

**WEST JEFFERSON HILLS SCHOOL DISTRICT  
TECHNOLOGY CURRICULUM**

**GRADE 4**

<p style="text-align: center;"><b>PA Academic Standards</b> Student must be able to do</p>	<p style="text-align: center;"><b>Objective</b> Content or process student will be able to know and do</p>	<p style="text-align: center;"><b>Instructional Methods</b></p>	<p style="text-align: center;"><b>Materials/ Resources</b> Textbooks, trade books, workbooks, software, hardware, etc.</p>	<p style="text-align: center;"><b>*Assessment Procedures</b> *Additional adaptations, modifications, accommodations, and enrichment/ acceleration will be provided per IEP</p>	<p style="text-align: center;"><b>*Additional Learning</b> Opportunities for students who do not meet basic standards *Additional adaptations, modifications, and accommodations will be provided per IEP</p>	<p style="text-align: center;"><b>*Extended Learning</b> Opportunities for students who can go beyond the basic standards. *Additional enrichment/acceleration will be provided per IEP</p>
<p>Technology Education 3.6.4. Grade 4</p>						
<p>A. Know that biotechnologies relate to propagating, growing, maintaining, adapting, treating and converting.</p> <ul style="list-style-type: none"> <li>• Identify agricultural and industrial production processes that involve plants and animals.</li> <li>• Identify waste management treatment processes.</li> <li>• Describe how knowledge of the human body influences or impacts ergonomic design.</li> <li>• Describe how biotechnology has impacted various aspects of daily life (e.g., health care, agriculture, waste treatment)</li> </ul>		<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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						<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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<p>B. Know that information technologies involve encoding, transmitting, receiving, storing, retrieving and decoding.</p> <ul style="list-style-type: none"> <li>• Identify electronic communication methods that exist in the community (e.g., digital cameras, telephone, internet, television, fiber optics).</li> <li>• Identify graphic reproduction methods.</li> <li>• Describe appropriate image generating techniques (e.g., photography, video).</li> <li>• Demonstrate the ability to communicate an idea by applying basic sketching and drawing techniques.</li> </ul>	<ul style="list-style-type: none"> <li>• Students understand the operations and functions of technology systems and are proficient in the use of technology.</li> <li>• Communicate about technology using developmentally appropriate and accurate terminology.</li> <li>• Use basic vocabulary related technology (e.g., fire wall, USB, scanning, digitizing)</li> <li>• Use basic vocabulary related to systems (e.g., network, Internet, LAN WAN, server, and fire wall)</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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	<ul style="list-style-type: none"> <li>• Demonstrate functional operation of technology devices (e.g., presentation devices, digital camera, scanners, document cameras, scientific probes)</li> <li>• Design and create a multimedia presentation on Web Page using multiple digital sources (e.g., from camera, video, scanner, CD-Rom, Internet)</li> <li>• Students can copy and back up files.</li> <li>• Students can use formal keyboarding skills to learn keys.</li> <li>• Use telecommunications efficiently and effectively to access remote information and communicate with others in support of facilitated and independent learning.</li> </ul>					<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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<p>Technology Education 3.6.4. Grade 4</p>						
	<ul style="list-style-type: none"> <li>• Communicate independently via email, Internet, and/or video conference with people in a remote location.</li> <li>• Identify parts of a camcorder and VCR, turn equipment on and off, and record and pause.</li> <li>• Use technology tools for individual and collaborative writing, communication, and publishing activities to create curricular related products for audiences inside and outside the classroom.</li> <li>• Plan, design, and present an academic product using technology tools (e.g., multimedia authoring, presentation software, digital cameras, scanners, projection devices).</li> </ul>					

