

Welcome Rock View Parents!!

Do not worry if you have built your castles in the air. They are where they should be. Now put the foundations under them.

- Henry David Thoreau

Parent Information on Curriculum 2.0 For Grade 3

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Outcomes

- Heard an overview of Curriculum 2.0.
- Reviewed the Key Messages and Goals of Curriculum 2.0
- Heard about the differences between the 2001 Curriculum and Curriculum 2.0, including a Comparison Chart of Enrichment and Acceleration expectations between the two curricula
- Reviewed the Proficiency Statements for Math in Grade 3 and discussed examples of learning tasks that build a stronger foundation
- Heard the Grade 3 Roll-out plan for Rock View.
- Discovered where additional resources can be located

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Curriculum 2.0 Overview



Curriculum 2.0 is a full annual document that outlines the academic and student learning goals, as well as essential academic learning goals, so that students are well prepared for a lifetime of learning. We are updating the existing MCPS curriculum for the elementary grades to make sure we better engage students and teachers, and also to give learning time to students such as the arts, information, science, social studies and physical education. By learning these subjects with the same content areas of reading, writing, and mathematics, students will receive a solid, engaging curriculum focused on building a strong foundation at the elementary level.

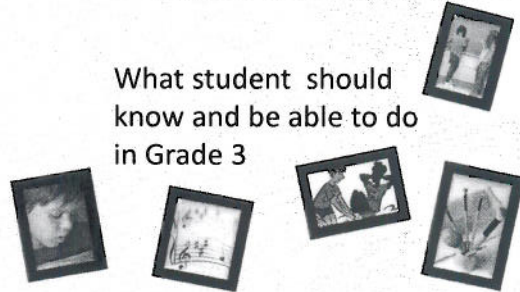
Dr. Barry's message on Curriculum 2.0 (PDF)



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Curriculum 2.0 Overview

What student should know and be able to do in Grade 3



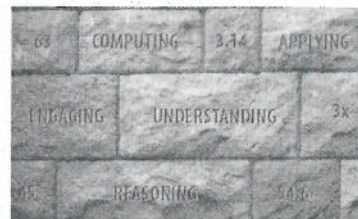
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Curriculum 2.0 Math

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Building a Strong Foundation

Success in Advanced Math



Proficiency in Number Concepts

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20 MCPS Curriculum 2.0
Empowering Students • Connecting Content • Fostering Creativity

Curriculum 2.0
Curriculum 2.0 Framework

Curriculum 2.0 – Elementary math program

Building Stronger Math Students by Building a Stronger Foundation


This fifteen-minute video describes the Curriculum 2.0 upgrade to the MCPS elementary math program, including the introduction of internationally-driven standards. Pauses for reflection and discussion are included in the video for use in small group or large group settings.



Curriculum 2.0
Frequently Asked Questions
What Will My Child Learn?
Elementary Math Program

Goals of the MCPS Mathematics Program

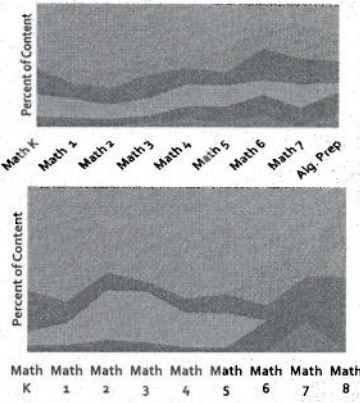
- Develop students who love math and see it as sensible and useful to solving problems and making sense of the world.
- All students will reach proficiency in math – Understanding, Computing, Applying, Reasoning, and Engaging (UCARE).
- The CCSS recommend that elementary schools focus on building a strong foundation in number concepts – that will help students be more successful in advanced math courses in middle school and high school.



