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 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 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 instruction. 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, 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 Science 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 science grade levels. More time in these areas is also necessary for students to meet the Standards for Inquiry and Design and Unifying Themes.

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[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)

This guidance document is designed to identify and define areas of high-level focus in science 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 skill and understanding and may leave students unprepared for the challenges of later grades.

Focus Areas of Instruction	PA Academic Standards
Life Science • Using evidence, present an argument that plants get the materials they need for growth primarily from air and water. • Construct and communicate models of food webs that demonstrate the transfer of matter and energy among organisms within an ecosystem. • Identify a newly introduced species to an ecosystem and provide evidence that it is an invasive species or noninvasive species. • Use models to describe how decomposition eventually restores (recycles) some materials back to the soil for plants to use. • Develop a model to describe a healthy ecosystem as a system in terms of the components and interactions.	**3.1.7.A** *Explain the parts of a simple system and their relationship to each other.* **3.1.7.B** *Describe the use of models as an application of scientific or technological concepts.* **3.1.7.C** *Identify patterns as repeated processes or recurring elements in science and technology.* **3.2.7.B** *Apply process knowledge to make and interpret observations.* **3.3.7.A** *Describe the similarities and differences that characterize diverse living things.* **3.3.7.B** *Know that every organism has a set of genetic instructions that determines its inherited traits.* **3.3.7.C** *Know that every organism has a set of genetic instructions that determines its inherited traits.*
Physical Science • Plan and conduct an investigation to determine whether the mixing of two or more substances results in new substances (e.g., cooking, baking, etc.). • Develop a model to describe that matter is made of particles too small to see. • Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total mass of matter is conserved. • Investigate the interaction of two or more substances to provide evidence that when different substances are mixed, one or more new substances with different properties may or may not be formed.	**3.1.7.B** *Describe the use of models as an application of scientific or technological concepts.* **3.1.7.C** *Identify patterns as repeated processes or recurring elements in science and technology.* **3.2.7.B** *Apply process knowledge to make and interpret observations.* **3.4.7.A** *Describe concepts about the structure and properties of matter.*
Earth and Space Science • Support an argument that the apparent brightness of the sun and stars is due to their relative distances from Earth. • Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, day and night, and seasonal appearance of stars in the sky. • Construct and analyze models to describe systems interactions among the geosphere, hydrosphere, atmosphere, and biosphere. • Through the creation of a model, explain that the chemical and physical processes that cycle earth materials and form rocks. • Utilizing observations and data, explain the patterns of weather in a given location. • Investigate movement of water in the Earth's systems and research and develop models for the cycling of water. • Research and communicate how communities are using science to protect resources and environments. • Identify and explain monthly patterns in the phases of the Moon.	**3.1.7.A** *Explain the parts of a simple system and their relationship to each other.* **3.1.7.B** *Describe the use of models as an application of scientific or technological concepts.* **3.1.7.C** *Identify patterns as repeated processes or recurring elements in science and technology.* **3.1.7.E** *Identify change as a variable in describing natural and physical systems.* **3.2.7.A** *Explain and apply scientific and technological knowledge.* **3.2.7.B** *Apply process knowledge to make and interpret observations.* **3.2.7.C** *Identify and use the elements of scientific inquiry to solve problems.* **3.2.7.D** *Know and use the technological design process to solve problems.* **3.4.7.D** *Describe essential ideas about the composition and structure of the universe and the earth's place in it.* **3.5.7.A** *Describe earth features and processes.* **3.5.7.B** *Recognize earth resources and how they affect everyday life.* **3.5.7.C** *Describe basic elements of meteorology.* **3.5.7.D** *Explain the behavior and impact of the earth's water systems.*