

PA Core Standards: Mathematics

Introduction

The 2020–21 school year presents a unique set of opportunities and challenges due to the disruption to instruction in spring 2020 as well as the uncertainty as the school year unfolds. Educators know that every school year there are students who require support in addressing unfinished learning from prior grades; a challenge that will be felt more prominently in the 2020–21 school year. It is vitally important that educators are supported to make deliberate instructional choices that allow all students to effectively engage with grade-level work.

The most effective and equitable way to support students in their learning is to ensure that the vast majority of time is spent engaging with grade-level content, remediating with precision and accelerating as needed. It is entirely possible to hold high expectations for all students while addressing unfinished learning in the context of grade-level work. Since time is a scarce commodity in classrooms — made more limited by anticipated closures and remote or hybrid learning models in the fall of 2020 — strategic instructional choices about which content to prioritize must be made.¹

Assessing students at the start of the year will identify learning gaps and provide data to inform grade level instruction — as well as incorporating both remediation and acceleration along the way. Diagnostic Assessments determine student strengths, weaknesses, knowledge, and skills. Administering diagnostic assessments permits the instructor to intervene at the point where students begin to struggle or when they are performing below grade level expectations (running record, informal reading assessments, surveys, initial writing prompts, Classroom Diagnostic Tests [CDT]). Diagnostic assessments allow teachers to adjust the curriculum to meet the unique needs of all students. While some concepts have greater emphasis in a particular year, all standards deserve a defined level of instruction. Neglecting concepts may result in learning gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade.

This guidance document is designed to identify and define areas of high-level focus in Mathematics instruction supported by key PA Academic Standards. Note that while all standards deserve a defined level of instruction, neglecting key concepts may result in learning gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade. Not all content in a given grade is emphasized equally in the standards. Some focus areas require greater emphasis than others based on the depth of the ideas, the time taken to master, and/or their importance to the future mathematics grade levels. More time in these areas is also necessary for students to meet the Standards for Mathematical Practice (MP).

¹ Adapted from 2020–21 Priority Instructional Content in English Language Arts/literacy and Mathematics, Student Achievement Partners/Achieve the Core. May 2020

GRADE 5 FOCUS OF INSTRUCTION (2020-2021)

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Focus Areas of Instruction	PA Academic Standards
<p>Numbers and Operations</p> <ul style="list-style-type: none"> • Place Value, Properties of Operations & Decimals: Demonstrate an understanding of rounding as it pertains to whole numbers and decimals. Read, write, and compare decimals. Use whole numbers and decimals to compute accurately. • Fractions: Add, subtract, multiply and divide fractions to solve problems. Explain operations as they pertain to fractions. 	<p>CC.2.1.5.B.1 <i>Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.</i></p> <p>CC.2.1.5.B.2 <i>Extend an understanding of operations with whole numbers to perform operations including decimals.</i></p> <p>CC.2.1.5.C.1 <i>Use the understanding of equivalency to add and subtract fractions.</i></p> <p>CC.2.1.5.C.2 <i>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</i></p>
<p>Algebraic Concepts</p> <ul style="list-style-type: none"> • Numerical Expression, Order of Operations & Patterns: Write and interpret numerical expressions. Evaluate expressions using the order of operations, Generate, analyze, and compare patterns. 	<p>CC.2.2.5.A.1 <i>Interpret and evaluate numerical expressions using order of operations.</i></p> <p>CC.2.2.5.A.4 <i>Analyze patterns and relationships using two rules.</i></p> <p>CC.2.3.5.A.1 <i>Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems.</i></p>
<p>Geometry</p> <ul style="list-style-type: none"> • Coordinate Plan: Plot points in quadrant I, Describe and interpret points given an ordered pair. Identify parts of a coordinate grid. 	<p>CC.2.4.5.A.1 <i>Solve problems using conversions within a given measurement system.</i></p> <p>CC.2.4.5.A.2 <i>Represent and interpret data using appropriate scale.</i></p> <p>CC.2.4.5.A.5 <i>Apply concepts of volume to solve problems and relate volume to multiplication and to addition.</i></p>
<p>Measurement, Data and Probability</p> <ul style="list-style-type: none"> • Measurement, Data Displays & Volume: Solve problems using simple conversions. Represent and interpret data using appropriate scale. Apply concepts of volume to solve problems. Relate volume to multiplication and to addition. 	<p>Standards for Mathematics Practices</p> <p>MP1: <i>Make sense of problems and persevere in solving them.</i> <i>Build community by providing group tasks to develop sense making and problem solving while deepening students' active engagement.</i></p> <p>MP3: <i>Construct viable arguments and critique the reasoning of others.</i> <i>Gather student perspectives through written or verbal reflection so that students consider their learning, performance, and growth as learners.</i></p> <p>MP7: <i>Look for and make use of structure.</i> <i>Position students as mathematically competent by encouraging various entry points and elevating different ways students see and use structure in problems.</i></p>