Key Messages – Mathematics Curriculum 2.0/CCSS

- “Dig deeper and build a stronger math foundation in elementary school!”
- Maryland is adopting internationally-driven standards to raise the level of rigor. These standards will be implemented with Curriculum 2.0/EIC
- MCPS will use this opportunity to FOCUS the MCPS math program by building a stronger foundation of number concepts in elementary school.
- MCPS is adding accelerated and enriched instruction opportunities to the CCSS for students who consistently demonstrate strong mathematical proficiency.

Math Measurement Topics



Current MCPS Curriculum

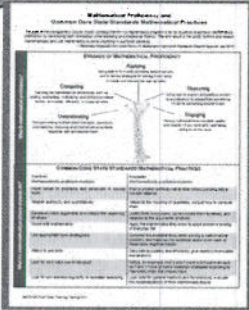
- Number
- Algebra
- Geometry
- Measurement
- Statistics
- Probability

Final Common Core Standards

- Number
- Algebra
- Geometry
- Measurement
- Statistics
- Probability

Understanding Going Deeper: What does it look like, and why is it important?

The research on mathematical proficiency (UCARE) and the Standards for Mathematical Practice provide guidance on how to focus on “understanding”.



Operations and Algebraic Thinking

Students demonstrate proficiency of Grade 3 standards for this measurement topic by:

- Understanding:** Representing and interpreting multiplication and division problems. Understanding the relationship between multiplication and division.
- Computing:** Fluently multiplying and dividing within 100.
- Applying:** Using multiplication and division within 100 to solve word problems. Applying properties of operations as strategies to multiply and divide. Applying strategies to solve two-step word problems using the four operations.
- Reasoning:** Explaining patterns in an addition or multiplication table. Explaining and justifying a solution to a problem or extending from something known to something not yet known.
- Engaging:** Seeing mathematics as sensible, useful, and doable-if you work at it-and being willing to do the work.

Number and Operations in Base Ten

Students demonstrate proficiency of Grade 3 standards for this measurement topic by:

- Understanding:** Understanding the relationship between rounding and place value.
- Computing:** Fluently add and subtract within 1000.
- Applying:** Using place value understanding to round whole numbers to the nearest 10 or 100.
- Reasoning:** Extending understanding of place value and properties of operations to multiply one-digit numbers by multiples of 10 (10–90). Using strategies based on place value and properties of operations to explain why strategies work, to justify a solution to a problem, or to extend from something known to something not yet known.
- Engaging:** Seeing mathematics as sensible, useful, and doable-if you work at it-and being willing to do the work.

Proficiency Statements
Grade 3 Math

Number and Operations—Fractions

Students demonstrate proficiency of Grade 3 standards (denominators limited to 2,3,4,6,8) for this measurement topic by:

- Understanding:** Understanding the size of a fractional part is relative to the size of the whole and, just as every whole number is obtained by combining ones, every fraction can be obtained by combining unit fractions. Understanding equivalence of fractions.
- Computing:** Representing fractions on number lines.
- Applying:** Using visual fraction models, including number lines, to develop strategies for generating and applying equivalent fractions.
- Reasoning:** Comparing two fractions with the same numerator or the same denominator. Explaining why fractions are equivalent.
- Engaging:** Seeing mathematics as sensible, useful, and doable-if you work at it-and being willing to do the work.

Proficiency Statements
Grade 3 Math

Measurement and Data

Students demonstrate proficiency of Grade 3 standards for this measurement topic by:

- Understanding:** Measuring and estimating liquid volumes and masses of objects using standard units. Telling and writing time to the nearest minute. Measuring length (nearest inch, ½ inch, ¼ inch). Representing data in line plots and scaled bar graphs/picture graphs. Understanding area and perimeter, and distinguishing between linear and area measures.
- Computing:** Finding the area of rectangles.
- Applying:** Solving word problems involving time intervals (minutes), liquid volumes, masses, area, and perimeter. Solving one- and two-step problems using information presented in a scaled bar graph.
- Reasoning:** Explaining and justifying a solution to measurement and data problems or extending from something known to something not yet known.
- Engaging:** Seeing mathematics as sensible, useful, and doable-if you work at it-and being willing to do the work.

