



SPECIAL EDUCATION ADVISORY COMMITTEE

AGENDA

December 14, 2017

6:00 p.m.

Grimsby Lincoln Room – Education Centre

STUDENT VOICE

1. Quorum / Welcome / Introductions Linda Morrice
2. Approval of the Agenda of December 14, 2017 Linda Morrice
3. Approval of the November 9, 2017 Linda Morrice
4. Business Arising from the Minutes of November 9, 2017 Linda Morrice
5. Elementary Math Presentation Melanie Sendzik & Jamie Lambert
6. SEAC Agency Community Member Presentations Brent Beaudoin & Shannon MacDonald
8. Association and Board Information (please bring written submission)
9. Correspondence
10. Questions and Answers
11. Adjournment

NEXT MEETING: January 11, 2018 – Grimsby Lincoln Room, 6:00 p.m.

DSBN Math Update with DreamBox

SEAC - Thursday, December 14, 2017

Math Goal

A goal of elementary mathematics education:
To develop life-long mathematicians who have the knowledge and understanding, thinking and reasoning skills, confidence and perseverance to solve problems in their current and future lives.

Scope & Sequence

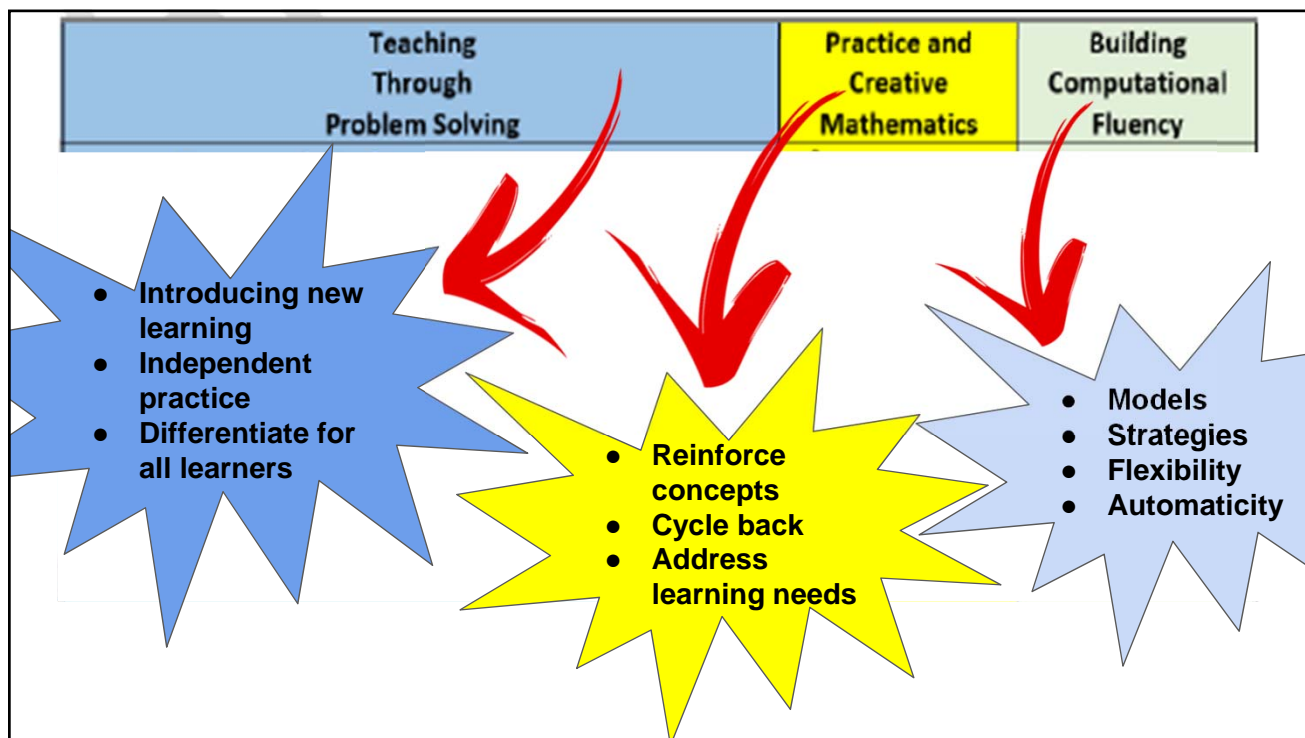
- Fosters collaboration amongst colleagues
- Supports students who are transient
- Ensures that all 5 strands of the curriculum are addressed in instruction

