pennsylvania
DEPARTMENT OF EDUCATION

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 then 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 K FOCUS OF INSTRUCTION (2020-2021)

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Focus Areas of Instruction	PA Academic Standards
Numbers and Operations • **Know Number Names & Count Sequence:** Rote counts to 100, Count forward beginning from a given number within the known sequence. Names numerals 0 – 20. Represent a number of objects with a written numeral 0-20. • **Count Objects:** Uses one-to-one correspondence when counting to 20, State the total number of objects counted. demonstrating understanding that that last number named tells the number of objects counted. Understand that each successive number name refers to a quantity that is one larger. • **Compare Numbers & Place Value:** Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group. Compare two numbers between 1 and 10 presented as written numerals. Compose and decompose numbers up to 19 into ten and ones. **Algebraic Concepts** • **Add and Subtract with in 10:** Represent addition and subtraction with objects, fingers, mental images, drawings, sounds acting out situations, verbal explanations, expressions, or equations. Solve addition and subtraction word problems, and add and subtract within 10, by using objects or drawings to represent the problem. Decompose numbers less than or equal to 10 into pairs in more than one way, by using objects or drawings, and record each decomposition by a drawing or equation. For any number from 1 to 9, find the number that makes 10 when added to the given number, by using objects or drawings, and record the answer with a drawing or equation. **Geometry** • **Two- and Three-dimensional Shapes:** Analyze and compare two-and three-dimensional shapes, in different sizes and orientations. Model shapes in the world by building shapes from components and drawing shapes. Use simple shapes to compose larger shapes. **Measurement, Data, and Probability** • **Describe and Compare Measurable Attributes:** Describe measurable attributes of objects, such as length, weight, area or capacity. Describe several measurable attributes of a single object. Compare two objects with a measurable attribute in common and describe the difference.	**CC.2.1.K.A.1** *Know number names and write and recite the count sequence.* **CC.2.1.K.A.2** *Apply one-to-one correspondence to count the number of objects.* **CC.2.1.K.A.3** *Apply the concept of magnitude to compare numbers and quantities.* **CC.2.1.K.B.1** *Use place value to compose and decompose numbers within 19.* **CC.2.2.K.A.1** *Extend the concepts of putting together and taking apart to add and subtract within 10.* **CC.2.3.K.A.2** *Analyze, compare, create, and compose two- and three-dimensional shapes.* **CC.2.4.K.A.1** *Describe and compare attributes of length, area, weight, and capacity of everyday objects* **Standards for Mathematics Practices** **MP1:** ***Make sense of problems and persevere in solving them.*** *Design structured and unstructured time for students to actively collaborate with their classmates to grow their skills in problem solving, cooperation, communication, innovation, reflection, self-regulation, and empathy.* **MP6:** ***Attend to precision.*** *Promote skills in cooperation and communication by providing opportunities in daily lessons for students to work in pairs counting objects and practicing fluency.* **MP7:** ***Look for and make use of structure.*** *Promote a sense of belonging by including math routines, such as number talks, choral counting, counting collections, and other counting routines, so that students see themselves as a part of a community.* .