Proficiency Statements
Grade 3 Math

Geometry

Students demonstrate proficiency of Grade 3 standards for this measurement topic by:

- Understanding:** Understanding relationships among shapes classified in categories and sub-categories.
- Computing:** Partitioning shapes into parts with equal areas.
- Applying:** Drawing examples of quadrilaterals that do not belong to specified sub-categories. Expressing the area of each part of a shape as a unit fraction of the whole.
- Reasoning:** Explaining and justifying solutions to problems about shapes and their attributes or extending from something known to something not yet known.
- Engaging:** Seeing mathematics as sensible, useful, and doable-if you work at it-and being willing to do the work.

Proficiency Statements
Grade 3 Math

Can you see the connection with a fraction division problem?

$$2\frac{1}{2} \div \frac{1}{4}$$

How would you solve or interpret this division problem?

Understanding the Relationship Between Multiplication and Division

- There are two fives in ten
- There are five twos in ten
- How many fives are in ten?
- How many twos are in ten?

Why does the algorithm work?

$2\frac{1}{2} \div \frac{1}{4}$

How many fourths are in $2\frac{1}{2}$?

$\frac{1}{4}$ of what number is $2\frac{1}{2}$?

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Why does the algorithm work?

A Deep Understanding of the Relationship Between Multiplication and Division Shows us Why the Algorithm Works.

$2\frac{1}{2} \div \frac{1}{4}$

How many fourths are in $2\frac{1}{2}$?

$\frac{1}{4}$ of what number is $2\frac{1}{2}$?

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What is meant by "understanding"?

- A student's ability to justify "why a particular mathematical statement is true or where a mathematics rule comes from." (CCSS Introduction, page 4)
- Mathematical understanding and procedural skill are equally important and are critical components of long-term success.
- Content understandings build upon each other.
- "Conceptual understanding is not an option, it's an expectation." – Skip Fennell

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Why is this important?

From the UCARE packet handout (back of the front page)

- Research-based learning progressions
- Students' mathematical knowledge, skill, and understanding develop over time

What is meant by understanding?

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Another Example

- 2001 Curriculum:
 - 1.3.2.1 represent the relationship of quantities in the form of a mathematical expression, equation, or inequalities (+, -, <, >, =, ×, ÷)
 - 1.3.2.2 solve problems involving numeric equations or inequalities.
 - 1.3.2.3 select appropriate operational (+, -, ×, ÷) and relational symbols (<, >, =) to express relationships and solve problems
- Curriculum 2.0
 - 1.3.B.9 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. [Footnote: This standard is limited to problems posed with whole numbers and having whole number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations)]

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Enrichment/Acceleration Model: 2001 Math vs. Curriculum 2.0/CCSS Math

| 2001 MCPS Math Curriculum | EIC/CCSS Math Curriculum |
|--|--|
| Revisit concepts across multiple grades | Develop concepts by moving forward through learning progressions at each grade level |
| Proficiency /mastery after multiple experiences across grades | Proficiency/mastery at key mileposts along learning progression in each grade |
| Focus on acceleration to all indicators at next grade level with some enrichment | Balance of acceleration to move forward in the learning progression and enrichment for deeper understanding of a concept |
| | Focus on developing strong number foundation in elementary school |

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Enrichment Example (Grade 3): Operations and Algebraic Thinking --

Enrichment/Acceleration

Mathematics Grade Level - Marking Period 4 - Week 2



Prerequisite: prior to week 2

- Student demonstrates proficiency at an exceptionally thorough level with all of the following problem-solving with whole numbers concepts in Week 2.
 - solving 3-step word problems (all operations) with unknowns in all positions
 - assessing the reasonableness of answers to 2-step word problems using mental computation and estimation strategies
- Then accelerate learning to
- solving 1- and 2-step word problems (whole numbers, all operations) with unknowns in all positions (See Marking Period 4 Week 3); assessing the reasonableness of answers to 1- and 2-step word problems using mental computation and estimation strategies (See Marking Period 4 Week 3)