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	<ul style="list-style-type: none"> <li>• Collaboratively use telecommunications and online sources.</li> <li>• Highlight a graphic frame, marquee, or lasso tool in a paint program.</li> <li>• Move a graphic to another location on the screen in a paint program.</li> <li>• Duplicate an object in a paint program.</li> <li>• Apply special effects to a graphic such as rotate, stretch and perspective in a paint program.</li> <li>• Use line tool, pointer, and shape tools, in a paint program.</li> <li>• Format the text of a document by changing text size, font, and style.</li> <li>• Manipulate the layout of a document using margins, justification, and line spacing.</li> </ul>					

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<p>C. Know physical technologies of structural design, analysis and engineering, finance, production, marketing, research and design.</p> <ul style="list-style-type: none"> <li>• Identify and group a variety of construction tasks.</li> <li>• Identify the major construction systems present in a specific local building.</li> <li>• Identify specific construction systems that depend on each other in order to complete a project.</li> <li>• Know skills used in construction.</li> <li>• Identify examples of manufactured goods present in the home and school.</li> </ul>		<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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<ul style="list-style-type: none"> <li>• Identify basic resources needed to produce a manufactured item.</li> <li>• Identify basic component operations in a specific manufacturing enterprise (e.g., cutting, shaping, attaching).</li> <li>• Identify waste and pollution resulting from a manufacturing enterprise.</li> <li>• Explain and demonstrate the concept of manufacturing (e.g., assemble as set of papers or ball point pens sequentially, mass produce an object).</li> </ul>						<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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<p>Technology Education 3.6.4. Grade 4</p>						
<ul style="list-style-type: none"> <li>•Identify transportation technologies of propelling, structuring, suspending, guiding, controlling and supporting.</li> <li>•Identify and experiment with simple machines used in transportation systems.</li> <li>•Explain how improved transportation systems have changed society.</li> </ul>						

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<p>Technology Devices 3.7.4. Grade 4</p>						
<p>A. Explore the use of basic tools, simple materials and techniques to safely solve problems.</p> <ul style="list-style-type: none"> <li>• Describe the scientific principles on which various tools are based.</li> <li>• Group tools and machines by their function.</li> <li>• Select and safely apply appropriate tools and materials to solve simple problems.</li> </ul>	<ul style="list-style-type: none"> <li>• When a system is not working properly, demonstrate an understanding of hardware, software, and connectivity problem solving processes.</li> <li>• Use trouble shooting strategies to solve application problems (e.g., file management strategies, on-line help, documentation, collaboration with others)</li> <li>• Use trouble shooting strategies to solve basic hardware problems (e.g., use on-line help, use documentation, collaboration with others).</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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<p>B. Select appropriate instruments to study materials.</p> <ul style="list-style-type: none"> <li>• Develop simple skills to measure, record, cut and fasten.</li> <li>• Explain appropriate instrument selection for specific tasks.</li> </ul>		<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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						<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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<p>Technology Devices 3.7.4. Grade 4</p>						
<p>C. Identify basic computer operations and concepts.</p> <ul style="list-style-type: none"> <li>• Identify the major parts necessary for a computer to input and output data.</li> <li>• Explain and demonstrate the basic use of input and output devices (e.g., keyboard, monitor, printer, mouse).</li> <li>• Explain and demonstrate the use of external and internal storage devices (e.g., disk drive, CD drive).</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate increasingly sophisticated operations of technology components.</li> <li>• Use touch-typing strategies to reach a minimum of 25 words per minute with accuracy.</li> <li>• Retrieve and save information remotely (e.g., network servers, Internet Intranet, peripheral devices).</li> <li>• Demonstrate functional operations of technology devices (e.g., presentation devices, digital cameras, scanners, document cameras, scientific probes).</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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<p>Technology Devices 3.7.4. Grade 4</p>						
	<ul style="list-style-type: none"> <li>• Use formatting capabilities of technology tools for communication and illustrating.</li> <li>• Publish and present information using technology tools.</li> <li>• Design and create a multimedia presentation or Web Page using multiple digital sources (e.g., from cameras, video, scanner, CD-Rom, Internet)</li> </ul>					<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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<p>Technology Devices 3.7.4. Grade 4</p>						
<p>D. Use basic computer software.</p> <ul style="list-style-type: none"> <li>• Apply operating system skills to perform basic computer tasks.</li> <li>• Apply basic word processing skills</li> <li>• Identify and use simple graphic and presentation graphic materials generated by the computer.</li> <li>• Apply specific instructional software.</li> </ul>	<ul style="list-style-type: none"> <li>• Use word processing editing tools to revise a document (e.g. cut and paste, tabs and margins, font size, delete and undo, selecting, spell check, click and drive)</li> <li>• Design a word processing document with graphical elements (e.g., clipart, digital photographs, symbols, using text wrap, cropping, sizing, drawing tools.</li> <li>• Publish and present information using technology tools.</li> <li>• Use a variety of technology tools for data collection and analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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<p>Technology Devices 3.7.4. Grade 4</p>						
	<ul style="list-style-type: none"> <li>• Use technology devices to collect and record data (e.g., science probe, graphing calculator, PDA (personal digital assistant), alternative keyboard, Web cam and Internet.</li> <li>• Create and use a spreadsheet to analyze data (e.g., use formulas, create charts and graphs.</li> <li>• Determine when technology is useful and select and use the appropriate tools and technology resources to solve problems.</li> <li>• Based on a problem selected by the students, identify and use appropriate tools and technology</li> </ul>					<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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<p>Technology Devices 3.7.4. Grade 4</p>						
	<p>resources to solve problems. -Collect data -Interpret data -Develop a solution -Present findings •The student can retrieve a record from a physical, electronic database – single field, exact match.</p>					