DSBN Grades 1-8 Scope and Sequence - Mathematics 2014/2017

Grade	Strand 1: Number	Strand 2: Algebra	Strand 3: Geometry	Strand 4: Measurement	Strand 5: Data Management and Probability
Grade 1	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 1.12, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.28, 1.29, 1.30, 1.31, 1.32, 1.33, 1.34, 1.35, 1.36, 1.37, 1.38, 1.39, 1.40, 1.41, 1.42, 1.43, 1.44, 1.45, 1.46, 1.47, 1.48, 1.49, 1.50, 1.51, 1.52, 1.53, 1.54, 1.55, 1.56, 1.57, 1.58, 1.59, 1.60, 1.61, 1.62, 1.63, 1.64, 1.65, 1.66, 1.67, 1.68, 1.69, 1.70, 1.71, 1.72, 1.73, 1.74, 1.75, 1.76, 1.77, 1.78, 1.79, 1.80, 1.81, 1.82, 1.83, 1.84, 1.85, 1.86, 1.87, 1.88, 1.89, 1.90, 1.91, 1.92, 1.93, 1.94, 1.95, 1.96, 1.97, 1.98, 1.99, 2.00	2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20, 2.21, 2.22, 2.23, 2.24, 2.25, 2.26, 2.27, 2.28, 2.29, 2.30, 2.31, 2.32, 2.33, 2.34, 2.35, 2.36, 2.37, 2.38, 2.39, 2.40, 2.41, 2.42, 2.43, 2.44, 2.45, 2.46, 2.47, 2.48, 2.49, 2.50, 2.51, 2.52, 2.53, 2.54, 2.55, 2.56, 2.57, 2.58, 2.59, 2.60, 2.61, 2.62, 2.63, 2.64, 2.65, 2.66, 2.67, 2.68, 2.69, 2.70, 2.71, 2.72, 2.73, 2.74, 2.75, 2.76, 2.77, 2.78, 2.79, 2.80, 2.81, 2.82, 2.83, 2.84, 2.85, 2.86, 2.87, 2.88, 2.89, 2.90, 2.91, 2.92, 2.93, 2.94, 2.95, 2.96, 2.97, 2.98, 2.99, 3.00	3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, 3.17, 3.18, 3.19, 3.20, 3.21, 3.22, 3.23, 3.24, 3.25, 3.26, 3.27, 3.28, 3.29, 3.30, 3.31, 3.32, 3.33, 3.34, 3.35, 3.36, 3.37, 3.38, 3.39, 3.40, 3.41, 3.42, 3.43, 3.44, 3.45, 3.46, 3.47, 3.48, 3.49, 3.50, 3.51, 3.52, 3.53, 3.54, 3.55, 3.56, 3.57, 3.58, 3.59, 3.60, 3.61, 3.62, 3.63, 3.64, 3.65, 3.66, 3.67, 3.68, 3.69, 3.70, 3.71, 3.72, 3.73, 3.74, 3.75, 3.76, 3.77, 3.78, 3.79, 3.80, 3.81, 3.82, 3.83, 3.84, 3.85, 3.86, 3.87, 3.88, 3.89, 3.90, 3.91, 3.92, 3.93, 3.94, 3.95, 3.96, 3.97, 3.98, 3.99, 4.00	4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 4.21, 4.22, 4.23, 4.24, 4.25, 4.26, 4.27, 4.28, 4.29, 4.30, 4.31, 4.32, 4.33, 4.34, 4.35, 4.36, 4.37, 4.38, 4.39, 4.40, 4.41, 4.42, 4.43, 4.44, 4.45, 4.46, 4.47, 4.48, 4.49, 4.50, 4.51, 4.52, 4.53, 4.54, 4.55, 4.56, 4.57, 4.58, 4.59, 4.60, 4.61, 4.62, 4.63, 4.64, 4.65, 4.66, 4.67, 4.68, 4.69, 4.70, 4.71, 4.72, 4.73, 4.74, 4.75, 4.76, 4.77, 4.78, 4.79, 4.80, 4.81, 4.82, 4.83, 4.84, 4.85, 4.86, 4.87, 4.88, 4.89, 4.90, 4.91, 4.92, 4.93, 4.94, 4.95, 4.96, 4.97, 4.98, 4.99, 5.00	5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 5.21, 5.22, 5.23, 5.24, 5.25, 5.26, 5.27, 5.28, 5.29, 5.30, 5.31, 5.32, 5.33, 5.34, 5.35, 5.36, 5.37, 5.38, 5.39, 5.40, 5.41, 5.42, 5.43, 5.44, 5.45, 5.46, 5.47, 5.48, 5.49, 5.50, 5.51, 5.52, 5.53, 5.54, 5.55, 5.56, 5.57, 5.58, 5.59, 5.60, 5.61, 5.62, 5.63, 5.64, 5.65, 5.66, 5.67, 5.68, 5.69, 5.70, 5.71, 5.72, 5.73, 5.74, 5.75, 5.76, 5.77, 5.78, 5.79, 5.80, 5.81, 5.82, 5.83, 5.84, 5.85, 5.86, 5.87, 5.88, 5.89, 5.90, 5.91, 5.92, 5.93, 5.94, 5.95, 5.96, 5.97, 5.98, 5.99, 6.00

