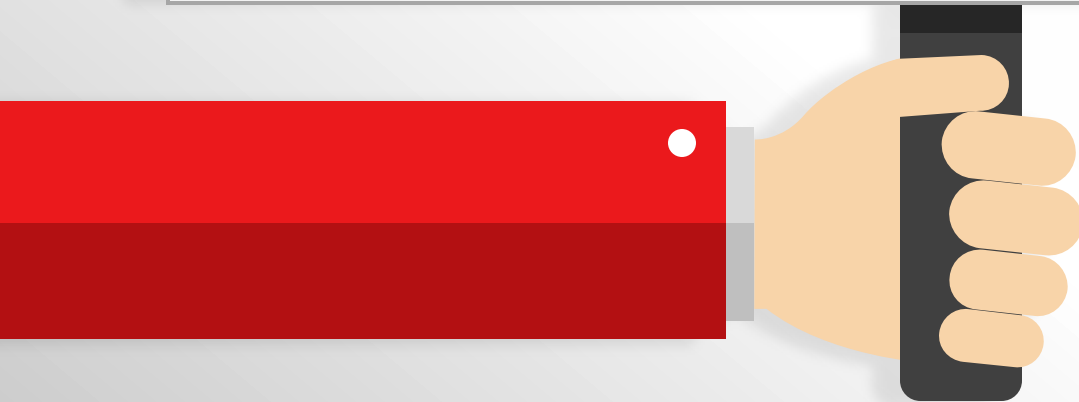










# Literacy Supports

**Where are we going...**



# Mobilizing our Knowledge

-  **Aligning all of our work with a comprehensive/ balanced literacy framework**
-  **Grade 3 Writing Professional Learning Series**
-  **DRA training and follow-up session – Using Data to Drive Instruction**
-  **New to Grade 3 and Grade 6 EQAO Session**



# Mobilizing our Knowledge



5

**Gap Closing Professional Learning Series for Grade 7-10 teachers**



6

**Grade 9 Reading Assessment Professional Learning Project - Degrees of Reading Power (DRP)**



7





**Secondary School-Based Literacy Team Supports – Unpacking Data (e.g., OSSLT, DRP)**



8

**Job-embedded professional learning opportunities by our Learning Coordinators and Instructional Coaches**

## Mobilizing our Knowledge

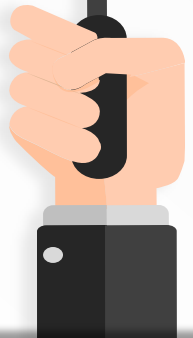
-  **OSSLT Data Sessions for Administrators – Part 1 and 2**
-  **Providing Adolescent Literacy Resources to School-based Literacy Teams**
-  **Professional Learning Sessions for English Teachers**
-  **Developing a TVDSB K-12 Literacy Plan**

*These actions align with our Operational Plan Objective of Improving Graduation Rate.*

# Digging Deeper Into EQAO – Reading

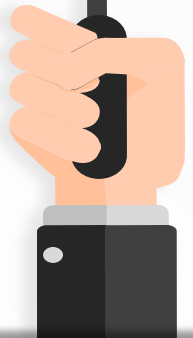
## The Big 6

- 1) Reading a variety of texts
- 2) Using graphic text features
- 3) Connecting literacy to the content areas
- 4) Uncovering big ideas and messages in text
- 5) Addressing character traits in texts
- 6) Asking higher order thinking questions consistently



# Digging Deeper Into EQAO – Writing

- 1) Identifying and using clues in prompts
- 2) Generating ideas for purposeful writing
- 3) Organizing ideas using a variety of tools and strategies
- 4) Modelling the writing process and building students' stamina

