
Specialized Math in LCPS

— Parent Resource Services —
November 2019

Session Objectives:

- LCPS Special Education Office will articulate for parents the professional learning and implementation of specialized math instruction.
- Specialized Math Instructional facilitators will engage parents in hands on learning of strategies to support learners at home.

Today's Experience

Whole Group Focus Lesson: What is Specialized Math in LCPS?

Small Groups: (15-20 minute rotations)

- Erin Craddock: Algorithm Alternatives (Elementary & Middle)
- Aileen Crispbell: Math at Home (Elementary)
- Emily Stevens: Fun and Family Math Games (Elementary & Middle)
- Stacy Sefton: Dice Games (Elementary)

Reflection: PRS Exit Survey

Department on Instruction: Math Department Vision



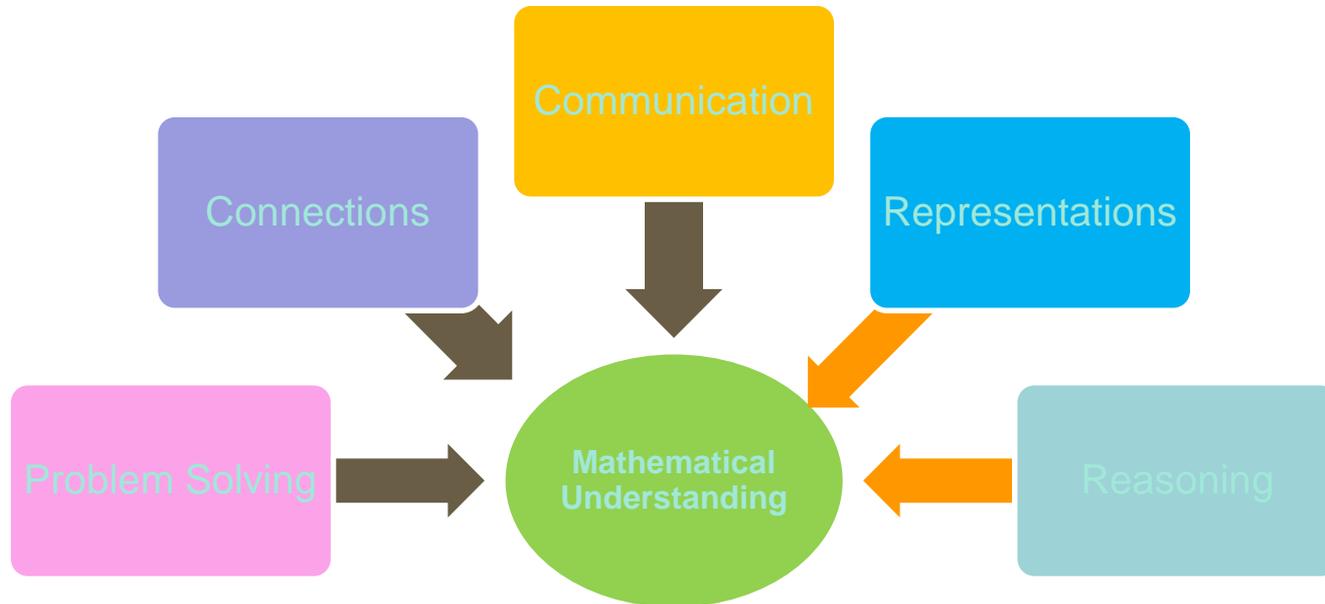
VDOE Mathematics Vision Statement

The vision for K-12 mathematics education in the Commonwealth of Virginia is that all students have **access** to **high-quality, equitable,** and **engaging** mathematics instruction. Students participate in **relevant learning opportunities** that develop both **conceptual and procedural understanding**. Teachers develop **classroom communities** that promote **student ownership** of learning through the use of **mathematical discourse, problem solving,** and **rich tasks**. Students and teachers exemplify **resilience** and a **growth mindset**, believing that all students can learn mathematics at high levels.