100-minute block

Most class time should be spent focusing on developing mathematical understanding of current Scope & Sequence topic		Some class time should be spent flexibly but explicitly engaging students in opportunities to develop the characteristics and skills of mathematicians, as well as revisiting and connecting concepts throughout the year	
Teaching through Problem Solving		Building Computational Fluency	
Based on the Scope & Sequence <ul style="list-style-type: none"> Focusing on all strands relatively equally Focusing on 'Developing Mathematical Understanding' while 'Nurturing the Mathematician' Engaging students through the Mathematical Process expectations on a daily basis Developing Quantity Relationships and Geometric Relationships through the Contexts of the other Strands (Measurement, Patterning, Data Management and Probability) Focusing on Spatial Reasoning, Proportional Reasoning, Algebraic Reasoning where appropriate 		Engaging the Mathematician (in content other than the current focus from Scope & Sequence) <ul style="list-style-type: none"> Building the Characteristics of Mathematicians <ul style="list-style-type: none"> Focusing on Building Mathematical Reasoning Building Spatial Reasoning Connecting Spatial Reasoning with Quantity Relationships Revisiting and Connecting Concepts throughout the year (including revisiting vocabulary) 	
Reflective Questions: <ul style="list-style-type: none"> What do the verbs suggest instruction should look like for the students (e.g., through investigation)? What problems and tasks will engage students in being mathematicians and being able to make sense of these concepts? Which mathematical skills? How will I connect various mathematical representations? How can help to make this concept visual for my students to help them make sense of this learning? What mathematical process expectations might I focus on within these lessons? What other concepts does this connect to? How could I use that to further develop or support the learning of this concept? How should I be using calculators & technology within this concept? How will I consolidate this/these lessons? What will I focus on? What do students in my grade need to know, understand and be able to do? How am I developing operational sense and calculator skills within this/these lessons and contexts? How will I be intentional in gathering and using formative assessment to inform my next steps within the learning of this concept? How and when will I provide descriptive feedback about written solutions? How and when might I need to offer a few more and different experiences for some of my students? 		Reflective Questions: <ul style="list-style-type: none"> What numbers should I focus my number work in? What strategies are my students currently developing? Need to consolidate or revisit? Are there computations that will help students to better be able to learn the upcoming concepts? Are there computations that were getting in the way of students to develop previous concepts? How am I ensuring that the number work I choose are supporting ALL students in the class? What strategies (e.g., distributive property) or models (e.g., array) do my students use? What models support thinking in other areas? 	
Resources / Ideas: <ul style="list-style-type: none"> Ontario Mathematics Curriculum Guides to Effective Instruction & TIPS4RM Teaching Student-Centered Mathematics by Van de Walle Big Ideas for Teaching Mathematics by Dr. Small Contexts for Learning Units by Esposit From Patterns to Algebra by Beatty & Bruce Math Expressions by Marks-Kopan Textbooks FirstClass > Mathematics K-8 		Resources / Ideas: <ul style="list-style-type: none"> Games Puzzles Spatial Reasoning Tasks / Taking Shape by Bruce Tangrams / Pentominoes Mathphoto 16 Pictures / Eyes on Math by Dr. Small Dynamic Geometry Software (Junior/Intermediate) Various websites / activities (Estimation180, word problems, puzzles, open middle problems, visual patterns, jigsaw puzzles) 	
Notes from our newsletter <ul style="list-style-type: none"> "Planning to teach through Problem-solving" June 2015 p. 1-5 Content-specific visual/spatial representations which have been addressed in 20 issues of the DSBN Mathematics Newsletters (available in First Class) References within the newsletter to commonly used and suggested resources available to DSBN teachers which contain 3 Part Problem Solving Lessons and/or visual/spatial based questions designed to connect mathematical concepts and visual/spatial representations 		Notes from our newsletter <ul style="list-style-type: none"> "Building a Mathematical Community" Sept 2015 p. 2 "Estimation" November 2015 p. 4-6 "Practice and Creative Mathematics" Oct 2015 p. 9-12 "Building a Math Talk Community" Oct 2015 p. 12-14 	
Notes from our newsletter <ul style="list-style-type: none"> Strings Number Talks Number of the Day Counting Circles DreamBox & DreamBox Teacher Tools Fraction Talks 24 Game Thinking Blocks Card & Dice Games 		Notes from our newsletter <ul style="list-style-type: none"> Strings Number Talks Number of the Day DreamBox "Number Talks/Strings/Mini-Lessons" Feb 2015 p. 12 	