[View all Lessons](#)

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Next Year in Grade 3

Curriculum 2.0 Implementation

Differentiated with Small Groups Within the Classroom

Strategic Homeroom Groupings

New Standards-based Report Card

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Curriculum 2.0 Resources for Parents

• MCPS Curriculum 2.0 Webpage Resources

- Videos
- Parent Guides
- FAQs
- TASS posters
- Curriculum Framework
- Link on Rock View Website
- Parent Academies
- Mathematics Power Point



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There are so many upgrades to the Elementary Integrated Curriculum, we've taken to calling it Curriculum 2.0!

New internationally driven standards in math, reading, and writing

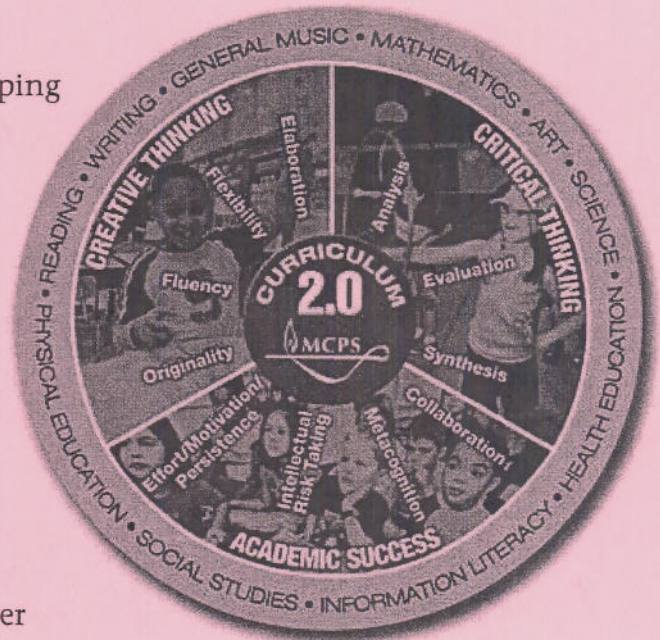
Renewed focus on teaching the whole child

- Nurtures skills that build confidence and success
- Engages students beyond reading and math, to spark greater interest in science, social studies, information literacy, art, music, physical education, and health

Integrates thinking, reasoning, and creativity for a lifetime of learning

- Enhances learning by connecting subjects

MCPS CURRICULUM 2.0 is built around developing students' critical and creative thinking skills, as well as essential academic success skills, so that students are well prepared for a lifetime of learning. We are upgrading the existing MCPS curriculum for the elementary grades in a way that will better engage students and teachers, and dedicate more learning time to subjects such as the arts, information literacy, science, social studies, and physical education. By blending these subjects with the core content areas of reading, writing, and mathematics, students will receive robust, engaging instruction across all subjects in the early grades – in short, we are building a stronger foundation at the elementary level.



To learn more—www.montgomeryschoolsmd.org/curriculum/2.0/



Rockville, Maryland

Published by the Department of Materials Management
for the Office of Curriculum and Instructional Programs

1509.11ct • Editorial, Graphics & Publishing Services • 14,300 • 8.11



How Parents Can Help

You want your child to succeed in school and in life. There are many ways to encourage him or her to achieve. Following are some of the many ways you can help your child get the most out of school:

- Show interest in what your child is doing in school.
- Set high expectations for your child. Make it clear that school should be his or her first priority.
- Dedicate at least 15 minutes each day to talking with your child and reading with him or her.
- Provide a quiet place for your child to study.
- Help your child with his or her homework.
- Limit the amount of television your child watches and discuss what he or she sees on television.
- Monitor the amount of time your child spends playing video games or surfing the Internet.
- Volunteer to help with school activities and try to get other parents involved as well.
- Talk with your child's teachers regularly about your child's progress and what you can do to help him or her improve.
- Encourage your child to complete challenging work.

Adapted from *A Parent's Guide to Achievement Matters Most*, Maryland State Department of Education.

