



The Central Bucks Schools will provide all students with the academic and problem-solving skills essential for personal development, responsible citizenship, and life-long learning.

August 16, 2019

Dear Parents/Guardians,

During the 2016-2017 school year, 35 teachers and administrators reviewed elementary math resources. Ten programs were evaluated and the team determined two programs were worthy of further evaluation. These two programs, Go Math! and Math in Focus, were piloted in 54 elementary classrooms in the 2017 – 2018 school year to determine which set of resources best met the needs of our students. Throughout the process, student understanding of the concepts was monitored, and several surveys were provided to a variety of stakeholders to determine the best materials for our students in Central Bucks School District. During the 2018-2019 school year, a larger group of elementary classroom teachers continued to pilot Math in Focus resources, and all elementary teachers were trained to effectively use these resources to deliver our curriculum beginning in the 2019-2020 school year.

Although these resources do represent a change for our students and teachers, the content taught in your child's math program last year has prepared them to move into a Math in Focus classroom this school year. As is the case with any change, there will be an adjustment period for teachers and students, but this change will improve your child's understanding of mathematics and allow them to develop better problem-solving skills.

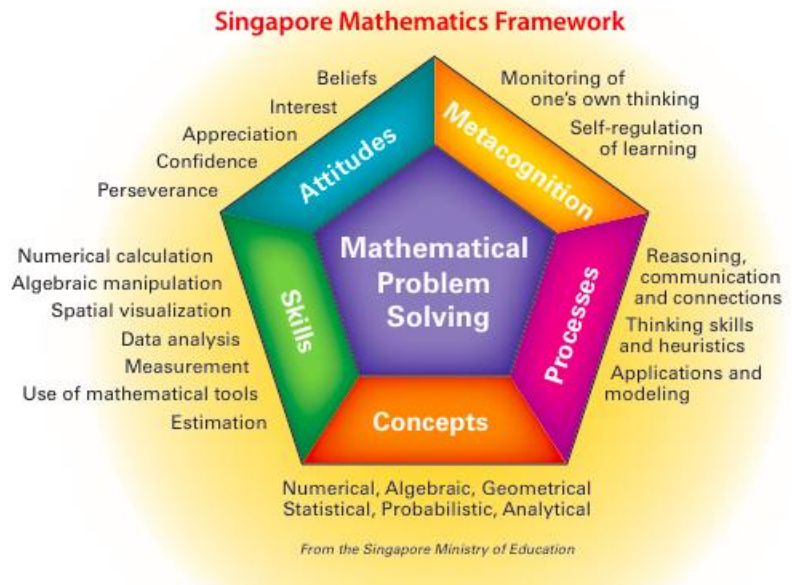
Math in Focus is used in 37 districts in Pennsylvania. The most notable districts include Downingtown Area School District, Great Valley School District, Methacton School District, Perkiomen Valley School District, Radnor Township School District, State College School District, Tredyffrin-Easttown School District, Unionville Chadds Ford School District, and West Chester School District. We are excited to join these districts in providing these high-quality resources for our students.

Most of what you see will be familiar to you, but on occasion there may be times that your child will bring home problem solving strategies that are unfamiliar to you. Please reach out to your child's teacher if you have a question.

On the following page, you will find information about the Math in Focus elementary math program. We look forward to a fun and exciting year of learning in the mathematics classroom. We are also planning an opportunity for you to visit the school and experience a lesson in your child's classroom. More information will be communicated in the coming weeks about that opportunity.

Sincerely,
Matthew Croyle
Principal
Jamison Elementary

Math in Focus®: Singapore Math by Marshall Cavendish, for Grades K-8, is the U.S. edition of Singapore’s most widely used curriculum, bringing Singapore’s effective approach to mathematics to U.S. classrooms. *Math in Focus®* is based on the curriculum and pedagogy in Singapore. Singapore math emphasizes problem solving and positive attitudes toward mathematics, while focusing on student development of skills, concepts, process and metacognition. Through many revisions, Singapore has narrowed their curriculum to focus on a few key factors shown in the pentagon known as their curriculum framework.



Results from TIMSS 2015

Since the Trends in International Math and Science Study (TIMSS) began in 1995, Singapore has consistently ranked at the top. The graphic below shows scores from 4th and 8th graders in 2015. Data from international studies has shown the United States has been surpassed in its mathematical performance. Meanwhile, Singapore’s students have consistently been top performers in international assessments. This is evidenced in Singapore’s consistent top performance on the TIMSS and PISA studies.

TIMSS 2015* Grade 4		TIMSS 2015* Grade 8	
Singapore	618	Singapore	621
Hong Kong SAR	615	Korea	606
Korea	608	Chinese Taipei	599
Chinese Taipei	597	Hong Kong SAR	594
Japan	593	Japan	586
Northern Ireland	570	Russian Federation	538
Russian Federation	564	Kazakhstan	528
Norway	549	Canada	527
Ireland	547	Ireland	523
England	546	England	518
Belgium-Flemish	546	United States	518
Kazakhstan	544	Slovenia	516
Portugal	541	Hungary	514
United States	539	Norway	512
Denmark	539	Lithuania	511

Within the Pennsylvania Mathematics Standards, several overarching initiatives are put forth which parallel the framework of the Singapore mathematics curriculum and *Math in Focus®*. These initiatives include:

- Curriculum that must be focused and coherent
- Teach to Mastery
- Focus on Number, Geometry and Measurement in Elementary Grades
- Organize Content by Big Ideas
- Focus on the Mathematical Practice Standards

These initiatives are addressed in several ways throughout the text. *Math in Focus*® emphasizes number and operation in every grade. With multi-day lessons and little repetition from grade to grade, students learn concepts in depth to mastery. The text is organized so students first learn number and operation and then practice, connect and apply these concepts in chapters on geometry and measurement. The Singapore Mathematics Framework and pedagogy emphasize deep understanding which is demonstrated through consistent opportunities to explain why mathematical concepts work. Finally, the Mathematical Practice Standards require a higher level of thinking for students. These Practice Standards focus on developing a mathematical mindset and a focus on problem solving. It is through these standards students will be challenged in ways they may not be used to in their current mathematics classroom. *Math in Focus*® utilizes strategies to support students to see struggle as a necessary part of learning.

Conceptual Understanding: Singapore math emphasizes a concrete to pictorial to abstract pedagogy. Students are first introduced to concepts with manipulatives, which allow them to experience and understand the math they are learning. After developing a concrete understanding the students move on to pictorial representations, before they end with abstract representations such as algorithms and formulas. *Math in Focus*® focuses on students learning the traditional US Algorithms for addition, subtraction, multiplication, and division most parents learned when they were in elementary school. *Math in Focus*® teaches students several consistent models students can use to make sense of mathematical relationships. These include bar models, place value charts, number bonds, and array models to name a few.

Problem Solving: Each chapter contains numerous embedded problem-solving situations so students learn to flexibly apply their mathematical knowledge. These problem situations require students to extend the concepts they have learned to non-routine situations to demonstrate mastery.