



Leading Mathematics K - 12

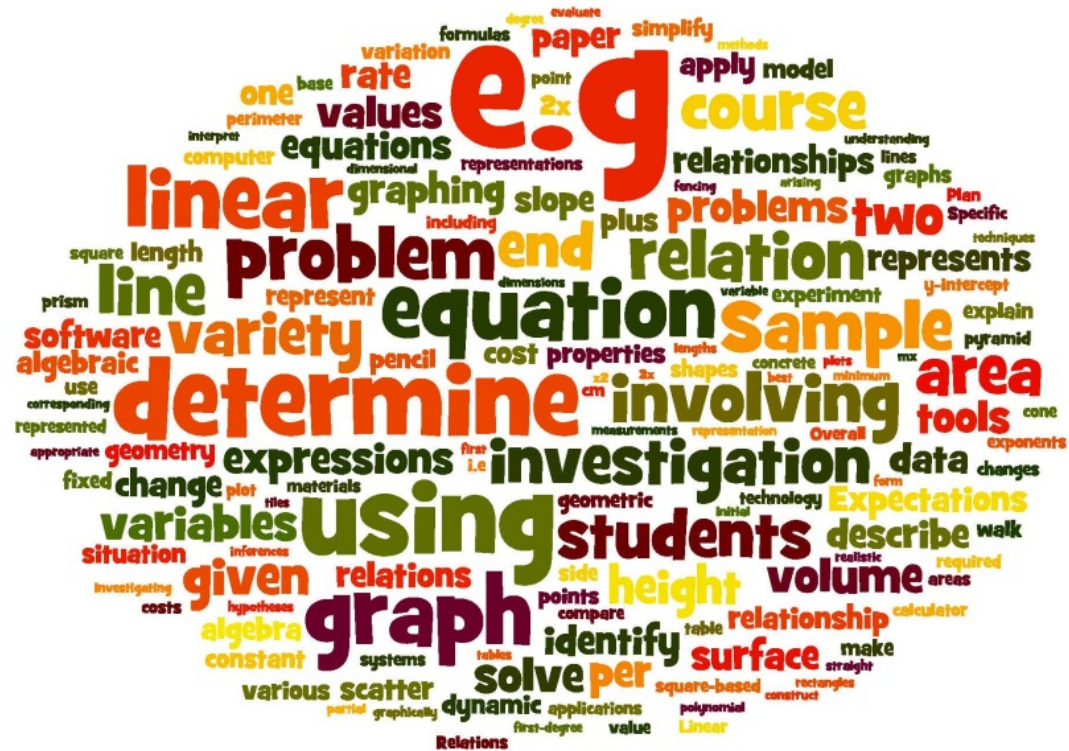
“[Principals are] never going to have a credible conversation with a teacher about practice unless [they’ve] actually been doing it, repeating it, and getting good at it.”

– Elmore, R. (2010, Summer).

- 1) Math \neq Computation; Math = Math Processes
- 2) Making Student Thinking Visible
- 3) Assessment That Matches & Supports Student Learning
- 4) Closing the Gaps In Student Achievement
- 5) Monitoring
- 6) Professional Learning for Leaders
- 7) Alignment

Jan Olson, Assistant to the Superintendent,
Bluewater District School Board

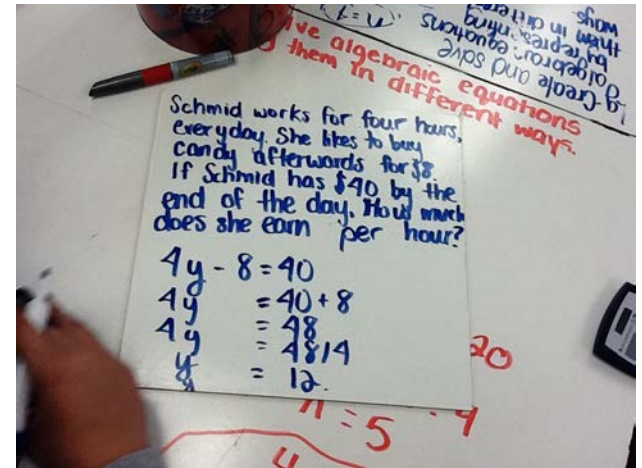
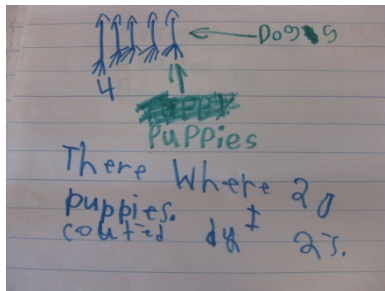
Math \neq Computation; Math = Math Processes



Student Work Study Initiative

Assess: To Sit Beside

- 1) Mathematical Processes
- 2) Student Voice
- 3) Less evidence of teaching and more evidence of learning
- 4) Stop looking at the teacher for the answers and start asking students for the answers



Assessment That Matches & Supports Student Learning

First 5

Final Geometry Test

Learning Expectations:

- Exploring the relationships of the angles within triangles, intersecting lines, and parallel lines.

