WEST JEFFERSON HILLS SCHOOL DISTRICT
TECHNOLOGY CURRICULUM

GRADE 5

PA Academic Standards Student must be able to do	**Objective** Content or process student will be able to know and do	**Instructional Methods**	**Materials/ Resources** Textbooks, trade books, workbooks, software, hardware, etc.	***Assessment Procedures** *Additional adaptations, modifications, accommodations, and enrichment/ acceleration will be provided per IEP	***Additional Learning** Opportunities for students who do not meet basic standards *Additional adaptations, modifications, and accommodations will be provided per IEP	***Extended Learning** Opportunities for students who can go beyond the basic standards. *Additional enrichment/acceleration will be provided per IEP
Technology Education 3.6.7 Grade 5						
A. Explain biotech-nologies that relate to related technologies of propagating, growing, maintaining, adapting, treating, and converting. • Identify the environmental, societal and economic impacts that waste has in the environment. • Identify and explain the impact that a specific medical advancement has on society. • Explain the factors that were taken into consideration when a specific object was designed. • Define and describe how fuels and energy can be generated through the process of biomass conversion.		• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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Technology Education 3.6.7 Grade 5						
						• Describe trends and possible future developments in technology. • Create technological design briefs to document problem solving. • Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents. • Analyze current changes in technologies and predict the effect those changes have on the workforce and society

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Technology Education 3.6.7 Grade 5						
B. Explain information technologies of encoding, transmitting, receiving, storing, retrieving, and decoding. • Demonstrate the effectiveness of image generating technique to communicate a story (e.g., photography, video). • Analyze and evaluate the effectiveness of a graphic object designed and produced to communicate a thought or concept. • Apply basic technical drawing techniques o communicate an idea or solution to a problem.	• Communicate electronically to collaborate with experts, peers, and others to analyze data and/or develop an academic product. • Use prescribed technology tools for publishing and presenting information.	• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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Technology Education 3.6.7 Grade 5						
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Technology Education 3.6.7 Grade 5						
C. Explain physical technologies of structural design, analysis and engineering, personnel relations, financial affairs, structural production, marketing research and design. • Use knowledge of material effectiveness to solve specific construction problems (e.g., steel vs. wood bridges). • Differentiate among the different types of construction applications (e.g., microwave tower, power plants, and aircrafts. • Explain basic material processes that manufacturing objects undergo during production. (e.g., separating, forming, combining).	• Use prescribed technology tools for publishing and presenting information.	• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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Technology Education 3.6.7 Grade 5						
• Evaluate a construction activity by specifying task analyses and necessary resources. • Explain the relationships among the basic resources needed in the production process for a specific manufactured object. • Explain the difference between design engineering and production engineering processes. • Analyze manufacturing steps that affect waste and pollutants. • Explain transportation technologies of propelling, structuring, suspending, guiding, controlling, and supporting.						• Describe trends and possible future developments in technology. • Create technological design briefs to document problem solving. • Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents. • Analyze current changes in technologies and predict the effect those changes have on the workforce and society

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Technology Education 3.6.7 Grade 5						
• Identify and explain the workings of several mechanical power systems. • Model and explain examples of vehicular propulsion, control, guidance, structure and suspension systems. • Explain the limitations of land, marine, air and space transportation systems.						

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Technology Devices 3.7.7 Grade 5						
A. Describe the safe and appropriate use of tools, materials and techniques to answer questions and solve problems. • Identify uses of tools, machines, materials, information, people, money, energy, and time that meet specific design criteria. • Describe safe procedures for using tools and materials. • Assess materials for appropriateness of use.	• Discuss the basic issues related to responsible use of technology and information and describe personal consequence of inappropriate use. • Describe and practice safe internet/intranet usage (e.g., do not post inappropriate or harmful materials, do not reveal personal information, follow WJHSD Acceptable Use Policy). • Describe and practice "netiquette" when using the Internet and electronic mail (e.g., publish photographs of people only with their permission).	• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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Technology Devices 3.7.7 Grade 5						
	• Follow the rules for deciding when permission is needed for using the work of others. • Explain copyright laws and "fair use" guidelines. • Exhibit legal and ethical behavior when using technology and information and discuss consequence of misuse.					• Describe trends and possible future developments in technology. • Create technological design briefs to document problem solving. • Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents. • Analyze current changes in technologies and predict the effect those changes have on the workforce and society

