Southern York County School District Instructional Plan

Course/Subject: Computer Applications II (Tech Shed)
Grade Level: 9, 10, 11, 12

Textbook(s)/Instructional Materials Used: Various resources used to meet curriculum requirements	
Dates: August-May	Unit Plan 1: Influence of Emerging Technologies & Digital Citizenship

Stage 1 – Desired Results

PA Core State Assessments/Standards:

1. **Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.**

   a. Apply existing knowledge to generate new ideas, products or processes.
   b. Create original works as a means of personal or group expression.
   c. Use models and simulations to explore complex systems and issues.
   d. Identify trends and forecast possibilities.

2. **Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and contribute to the learning of others.**
   a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
   b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
   c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
   d. Contribute to project teams to produce original works or solve problems.

3. **Research and information fluency: Students apply digital tools to gather, evaluate, and use information.**

   a. Plan strategies to guide inquiry
   b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
   c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
   d. Process data and report results

4. **Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage products, solve problems, and make informed decisions using appropriate digital tools and resources.**

   a. Identify and define authentic problems and significant questions for investigation.
   b. Plan and manage activities to develop a solution or complete a project.
   c. Collect and analyze data to identify solutions and/or make informed decisions.
   d. Use multiple processes and diverse perspectives to explore alternative solutions.

5. **Digital Citizenship: Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior.**

   a. Advocate and practice safe, legal and responsible use of information and technology.
   b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity.
   c. Demonstrate personal responsibility for lifelong learning.
   d. Exhibit leadership for digital citizenship.

6. **Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.**

   a. Understand and us technology systems
   b. Select and use applications effectively and productively
   c. Troubleshoot systems and applications

d. Transfer current knowledge to learning of new technologies.

Business, Computer, and Information Technology

15.4.12 A Apply the creative and productive use of emerging technologies for educational and personal success

15.4.12 D Evaluate emerging input technologies.

12.4.12. B Evaluate the impact of social, legal, ethical, and safe behaviors on digital citizenship

Understanding(s): *Students will understand*	Essential Question(s):
1. How technology is used to achieve academic and professional success. 2. Innovation in technology is required in order to evolve our business and social environment. 3. Institutions create acceptable use policies to protect their employees, customers, and themselves.	▪ How does technology influence the business and social environment? ▪ Why are acceptable use policies created and implemented by organizations?
Learning Objectives: *Students will know…*	*Students will be able to:*
▪ Emerging technology is new technology that is currently being developed or will be developed in the next five to ten years, and will alter the business and social environment. ▪ An acceptable use policy is a binding document stipulation practices a user must agree to in order to access a particular network.	▪ Identify uses of information technology in the home, school, workplace, and global society ▪ Synthesize how information technologies meet human needs and affect quality of life ▪ Investigate case studies to identify what successful technology integration ▪ Identify emerging technologies that will make a significant contribution to the business and social environment. ▪ Discuss basic issues related to responsible use of technology and describe personal or legal consequences of inappropriate use

Dates: August-May	Unit Plan 2: Hardware

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Stage 1 – Desired Results

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PA Core State Assessments/Standards:

1. **Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.**

    a. Apply existing knowledge to generate new ideas, products or processes.
    b. Create original works as a means of personal or group expression.
    c. Use models and simulations to explore complex systems and issues.
    d. Identify trends and forecast possibilities.

2. **Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and contribute to the learning of others.**

    a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
    b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
    c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
    d. Contribute to project teams to produce original works or solve problems.

3. **Research and information fluency: Students apply digital tools to gather, evaluate, and use information.**

    a. Plan strategies to guide inquiry

b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
   c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
   d. Process data and report results

4. **Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage products, solve problems, and make informed decisions using appropriate digital tools and resources.**

   a. Identify and define authentic problems and significant questions for investigation.
   b. Plan and manage activities to develop a solution or complete a project.
   c. Collect and analyze data to identify solutions and/or make informed decisions.
   d. Use multiple processes and diverse perspectives to explore alternative solutions.

5. **Digital Citizenship: Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior.**

   a. Advocate and practice safe, legal and responsible use of information and technology.
   b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity.
   c. Demonstrate personal responsibility for lifelong learning.
   d. Exhibit leadership for digital citizenship.

6. **Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.**

   a. Understand and us technology systems
   b. Select and use applications effectively and productively
   c. Troubleshoot systems and applications
   d. Transfer current knowledge to learning of new technologies.

Business, Computer, and Information Technology

15.4.8 C Compare and contrast peripheral devices of computing systems for specific needs

15.4.12 C Develop criteria for analyzing hardware options to meet defined needs

15.4.12 D Evaluate emerging input technologies.

Understanding(s): *Students will understand…*	**Essential Question(s):**
1. Hardware decisions should be made based on needs of the user. 2. Hardware is any part of a computer that has a physical structure including internal and external components.	▪ What are the capabilities and limitations of hardware for user needs? ▪ How are technology advancements changing traditional input and output technologies?