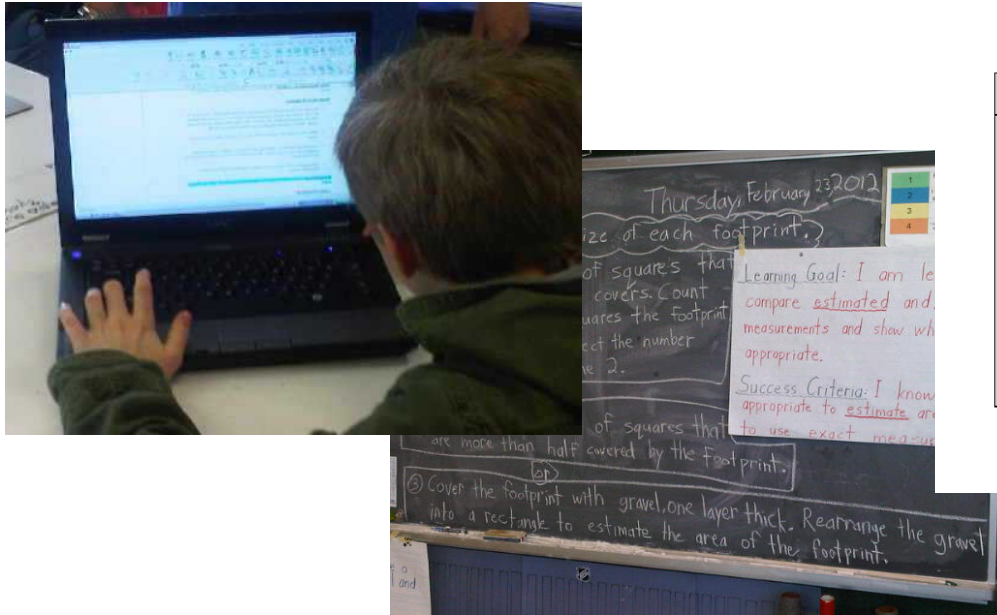
Test Question:

Create your own geometric question involving a variety of angles and solve for their measurements.

Success Criteria:

- Be able to show examples of supplementary, complementary and opposite angles theorem.
- Show all of your works and thoughts.
- Create your own math word wall on your paper.
- Be able to find inner angles of triangles (sum of Interior Angle Theorem).
- Be able to Identify Z and F patterns within parallel lines intersected by a transversal.
- Use your protractor the least amount of times as possible.

Closing the Gaps in Student Achievement



Grade Level Continuum – Correlated to Course of Study

Unit 1 – Number Sense

Big Ideas (Dr. Marian Small – Big Ideas)	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
1. A number tells how much or how many.	1M1F: represent, compare, and order whole numbers to 31, using a variety of tools and contexts.	2M1F: represent, compare, and order whole numbers to 50, using a variety of tools.	3M1F: represent, compare, and order whole numbers to 100, using a variety of tools.	4M1F: represent, compare, and order whole numbers to 10,000, using a variety of tools.	5M1F: represent, compare, and order whole numbers and decimal numbers from 0.01 to 100,000, using a variety of tools.	6M1F: represent, compare, and order whole numbers and decimal numbers from 0.001 to 1,000,000, using a variety of tools.	7M1F: explain the relationship between exponential notation and the measurement of area and volume.	8M1F: express repeated multiplication using exponential notation.
2. Classifying number provides information about the characteristics of the numbers.	1M1Z: read and print in words whole numbers to 31, using meaningful contexts.	2M1Z: read and print in words whole numbers to one hundred, using meaningful contexts.	3M1Z: read and print in words whole numbers to one hundred, using meaningful contexts.	4M1Z: read and print in words whole numbers to one hundred thousand, using meaningful contexts.	5M1Z: read and print in words whole numbers to one hundred thousand, using meaningful contexts.	6M1Z: read and print in words whole numbers to one hundred thousand, using meaningful contexts.		8M1Z: represent whole numbers in expanded form using powers of ten.
3. There are different, but equivalent, representations of a number.	1M1E: demonstrate, using concrete materials, the concept of conservation of number.		3M1E: identify and represent the value of a digit in a number according to its position in the number.	4M1E: demonstrate an understanding of place value in whole numbers using a variety of tools and strategies.	5M1E: demonstrate an understanding of place value in whole numbers and decimal numbers from 0.01 to 100,000, using a variety of tools and strategies.	6M1E: demonstrate an understanding of place value in whole numbers and decimal numbers from 0.001 to 1,000,000, using a variety of tools and strategies.	7M1E: represent, compare, and order decimals to tenths and hundredths, using a variety of tools.	8M1E: represent, compare, and order rational numbers (i.e. positive and negative fractions and decimals to thousandths).
4. Numbers are compared in many ways. Sometimes they are compared to each other, other times they are compared to benchmark numbers.	1M1C: use ordinal numbers to thirty-first in meaningful contexts.			4M1C: read and print in words whole numbers to one thousand, using meaningful contexts.	5M1C: read and print in words whole numbers to ten thousand, using meaningful contexts.			8M1C: translate between equivalent forms of a number (i.e. fractions, decimal, percent).

