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 only as necessary. 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. 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 Technology Education 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.

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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 10 FOCUS OF INSTRUCTION (2020-2021)

This guidance document is designed to identify and define areas of high-level focus in Technology Education 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
Biotechnology • Apply knowledge of plant and animal production processes in designing an improvement to existing processes. • Apply knowledge of biomedical technology applications in designing a solution to a simple medical problem (e.g., wheelchair design, artificial arteries). • Apply knowledge of how biomedical technology affects waste products in designing a solution that will result in reduced waste. • Apply ergonomic engineering factors when devising a solution to a specific problem. • Describe various methods of biochemical conversion. • Explain the impact that agricultural science has had on biotechnology. • Describe specific examples that reflect the impact that agricultural science has had on biotechnology.	**3.6.10.A** *Apply biotechnologies that relate to propagating, growing, maintaining, adapting, treating, and converting.*
Information Technology • Describe the proper use of graphic and electronic communication systems. • Apply a variety of advanced mechanical and electronic drafting methods to communicate a solution to a specific problem. • Apply and analyze advanced communication techniques to produce an image that effectively conveys a message (e.g., desktop publishing, audio and/or video production). • Apply the appropriate method of communications technology to communicate a thought. • Illustrate an understanding of a computer network system by modeling, constructing or assembling its components.	**3.6.10.B** *Apply knowledge of information technologies of encoding, transmitting, receiving, storing, retrieving, and decoding.*
Physical Technologies • Describe and classify common construction by their characteristics and composition. • Compare and contrast specific construction systems that depend on each other in order to complete a project. • Evaluate material failure common to specific applications. • Demonstrate knowledge of various construction systems by building or interpreting models. • Select and apply the necessary resources to successfully conduct a manufacturing enterprise. • Apply concepts of design engineering and production engineering in the organization and application of a manufacturing activity. • Apply the concepts of manufacturing by redesigning an enterprise to improve productivity or reduce or eliminate waste and/or pollution. • Evaluate the interrelationship of various transportation systems in the community. • Analyze the impacts that transportation systems have on a community.	**3.6.10.C** *Apply physical technologies of structural design, analysis and engineering, personnel relations, financial affairs, structural production, marketing, research, and design to real world problems.*