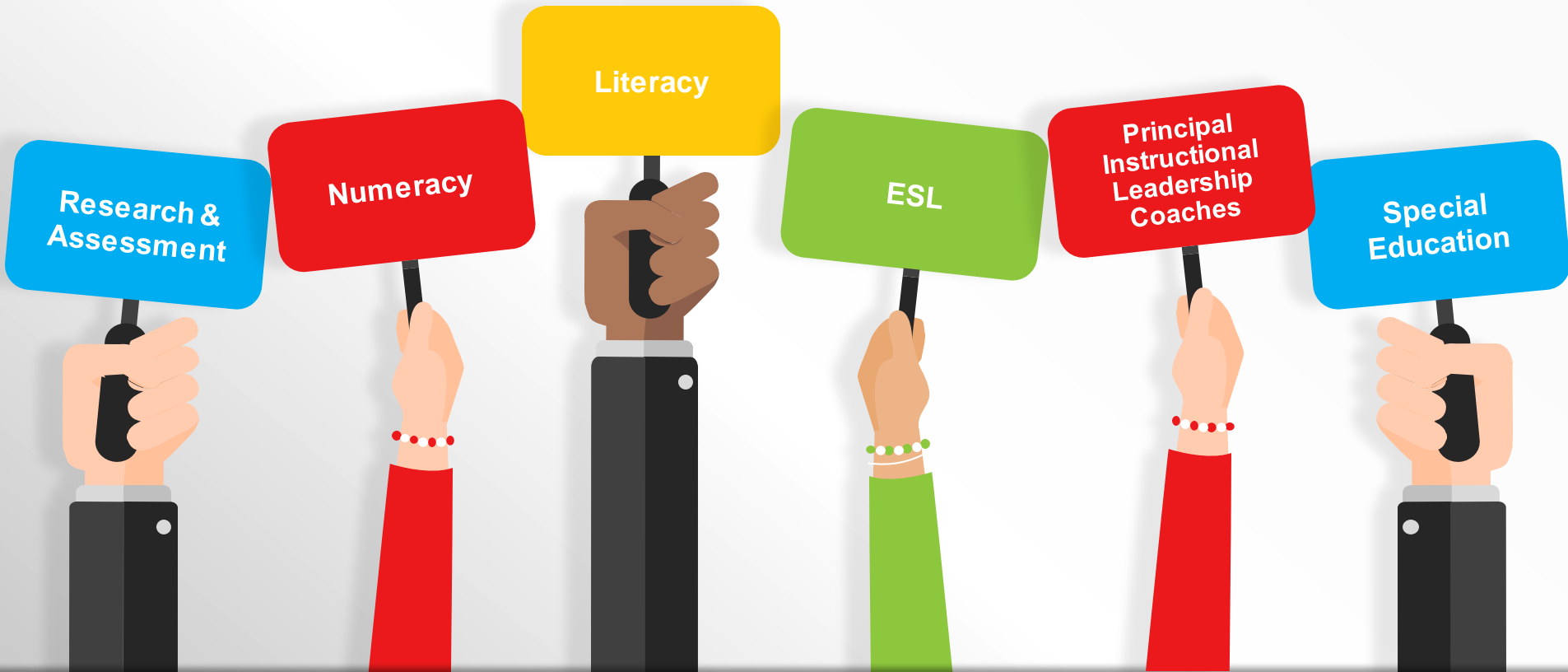


# Special Education/English Language Learners

- Review of system reports of accommodations and special provisions provided to students (Superintendents and Learning Supervisors/ Departments)
- Follow up with school administration
- Planning for 2019 and new EQAO Policies for accommodations and special provisions

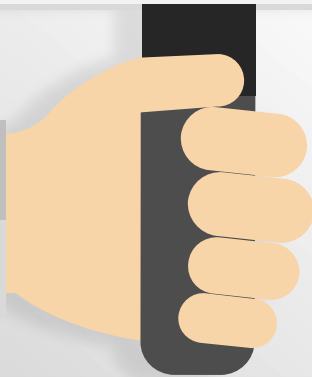


# School-based EQAO Strategy Team

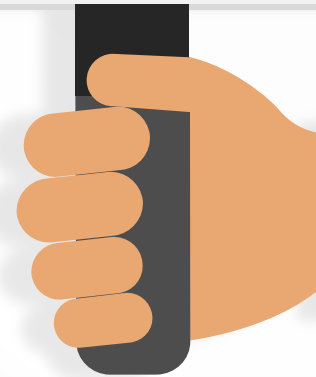


# School-based Connections to the Operational Plan

**Improve Student  
Achievement in  
Mathematics**



**Improve our Five Year  
Graduation Rate**



# Board Supports for School-based Plan

- Alignment of Roadmap for School Improvement with Board Improvement Plan and Operational Plan
- Digging Deeper sessions for Principals and Vice-Principals
- Principal and School Team Mathematics Professional Learning Series





# Westmount PS School Improvement Strategy

- Roadmap for School Improvement
- Teacher and Student Look-fors
- P/VP Classroom Walkthroughs and Feedback
- Staff initiated evidence of look-fors



# Westmount PS School Student Monitoring

- Literacy/Numeracy Team meetings
- Tracking of individual student progress in literacy and numeracy
- Targeted interventions for struggling students
- Data driven instructional practice and support



# Westmount PS School Student Monitoring

- Literacy/Numeracy Team meetings
- Tracking of individual student progress in literacy and numeracy
- Targeted interventions for struggling students
- Data driven instructional practice and support