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<p>E. Identify basic computer communications systems.</p> <ul style="list-style-type: none"> <li>• Apply a web browser</li> <li>• Apply basic electronic mail functions.</li> <li>• Use on-line searches to answer age appropriate questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Students can create an electronic bookmark.</li> <li>• The students can capture information from a CD-Rom article and transfer notes to notepad or a word processor.</li> <li>• The student can create an outline for a report using information from a CD-Rom.</li> <li>• Use technology tools to support analysis and modeling</li> <li>• Manipulate several variables in a computer simulation to research a desired outcome (e.g., simulation software, Web-based simulations, textbook support software)</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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Technology Devices 3.7.4. Grade 4						
	<ul style="list-style-type: none"> <li>• Request collaborative exchanges among people in local and remote locations (e.g., email, on-line discussions, web environment</li> <li>• Evaluate the accuracy, relevance, appropriateness comprehensiveness, and bias of electronic sources.</li> <li>• Locate information from electronic resources.</li> <li>• Identify electronic research resources</li> <li>• Explain the differences between subject and keyboard searching.</li> <li>• Create citations for electronic research sources following a prescribed format.</li> </ul>					<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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	<ul style="list-style-type: none"> <li>• Gather research from a variety of electronic sources and identify the most appropriate information for answering questions.</li> </ul>					