Mathematics Process Goals for Students

“The content of the mathematics standards is intended to support the five process goals for students”

- 2009 and 2016 *Mathematics Standards of Learning*



Profile of a Virginia Graduate



**VIRGINIA
IS FOR *all*
LEARNERS**

LCPS 5 C's



Critical Thinking
Communication
Collaboration
Creativity
Contribution

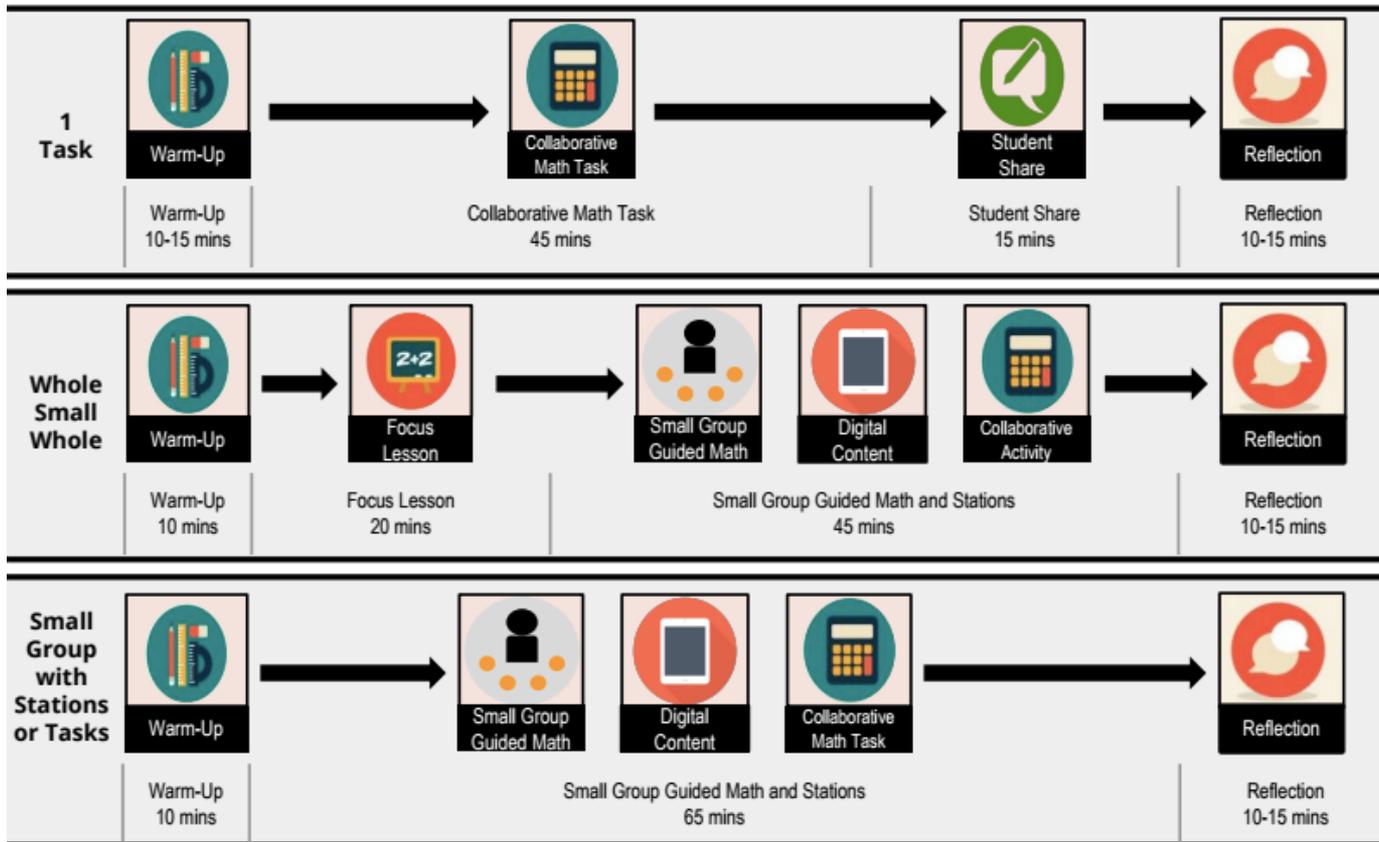
<http://bit.ly/MathSupport19>

Math Workshop Structures (Secondary)