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Technology Devices 3.7.7 Grade 5						
B. Use appropriate instruments and apparatus to study materials. • Select appropriate instruments to measure the size, weight, shape and temperature of living and non-living objects. • Apply knowledge of different measurement systems to measure and record objects' properties.	• Students can apply special affects such as rotate and flip horizontal/vertical in a draw program.	• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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Technology Devices 3.7.7 Grade 5						
C. Explain and demonstrate basic computer operations and concepts. • Know specialized computer applications used in the community. • Describe the function of advanced input and output devices (e.g., scanners, video images, plotters, projectors) and demonstrate their use. • Demonstrate age appropriate keyboarding skills and techniques.	• Use basic vocabulary related to technology (e.g., Fire Wall, USP Parallel, serial, scanning, digitizing) • Use basic vocabulary related to systems (e.g., network, Internet, infrastructure, server, firewall, LAN and WAN) • Demonstrate use touch typing strategies to reach a minimum of 25 words per minute with accuracy. • Retrieve and save information remotely (e.g., network servers, Internet). • Demonstrate functional operations of technology devices	• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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Technology Devices 3.7.7 Grade 5						
	(e.g., presentation devices, digital camera, scanners, document cameras, scientific probes. • Using paint, draw, and graphics students will highlight a graphic using the frame marquee or lasso tool in a paint program. • Students can copy a graphic to the clipboard. • Students can use the thesaurus • Students can insert, position, and remove tabs. • Students can import, position, and manipulate relevant graphics into a word processing document.					• Describe trends and possible future developments in technology. • Create technological design briefs to document problem solving. • Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents. • Analyze current changes in technologies and predict the effect those changes have on the workforce and society

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Technology Devices 3.7.7 Grade 5						
	• Students can create an electronic bookmark. • Students can capture information from a CD Rom article and transfer notes too notepad or a word processor. • Students can create an outline for a report using information from a CD Rom. • Students can recognize the parts of a spreadsheet. • Students can understand the purpose of a spread sheet. • Students can graph data using a spreadsheet.					

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Technology Devices 3.7.7 Grade 5						
D. Apply computer software to solve specific problems. • Identify software designed to meet specific needs (e.g., Computer Aided Drafting, design software, tutorial, financial, presentation software). • Identify and solve basic software problems relevant to specific software applications. • Identify basic multimedia applications • Demonstrate a basic knowledge of desktop publishing applications.	• Students can create a graphic and export it to another document. • When a system is not working properly, demonstrate an understanding of hardware, software, and connectivity problem solving processes. • Use troubleshooting strategies to solve application problems (e.g., file management strategies, on-line help strategies, documentation, collaboration with others) • Use troubleshooting strategies to identify basic connectivity problems	• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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Technology Devices 3.7.7 Grade 5						
• Apply intermediate skills in utilizing word processing, database and spreadsheet software. • Apply basic graphic manipulation techniques.	(e.g., use on-line help, use documentation, collaboration with others.) • Use technology tools to support system analysis and modeling (i.e., Science, Math, Language Arts) • Manipulate several variables in a computer simulation to reach a desired outcome (e.g., simulation software, web based simulation, textbook support software) • Determine when technology is useful and select and use the appropriate tools and technology resources to solve problems.					• Describe trends and possible future developments in technology. • Create technological design briefs to document problem solving. • Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents. • Analyze current changes in technologies and predict the effect those changes have on the workforce and society

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Technology Devices 3.7.7 Grade 5						
	• Based on class-defined problems, use technology to: -collect data (e.g., counting versus using a probe) -interpret data (e.g., use of spreadsheets) -express a solution to the problem (creating a model versus using a spreadsheet) -present findings (e.g., create a poster versus an electronic presentation) • Use formatting capabilities of technology tools for communicating and illustrating. • Use word processing editing tools to revise a document (e.g., cut and paste, tabs and margins, font size, font style, delete and word selecting, spell check, click and drag.)					

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Technology Devices 3.7.7 Grade 5						
	• Design a word processing document with graphical elements (e.g., clip art, digital photographs, symbols, using text wrap, cropping, sizing, drawing tools.) • Use a variety of technology tools for data collection and recording data (e.g., science probe graphing, calculator, PDA (Personal Digital Assistant), alternative keyboard, Internet web cams) • Create and use a spreadsheet to analyze data (e.g., use formulas, crate charts and graphs) • Create a database with multiple fields to manipulate data in a variety of ways (e.g., sort, merge, list and report)					

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Technology Devices 3.7.7 Grade 5						
	• Publish and present information using technology tools. • Design and create a multimedia presentation or web page using multiple digital sources (e.g., from camera, video, scanner, CD-Rom, Internet) • Publish or present the above production. • Use telecommunication efficiently and effectively to access remote information and communicate with others in support of facilitated and independent learning. • Communicate independently via email, Internet, and or videoconferencing with people in a remote location.					