How Parents Can Access Curriculum Resources

Parents should first consult the recommended resources. These documents can be found in school media centers.

- The MCPS revised *Curriculum Framework* for the subject (English/language arts, mathematics, science, or social studies), www.montgomeryschoolsmd.org/info/curriculum/framework.html.
- The Student Outcomes, by subject and grade level, as listed on the curriculum revision page of the MCPS website, www.montgomeryschoolsmd.org/info/curriculum/studentlearn.html.
- Their child's individual classroom teacher(s).

Curriculum 2.0 Implementation for 2012–2013 School Year

For the past three years, Montgomery County Public Schools (MCPS) has been implementing our exciting elementary school curriculum, called Curriculum 2.0. All students in kindergarten and Grade 1 and most students in Grade 2 have been taught using Curriculum 2.0 this year and the feedback from students, parents, and staff members has been very positive. In 2012–2013, we will begin using Curriculum 2.0 in all third-grade classes and we will improve our current report card to give parents more information about how students are performing in specific areas.

Curriculum 2.0 is designed to make sure our students not only have the academic knowledge they need, but also develop the important skills they will need to succeed in the 21st century. There are three major elements of Curriculum 2.0:

- **Internationally driven standards in math, reading, and writing:** Instruction in these key areas is based on the strength of the Common Core State Standards, adopted by Maryland and 45 other states as the foundation for what students need to learn and know in math, reading, and writing.
- **Renewed focus on teaching the whole child:** Curriculum 2.0 puts more focus on subjects like the arts, science, social studies, and physical education by connecting these areas with core subjects.
- **Critical thinking and creativity:** Curriculum 2.0 is designed to develop academic, creative, and critical thinking skills that build confidence in students and prepare them for a lifetime of learning.

The report card for students in Grades K–3 will be improved to give parents more information about what a student knows and is able to do in relation to grade-level expectations. This “standards-based report card” will break subject areas into groups of related skills or topics and provide specific information about how a student is doing in each area. The report cards for Grades 4 and 5 will not be changed next school year.

Much more information will be shared with parents at the beginning of the new school year, but if you have questions about Curriculum 2.0 or the new report card, visit the MCPS website at <http://www.montgomeryschoolsmd.org/curriculum/2.0/>.