Learning Objectives: *Students will know…*	*Students will be able to:*
▪ The purpose, operation, and care of hardware components ▪ Key Terms: Processor, Motherboard, Expansion Slots/Cards, RAM, Hard Drive, Input, Output, Megabytes, Gigabytes	▪ Identify hardware devices appropriate for specific tasks ▪ Explain the purpose and operation of hardware components. ▪ Evaluate hardware device options to make sound consumer decisions. ▪ Troubleshoot hardware and supportive software problems. ▪ Evaluate hardware vendors, warranties, and purchasing options ▪ Analyze cost benefit and life cycle of hardware

Dates: August-May	**Unit Plan 3: Operating Systems**

Stage 1 – Desired Results

PA Core State Assessments/Standards:

1. **Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.**

   a. Apply existing knowledge to generate new ideas, products or processes.
   b. Create original works as a means of personal or group expression.
   c. Use models and simulations to explore complex systems and issues.
   d. Identify trends and forecast possibilities.

2. **Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and contribute to the learning of others.**

   a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
   b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
   c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
   d. Contribute to project teams to produce original works or solve problems.

3. **Research and information fluency: Students apply digital tools to gather, evaluate, and use information.**

   a. Plan strategies to guide inquiry
   b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
   c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
   d. Process data and report results

4. **Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage products, solve problems, and make informed decisions using appropriate digital tools and resources.**

   a. Identify and define authentic problems and significant questions for investigation.
   b. Plan and manage activities to develop a solution or complete a project.
   c. Collect and analyze data to identify solutions and/or make informed decisions.
   d. Use multiple processes and diverse perspectives to explore alternative solutions.

5. **Digital Citizenship: Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior.**

   a. Advocate and practice safe, legal and responsible use of information and technology.
   b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity.
   c. Demonstrate personal responsibility for lifelong learning.
   d. Exhibit leadership for digital citizenship.

6. **Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.**

   a. Understand and us technology systems
   b. Select and use applications effectively and productively
   c. Troubleshoot systems and applications
   d. Transfer current knowledge to learning of new technologies.

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15.4.8. E Explain the different operating systems.

15.4.12. E Analyze the different operating systems and recommend the appropriate system for specific user needs

Understanding(s): *Students will understand…*	Essential Question(s):
1. An operating system is software that supports a computer's basic functions, such as performing tasks and executing applications. 2. How to evaluate different software systems.	▪ What is the purpose of an operating system? ▪ How do you select an operating system to meet user needs?
Learning Objectives: *Students will know…*	*Students will be able to:*

▪ How to identify operating systems commonly used on modern computers. ▪ The difference between cloud-based operating systems and client-based operating systems. ▪ The purpose, operation, and care for an operating system.	▪ Navigate an operating system ▪ Describe the features of various types of operating systems ▪ Describe and analyze emerging operating systems ▪ Compare and contrast the functions, features, and limitations of different operating systems

Dates: August-May	**Unit Plan 4: Software**

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Stage 1 – Desired Results

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PA Core State Assessments/Standards:

1. **Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.**

    a. Apply existing knowledge to generate new ideas, products or processes.
    b. Create original works as a means of personal or group expression.
    c. Use models and simulations to explore complex systems and issues.
    d. Identify trends and forecast possibilities.

2. **Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and contribute to the learning of others.**

    a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
    b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
    c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
    d. Contribute to project teams to produce original works or solve problems.

3. **Research and information fluency: Students apply digital tools to gather, evaluate, and use information.**

    a. Plan strategies to guide inquiry
    b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
    c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
    d. Process data and report results

4. **Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage products, solve problems, and make informed decisions using appropriate digital tools and resources.**

    a. Identify and define authentic problems and significant questions for investigation.
    b. Plan and manage activities to develop a solution or complete a project.
    c. Collect and analyze data to identify solutions and/or make informed decisions.
    d. Use multiple processes and diverse perspectives to explore alternative solutions.

5. **Digital Citizenship: Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior.**

    a. Advocate and practice safe, legal and responsible use of information and technology.
    b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity.
    c. Demonstrate personal responsibility for lifelong learning.
    d. Exhibit leadership for digital citizenship.

6. **Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.**

    a. Understand and us technology systems
    b. Select and use applications effectively and productively
    c. Troubleshoot systems and applications
    d. Transfer current knowledge to learning of new technologies.

Business, Computer, and Information Technology
15.4.12 G Create an advanced digital project using sophisticated design and appropriate software/applications

Understanding(s): *Students will understand…*	Essential Question(s):
1. Computer software are programs or applications that directs the computer to preform specific tasks and operations.	▪ How does one evaluate productivity software for student and teacher use? ▪ In what ways are problems solved using software applications?