# Westmount PS School Student Monitoring

Westmount Tracking Sheet						Class Name: _____																
Class DRA Tracking		JK/SK					GRADE 1						GRADE 2				GRADE 3				GRADE 4	
Student Name	Grade	A	1	2	3	4	6	8	10	12	14	16	18	20	24	28	30	34	38	40 Fiction	40 Non Fiction	
1) _____	ESL																					
2) _____	ESL																					
3) _____	ESL																					
4) _____	ESL																					
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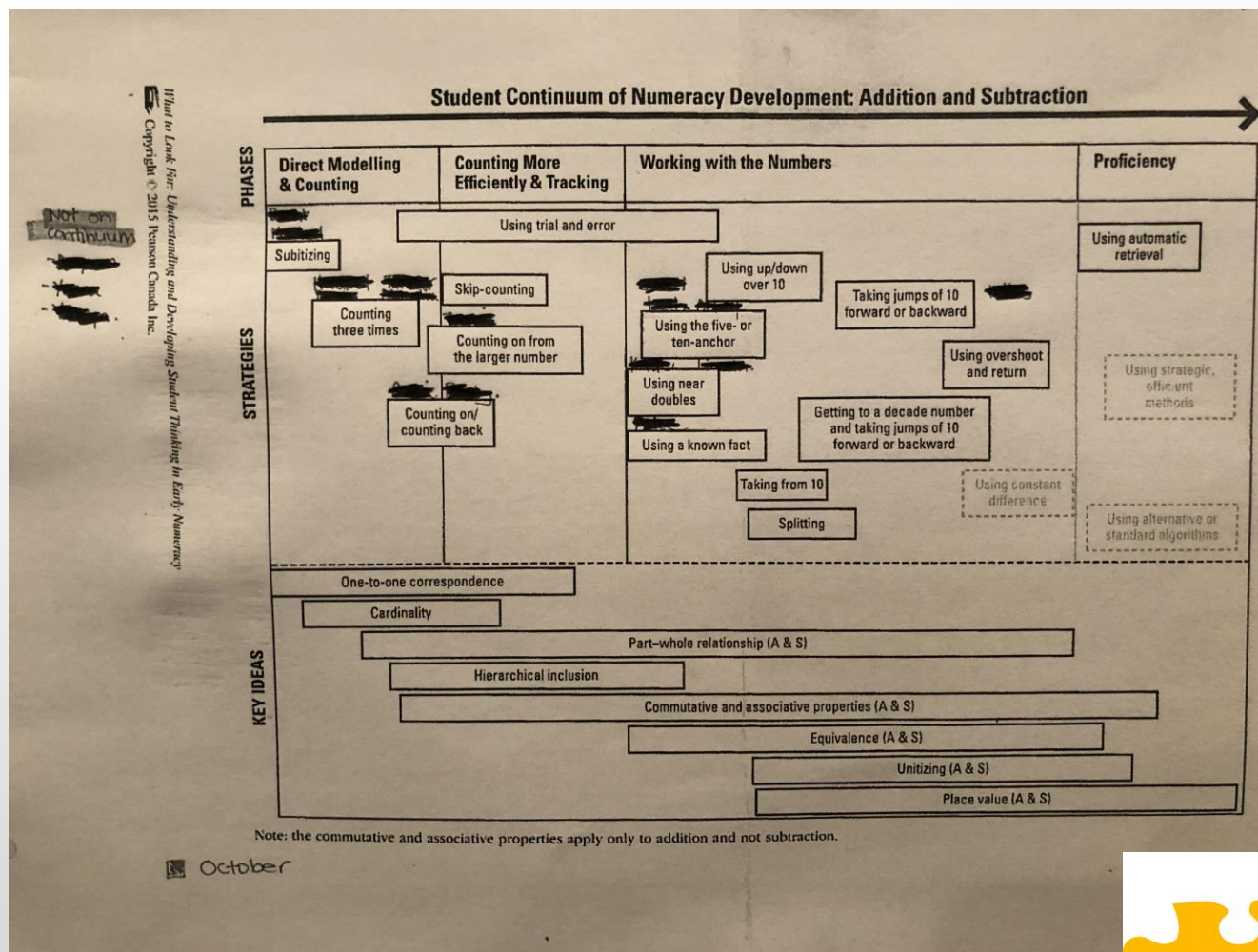
November

Feb.  May





# Westmount PS School Student Monitoring



*Working together to ensure our collaborative support our students'*



Questions?