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Technology Devices 3.7.7 Grade 5						
E. Explain basic computer communications systems. • Describe the organization and functions of the basic parts that make up the World Wide Web. • Apply advanced electronic mail functions. • Apply basic on-line research techniques to solve a specific problem.	• Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom. • Plan, design, and present an academic product using technology tools (e.g., multimedia authoring, presentation software, digital camera, scanner, projection devices) • Collaboratively use telecommunications and online resources.	• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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	• Locate information from electronic resources. • Identify electronic research resources. • Define subject searching and devise a search strategy to locate information using available electronic research resources (i.e. electronic card catalog, online or CD-Rom reference resources) • Explain the difference between subject and keyboarding researching. • Construct keyword searches. • Identify the author, copyright date and publisher of information located in electronic resources, including Internet resources. • Create citations for electronic research sources following a prescribed format. • Gather research from a variety of electronic sources and identify the most appropriate information for answering the research questions.					• Describe trends and possible future developments in technology. • Create technological design briefs to document problem solving. • Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents. • Analyze current changes in technologies and predict the effect those changes have on the workforce and society

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PA Academic Standards Student must be able to do	**Objective** Content or process student will be able to know and do	**Instructional Methods**	**Materials/ Resources** Textbooks, trade books, workbooks, software, hardware, etc.	***Assessment Procedures** *Additional adaptations, modifications, accommodations, and enrichment/ acceleration will be provided per IEP	***Additional Learning** Opportunities for students who do not meet basic standards *Additional adaptations, modifications, and accommodations will be provided per IEP	***Extended Learning** Opportunities for students who can go beyond the basic standards. *Additional enrichment/acceleration will be provided per IEP
Science Technology and Human Endeavors 3.8.7 Grade 5						
A. Explain how sciences and technologies are limited in their effects and influences on society. • Identify and describe the unavoidable constraints of technological design. • Identify changes in society as a result of a technological development. • Identify and explain improvements in transportation, health, sanitation, and communications as a result of advancements in science and technology and how they effect our lives.	• 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, cost) • 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 and/or eliminated due to technological advances, possible infringement of privacy)	• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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	• Discuss the social implications of the "digital divide" (e.g., homes and schools with much technology and connectivity versus those with less or none.)					• Describe trends and possible future developments in technology. • Create technological design briefs to document problem solving. • Set up and manage a homework hotline, discussion group, threaded discussion and/or email system for students and parents. • Analyze current changes in technologies and predict the effect those changes have on the workforce and society

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B. Explain how human ingenuity and technological resources satisfy specific human needs and improve the quality of life. • Identify interrelationships between systems and resources. • Identify and describe the resources necessary to solve a selected problem in a community and improve the quality of life. • Identify and explain specific examples of how agricultural science has met human needs and has improved the quality of life.		• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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Science Technology and Human Endeavors 3.8.7 Grade 5						
C. Identify the pros and cons of applying technological and scientific solutions to address problems and the effect upon society. • Describe the positive and negative expected and unexpected effects of specific technological developments. • Describe ways technology extends and enhances human abilities.		• Lecture • Discussion • Cooperative Learning • Demonstration • Video Taping of student presentations • Simulation • Guided Practice • Role Playing • Experimental/ Inquiry Learning • Modeling • Flexible Grouping	• Computer • Printer • CCC • Transparencies • Posters • Study Prints • United Streaming • Websites • Internet • Software • Black Line Masters	• Tests/Quizzes • Oral Presentation • Daily homework • Experiments • Journals • Journals • Notebooks • Essays • Student projects • Small group instruction • Individual instruction	• Re-teach • Structure • Study Guides • Extended times • Alternative assignments • Peer/tutor • Planned courses for exceptional students shall be modified as needed	• Manage a complex technology system such as a local area network, video distribution at a school, or lighting for a production. • Access different research components • Analyze and synthesize data • Organize/summarize charts and graphs • Apply metacognitive skills • Solve problems • Participate in simulations • Use a systems model to study and evaluate technology

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