ONE TASK Teacher Rotates & Facilitates		WHOLE – SMALL - WHOLE		SMALL GROUPS With Stations or Tasks	
approx. 15 min.	CLASSROOM ROUTINES/ NUMBER TALKS	approx. 15 min.	CLASSROOM ROUTINES/ NUMBER TALKS	approx. 15 min.	CLASSROOM ROUTINES/ NUMBER TALKS
approx. 45 min.	MATH TASK One task is given, students work in collaborative groups. The teacher moves to small groups and provokes thinking through asking good questions. This task typically has multiple entry points, allowing for all students to have access to this problem. This could be a parallel task or open-ended question, one that supports differentiation.	approx. 20 min.	FOCUS LESSON Whole group focus lesson that is well planned to allow for differentiation.	approx. 65 min.	GUIDED MATH Teacher meets with students in homogeneous groups (based on formative assessments) for small group instruction.
approx. 20 min.	STUDENT SHARE Students share out about the various strategies that were used. Students ask questions, clarify their thinking, modify their work, and add to their collection of strategies in their tool box.	approx. 45 min.	STATIONS STATIONS Students are working on engaging activities that are mathematically purposeful. These activities could be in the form of a single, cognitively demanding question or a variety of stations in which student choice is a factor.		STATIONS Students are working on engaging activities that are mathematically purposeful. These activities could be in the form of a single, cognitively demanding question or a variety of stations in which student choice is a factor.
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(adapted from work by Jennifer Lempp)

90 Minute Math Workshop Models



Minimum of 90 minutes suggested for each Workshop Model

What is specialized math instruction in LCPS?

Specialized Reading Math (SMI) is **targeted** instruction addressing one or more of the processes or strands of math. SMI is provided through a **framework of Tier 2 and Tier 3 MTSS-RTI, Math Workshop and/or Personalized Learning**. An entry point to this instruction is based upon **multiple data sources**, to target the student's individual areas of need. The nature of this instruction is evidenced-based specifically for students with disabilities and/or those in the general education program who are not responding to Tier I, Core Instruction.

SMI can be described as: **evidence-based, explicit, systematic and cumulative**. It includes a **language rich environment with real-world application, hands-on practice and demonstration of conceptual understandings, including math vocabulary**. SMI focuses on building **number sense**, using multiple strategies for representation. SMI **fills in learning gaps** by scaffolding through the use of **vertical articulation** and movement through **concrete, representational and abstract representations** of math concepts.

It is critical that SMI is accompanied by **progress monitoring** in order to ensure effectiveness in individual student's growth.

Guiding Principles in Specialized Math Implementation

- The greatest current need for student and teacher skill-sets include developing a foundation of math concepts, especially number sense.
- Specialized Math PD will include explicit connections to other instructional initiatives in LCPS, such as Math Workshop and Number Talks. SIF-Ms will also be RTI Coaches and/or support the RTI Math Team in the schools they serve.
- Specialized math instruction utilizes approaches that are best practices in **all** math instruction. Special educator's collaboration with general education teachers in the planning and delivery of instruction to students with disabilities is key.

Guiding Principles in Specialized Math Implementation

- Students with more significant disabilities, such as those on the ASOL curriculum, may require even further adaptations/modifications or direct instruction.
- Most students with high incidence disabilities should receive specialized math instruction through the core, while utilizing accommodations. Examples of this include, but are not limited to visuals, multiple strategies/models for solving equations, sentence stems, math vocabulary instruction and extended guided practice with feedback, then gradual release.

SY 2018-2019 Efforts and Accomplishments: Specialized Math Instruction

- Extensive collaboration with DOI in developing a plan for systemic development and support of evidence-based math practices
- PD provided through RTI Math Pilot Schools
- One special education teacher from 55 Elementary and Middle Schools trained in Number Sense and Teaching Students who Struggle in Math (K-8)
- Development of the position, Specialized Instructional Facilitator of Math.

Specialized Math Vision for SY 2019-2020

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Professional Learning for Teachers

Department of Instruction

- Math Workshop
- Number Talks

Office of Special Education

- Number Sense and Supporting Students Who Struggle with Math
- Math Practices
- Understanding Cognitive Processes to Create Differentiated Math Instruction
- Computational Fluency

SIF-M Description

Assists teachers and administrators in developing specialized knowledge in the area of mathematics. Ongoing and sustained professional learning experiences will provide support for the implementation of specialized approaches in mathematics instruction to build capacity among instructional staff. Data collection and analysis will be modeled with an emphasis on developing programs and services that are consistent with evidence-based practices and implemented with fidelity for successful student outcomes. The specialized instructional facilitator-mathematics will work side-by-side with classroom teachers, special education teachers and other staff for training, modeling, observing, monitoring and evaluating the delivery of specialized approaches.

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Questions?

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