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<p>Science, Technology and Science Endeavors 3.8.4 Grade 4</p>						
<p>A. Know that people select, create, and use science and technology and that they are limited by social and physical restraints.</p> <ul style="list-style-type: none"> <li>• Identify and describe positive and negative impacts that influence or result from new tools and techniques.</li> <li>• Identify how physical technology (e.g., construction, manufacturing, transportation, informational technology and biotechnology are used to meet human needs.</li> <li>• Describe how scientific discoveries and technological advancements are related.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use.</li> <li>• Explain the purpose of an acceptable use agreement policy and the consequence of inappropriate use.</li> <li>• Describe and practice safe Internet and Intranet usage (i.e., do not reveal personal information, follow district acceptable use policy)</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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<p style="text-align: center;"><b>PA Academic Standards</b> Student must be able to do</p>	<p style="text-align: center;"><b>Objective</b> Content or process student will be able to know and do</p>	<p style="text-align: center;"><b>Instructional Methods</b></p>	<p style="text-align: center;"><b>Materials/ Resources</b> Textbooks, trade books, workbooks, software, hardware, etc.</p>	<p style="text-align: center;"><b>*Assessment Procedures</b> *Additional adaptations, modifications, accommodations, and enrichment/ acceleration will be provided per IEP</p>	<p style="text-align: center;"><b>*Additional Learning</b> Opportunities for students who do not meet basic standards *Additional adaptations, modifications, and accommodations will be provided per IEP</p>	<p style="text-align: center;"><b>*Extended Learning</b> Opportunities for students who can go beyond the basic standards. *Additional enrichment/acceleration will be provided per IEP</p>
<p>Science, Technology and Science Endeavors 3.8.4 Grade 4</p>						
<ul style="list-style-type: none"> <li>• Identify interrelationships among technology, people, and their world.</li> <li>• Apply the technological design process to solve a simple problem.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe and practice “netiquette” when using the Internet and electronic mail (e.g., publish photographs of people only with their permission.)</li> </ul>					<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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<p>B. Know how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.</p> <ul style="list-style-type: none"> <li>• Identify and distinguish between human needs and improving the quality of life.</li> <li>• Identify and distinguish between natural and human-made resources.</li> <li>• Describe a technological invention and the resources that were used to develop it.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate knowledge of current changes in technologies and the effects those changes have on the workplace and society.</li> <li>• Compare information technologies from past to present and describe the implications of computer power doubling every 18 months (Moore's Law) (e.g., size speed test)</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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	<ul style="list-style-type: none"> <li>• Describe the impact of technology use on individuals at home and in the workplace (e.g., computer has replaced the TV for some individuals, free time is spent using technology versus outdoor activities, jobs have been created and/or eliminated due to technological advances; possible infringement of privacy)</li> </ul>					<ul style="list-style-type: none"> <li>• Describe trends and possible future developments in technology.</li> <li>• Create technological design briefs to document problem solving.</li> <li>• Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents.</li> <li>• Analyze current changes in technologies and predict the effect those changes have on the workforce and society</li> </ul>

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<p>C. Know the pros and cons of possible solutions to scientific and technological problems in society. • Compare the positive and negative expected and unexpected impacts of technological change. • Identify and discuss examples of technological change in the community that have both positive and negative impacts.</p>	<p>• Discuss the social implications of the “digital divide” (e.g., homes and schools with much technology and connectivity versus those with less or more)</p>	<ul style="list-style-type: none"> <li>• Lecture</li> <li>• Discussion</li> <li>• Cooperative Learning</li> <li>• Demonstration</li> <li>• Video Taping of student presentations</li> <li>• Simulation</li> <li>• Guided Practice</li> <li>• Role Playing</li> <li>• Experimental/ Inquiry Learning</li> <li>• Modeling</li> <li>• Flexible Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Printer</li> <li>• CCC</li> <li>• Transparencies</li> <li>• Posters</li> <li>• Study Prints</li> <li>• United Streaming</li> <li>• Websites</li> <li>• Internet</li> <li>• Software</li> <li>• Black Line Masters</li> </ul>	<ul style="list-style-type: none"> <li>• Tests/Quizzes</li> <li>• Oral Presentation</li> <li>• Daily homework</li> <li>• Experiments</li> <li>• Journals</li> <li>• Notebooks</li> <li>• Essays</li> <li>• Student projects</li> <li>• Small group instruction</li> <li>• Individual instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Re-teach</li> <li>• Structure</li> <li>• Study Guides</li> <li>• Extended times</li> <li>• Alternative assignments</li> <li>• Peer/tutor</li> <li>• Planned courses for exceptional students shall be modified as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production.</li> <li>• Access different research components</li> <li>• Analyze and synthesize data</li> <li>• Organize/summarize charts and graphs</li> <li>• Apply metacognitive skills</li> <li>• Solve problems</li> <li>• Participate in simulations</li> <li>• Use a systems model to study and evaluate technology</li> </ul>

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