Baroody and Hume (1991) found that “mathematics instruction for all children, including those with LD, should...promote a broad range of mathematical concepts that go beyond computation.”

Monitoring



PEDAGOGICAL SUPPORT

Teacher:	Date:
Lesson:	
FOCUSED INSTRUCTION	
Learning Goals (a)	

MONITORING <i>(Leithwood's Elements of Focused Instruction)</i>
(a) The goals for each lesson or unit of instruction are clear to both teacher and students;
(b) These goals are quite challenging for students, relative to

Preparing our students today for the world of tomorrow

DRAFT

Professional Learning for Leaders



Google™ Custom Search

Site Search

Home Teachers Professional Learning Facilitators School Administrators Superintendents Contact Us

Math GAINS Home >

Learning Materials ▾

- ▶ CLIPS
- ▶ Continuum & Connections >
- ▶ EQAO Supports
- ▶ Gap Closing
- ▶ Guides to Effective Instruction K-6
- ▶ Manipulatives Supports >
- ▶ Math Processes >
- ▶ Summative Units >
- ▶ Technology Supports >
- ▶ TIPS
- ▶ WINS >

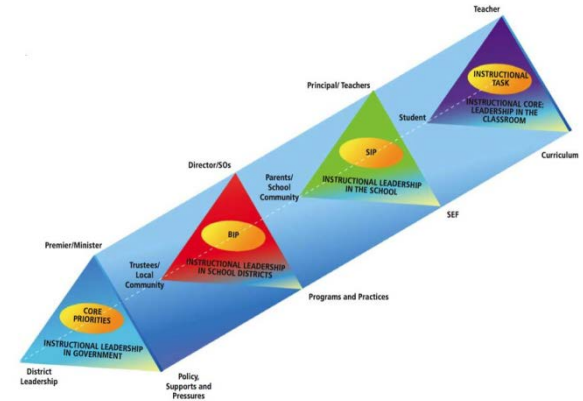
School Administrators

Core Leadership Capacity	Sample domains and related practices of the Ontario Leadership Framework, with links to EduGAINS resources and suggested uses of these resources in developing and practising these practices		
1. Setting Goals	Setting Directions	Leading the Instructional Program	Securing Accountability
	Ensures the vision is clearly articulated, shared, understood and acted upon by all	Fosters a commitment to equity of outcome and to closing the achievement gap	Aligns school targets with board and provincial targets
2. Aligning Resources with Priorities	Setting Directions	Leading the Instructional Program	Securing Accountability
	Ensures creativity, innovation and the use of appropriate technologies to achieve excellence	Ensures that learning is at the centre of planning and resource management	Makes connections to ministry goals to strengthen commitment to school improvement efforts
3. Promoting Collaborative Learning Cultures	Building Relationships and Developing People	Developing the Organization	Leading the Instructional Program
	Acknowledges and celebrates the achievements of individuals and teams	Builds a collaborative learning culture within the school and actively engages with other schools to build effective learning communities	Develops professional learning communities to support school improvement
4. Using Data	Setting Directions	Leading the Instructional Program	Securing Accountability



Alignment

- BIP – SIP
- IEP's
- Report Cards
- SIM





Our Moral Imperative!

**Breaking the Bystander
Cycle:**

**Moving Administrators from
Bystander to Intervener
(Shona Anderson, 2008)**