Grade 3 – What Should Students Know and be able to Do

| | |
|--|---|
| Art | <p>Transform personal observations, memories, and imaginations into visual compositions. Identify, describe, represent and/or symbolize living things, objects, places, ideas, and events in visual compositions. Create new visual compositions using the elements of art and principles of design. Select and appraise criteria to evaluate/critique and respond to artwork. Select and adapt materials and processes in the creation of artwork.</p> |
| General Music | <p>Perform alone and in an ensemble: ostinato and sing two-part rounds with relaxed tone and head voice. Improvise an answer to a melodic question, and create, arrange, and compose an ostinato. Read to perform a melody using absolute pitches and notate musical patterns. Identify and describe musical forms, spirituals and their purpose, meter signatures, and multiple contrasts including articulation; evaluate performances. Perform movements to demonstrate conducting meter in two, traditional folk dances, and to communicate meaning. Justify healthy decisions and practices promoting lifelong wellness. Formulate a personal safety plan.</p> |
| Health Education Information Literacy | <p>Plan and formulate questions based on personal or content information need to demonstrate use of an inquiry model. Select and appraise multiple sources of information and make adjustments to meet challenges of personal or content information need. Justify recorded information for relevance and completeness and transform recorded information in an ethical manner to create a new product responding to personal or content information need. Demonstrate intellectual freedom by selecting and using fiction and non-fiction literature, digital, and multimedia.</p> |
| Mathematics | <p>Develop, demonstrate, and justify efficient strategies for multiplication and division, including multiplication facts (products to 81), and solve problems involving the four operations. Select and demonstrate multiple representations of fractions and equivalent fractions, and compare fractions by reasoning about their size. Apply strategies to solve measurement problems, including area and perimeter. Describe, compare, and analyze properties of two-dimensional shapes.</p> |
| Physical Education | <p>Demonstrate application of movement skills to send, receive, and dribble equipment through different levels and pathways. Demonstrate rhythmic movement that combines formation, tempo, sequence, and performance of locomotor skills. Identify relationships among the components of the FITT Formula and health-related fitness components, including methods for monitoring heart rate to determine appropriate levels of aerobic activity. Create rules collaboratively to promote responsibility for self and others. Develop a plan to achieve a desired goal.</p> |
| Reading Language Arts | <p>Apply grade level appropriate phonics/word analysis skills and word recognition to read with sufficient accuracy and fluency to support comprehension. Read and comprehend literature at the high end of the grades 2–3 text complexity band strategically and independently. Read and comprehend informational text at the high end of the grades 2–3 text complexity band strategically and independently. Write increasingly complex opinions, informative/explanatory text, and narratives using writing processes and traits. Listen and speak effectively to initiate and engage in discussions about grade-level appropriate topics and texts. Acquire appropriate vocabulary and demonstrate command of grade-level conventions to use language effectively.</p> |
| Science and Engineering | <p>Identify and explain interactions and relationships between living things and the natural environment. Identify and describe Earth's natural resources and infer how they impact human decisions. Infer and explain through investigations how physical processes can affect an object's properties. Explain and justify based on investigations how a force is required to change an object's motion. Identify and describe relationships between heat energy and objects.</p> |
| Social Studies | <p>Infer and explain meaning of democratic principles and practices associated with being a responsible citizen within the United States. Identify and describe relationships among people, decision-making, and events that lead to the development of supportive communities. Identify relationships among the production, distribution, and consumption of goods and services. Infer and explain characteristics of different cultures. Compare places and regions using geographic characteristics.</p> |

Mathematical Proficiency and Common Core State Standards Mathematical Practices

The goal of the Montgomery County Public Schools Pre-K—12 mathematics program is for all students to achieve mathematical proficiency by developing both conceptual understanding and procedural fluency. The end result is the ability to think and reason mathematically and use mathematics to solve problems in authentic contexts.

—Elementary Integrated Curriculum Pre-K—12 Mathematics Curriculum Framework (Original Approval: July 2001)

STRANDS OF MATHEMATICAL PROFICIENCY

Applying

Being able to formulate problems mathematically and to devise strategies for solving them using concepts and procedures appropriately

Computing

Carrying out mathematical procedures, such as adding, subtracting, multiplying, and dividing numbers flexibly, accurately, efficiently, and appropriately

Reasoning

Using logic to explain and justify a solution to a problem or to extend from something known to something not yet known

Understanding

Comprehending mathematical concepts, operations, and relations—knowing what mathematical symbols, diagrams, and procedures mean

Engaging

Seeing mathematics as sensible, useful, and doable—if you work at it—and being willing to do the work



What is mathematical proficiency?

COMMON CORE STATE STANDARDS MATHEMATICAL PRACTICES

Practices

Mathematically proficient students:

Make sense of problems and persevere in solving them

Reason abstractly and quantitatively

Construct viable arguments and critique the reasoning of others

Model with mathematics

Use appropriate tools strategically

Attend to precision

Look for and make use of structure

Look for and express regularity in repeated reasoning

Examples

Mathematically proficient students:

Plan a solution pathway rather than simply jumping into a solution attempt

Attend to the meaning of quantities, not just how to compute them

Justify their conclusions, communicate them to others, and respond to the arguments of others

Apply the mathematics they know to solve problems arising in everyday life

Consider the available tools when solving a mathematical problem, and make sound decisions about when each of these tools might be helpful

Calculate accurately and efficiently; give carefully formulated explanations

Notice, for example, that 3 and 7 more is the same amount as 7 and 3 more or sort a collection of shapes according to how many sides the shapes have

Look both for general methods and for shortcuts; evaluate the reasonableness of their intermediate results

What do mathematically proficient students do?