Central Support for Schools

- 0 Instructional coaches (Central- and Area-based PD)
- 0 Math newsletters
- 0 Research-based resources (provision and review during central sessions)
 - Van de Walle
 - Guides to Effective Instruction
 - Cathy Fosnot
 - Small
 - Beatty
 - Monographs
 - Textbooks
 - Manipulatives
 - Elementary Math Support Document
 - Interactive Math Document
 - DreamBox
- Mid-Year Math Assessment (Grades 3 and 6)

PAYING ATTENTION TO SPATIAL K-12 REASONING

which mathematical skills – are areas for future research. Researchers are particularly interested in how spatial ability supports numeric proficiency, and recent research in mathematics education, psychology and even neuroscience is attempting to map these relationships. It also appears, for example, that spatial ability is connected to understanding numeric quantities and to early numeracy performance (for a summary of this research, see Drefs and D'Amour, 2014). Research also shows that spatial skills might be predictive of later mathematics achievement. For example, a recent longitudinal study with three-year-olds found evidence that spatial skills were even more important than early mathematics skills and vocabulary at predicting mathematics performance at the age of five (Farmer et al., 2013). Studies with adolescents further highlight the role of spatial thinking in predicting later academic success. In a longitudinal study



Why Dreambox?

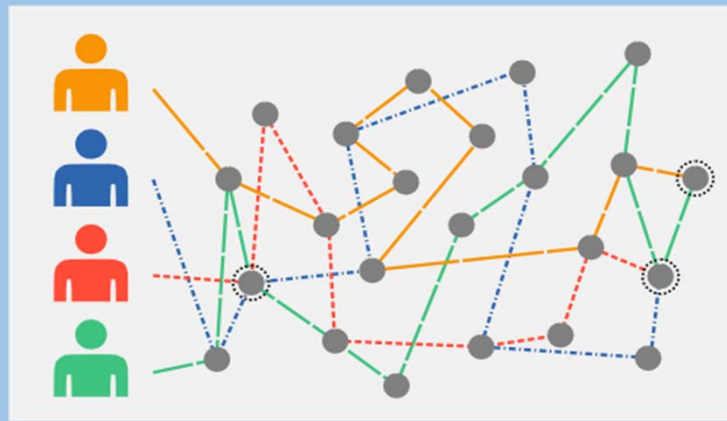
<http://www.dreambox.com/why-dreambox>



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Go to: www.dreambox.com

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