

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 1 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"> • Count Sequence: Read and write numerals up to 120 and represent the number of objects with a written numeral. • Place Value: Understand that the two digits of a two-digit number represent amounts of tens and ones. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10 using concrete models or drawings. Subtract multiples of 10 in the range 10-90, using concrete models or drawings. 	<p>CC.2.1.1.B.1 <i>Extend the counting sequence to read and write numerals to represent objects.</i></p> <p>CC.2.1.1.B.2 <i>Use place-value concepts to represent amounts of tens and ones and to compare two-digit numbers.</i></p> <p>CC.2.1.1.B.3 <i>Use place-value concepts and properties of operations to add and subtract within 100.</i></p> <p>CC.2.2.1.A.1 <i>Represent and solve problems involving addition and subtraction within 20.</i></p> <p>CC.2.2.1.A.2 <i>Understand and apply properties of operations and the relationship between addition and subtraction.</i></p>
<p>Algebraic Concepts</p> <ul style="list-style-type: none"> • Represent and Solve Problems Using Addition and Subtraction: Use addition and subtraction within 20 to solve word problems by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. Apply properties of operations as strategies to add and subtract. 	<p>CC.2.3.1.A.2 <i>Use the understanding of fractions to partition shapes into halves and quarters.</i></p> <p>CC.2.4.1.A.1 <i>Order lengths and measure them both indirectly and by repeating length units.</i></p>
<p>Geometry</p> <ul style="list-style-type: none"> • Fractions: Partition circles and rectangles into two and four equal shares. Understand that decomposing into more equal shares creates smaller shares. 	<p>Standards for Mathematics Practices</p> <p>MP1: Make sense of problems and persevere in solving them. <i>Position students by highlighting their successes with grade level content, as well as by strategically creating just-in-time supports and enrichment that provide every student opportunity to actively engage with grade level work.</i></p>
<p>Measurement, Data, and Probability</p> <ul style="list-style-type: none"> • Measurement Lengths: Order three objects by length; compare the lengths of two objects indirectly by using a third object, Use standard and non-standard units of measure to express the length of an objects a whole number of length units, Understand that the length measurement of an object is the number of same-size length units. 	<p>MP3: Construct viable arguments and critique the reasoning of others. <i>Communicate collective learning goals for the class as a whole to reinforce that students belong to a learning community where they can succeed and where they will be supported to grow.</i></p> <p>MP7: Look for and make use of structure. <i>Establish norms for participation within routines, such as number talks for addition and subtraction within 20 and choral counting within 120, to position every student as a competent mathematical thinker.</i></p>