Learning Objectives: *Students will know…*	*Students will be able to:*
▪ How to investigate and evaluate software applications ▪ How to operate, navigate, and troubleshoot the district's current technology platform	▪ Identify productivity software appropriate for specific tasks ▪ Compare and contrast productivity software features from providers ▪ Evaluate software applications for student and teacher use ▪ Evaluate the effectiveness of a software to solve specific problems ▪ Manipulate productivity software to create training materials for students and staff use ▪ Create projects that include a variety of media ▪ Diagnose and solve problems resulting from productivity software's use ▪ Analyze cost benefit and life cycles of software ▪ Interpret and analyze software license agreements and terms of agreement statements

Dates: August-May	Unit Plan 5: Networking

Stage 1 – Desired Results

PA Core State Assessments/Standards:

1. **Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.**

   a. Apply existing knowledge to generate new ideas, products or processes.
   b. Create original works as a means of personal or group expression.
   c. Use models and simulations to explore complex systems and issues.
   d. Identify trends and forecast possibilities.

2. **Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and contribute to the learning of others.**

   a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
   b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
   c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
   d. Contribute to project teams to produce original works or solve problems.

3. **Research and information fluency: Students apply digital tools to gather, evaluate, and use information.**

   a. Plan strategies to guide inquiry

    b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

    c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.

    d. Process data and report results

4. **Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage products, solve problems, and make informed decisions using appropriate digital tools and resources.**

    a. Identify and define authentic problems and significant questions for investigation.
    b. Plan and manage activities to develop a solution or complete a project.
    c. Collect and analyze data to identify solutions and/or make informed decisions.
    d. Use multiple processes and diverse perspectives to explore alternative solutions.

5. **Digital Citizenship: Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior.**

    a. Advocate and practice safe, legal and responsible use of information and technology.
    b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity.
    c. Demonstrate personal responsibility for lifelong learning.
    d. Exhibit leadership for digital citizenship.

6. **Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.**

    a. Understand and us technology systems
    b. Select and use applications effectively and productively
    c. Troubleshoot systems and applications
    d. Transfer current knowledge to learning of new technologies.

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15.4.8 Identify network communication technologies.

15.4.12 F Compare and contrast network environments, including function of network devices and connectivity issues.

Understanding(s): *Students will understand…*	**Essential Question(s):**
1. A computer network is a telecommunications network which allows computers to share and exchange data. 2. Network security is the process of taking preventive measures to protect networking infrastructure from unauthorized access and misuse	▪ How does the structure of an organization dictate the structure of a computer network? ▪ How do you know when to make any networking changes in an organization?

Learning Objectives: *Students will know…*	*Students will be able to:*
▪ Computer networks enable multiple users to share devices, file sharing and use of remote systems and programs. ▪ Key words: LAN, PAN, WAN, Internet	▪ Apply basic networking terminology to a network environment ▪ Identify network devices and their function ▪ Distinguish between local area network, wide area network, and wireless protocols. ▪ Identify components and characteristics of public networks ▪ Analyze and evaluate emerging communication technologies for use in organizations. ▪ Evaluate network security in an organization.

Dates: August-May	Unit Plan 6: Interactive Multimedia

PA Core State Assessments/Standards:

1. **Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.**

    a. Apply existing knowledge to generate new ideas, products or processes.
    b. Create original works as a means of personal or group expression.
    c. Use models and simulations to explore complex systems and issues.
    d. Identify trends and forecast possibilities.

2. **Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and contribute to the learning of others.**

    a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
    b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
    c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
    d. Contribute to project teams to produce original works or solve problems.

3. **Research and information fluency: Students apply digital tools to gather, evaluate, and use information.**

    a. Plan strategies to guide inquiry
    b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
    c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
    d. Process data and report results

4. **Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage products, solve problems, and make informed decisions using appropriate digital tools and resources.**

    a. Identify and define authentic problems and significant questions for investigation.
    b. Plan and manage activities to develop a solution or complete a project.
    c. Collect and analyze data to identify solutions and/or make informed decisions.
    d. Use multiple processes and diverse perspectives to explore alternative solutions.

5. **Digital Citizenship: Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior.**

    a. Advocate and practice safe, legal and responsible use of information and technology.
    b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity.
    c. Demonstrate personal responsibility for lifelong learning.
    d. Exhibit leadership for digital citizenship.

6. **Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.**

    a. Understand and us technology systems
    b. Select and use applications effectively and productively
    c. Troubleshoot systems and applications
    d. Transfer current knowledge to learning of new technologies.

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15.4.12 G Create an advanced digital project using sophisticated design and appropriate software/applications

15.4.8 K Create a multimedia project using student-created digital media

15.4.12 K Evaluate advanced multimedia work products and make recommendations based on the evaluation

15.4.8 B Interpret and apply appropriate social, legal, ethical, and safe behaviors of digital citizenship.

15.4.12 B Evaluate the impact of social, legal, ethical, and safe behaviors on digital citizenship.
15.3.12 T Demonstrate application of digital citizenship in work and personal situations.

Understanding(s): *Students will understand…*	Essential Question(s):
1. The effective combination of various types of media into a single presentation improves the message communication. 2. All forms of media subject to copyright laws and must be treated ethically.	▪ How does combining multiple forms of media impact the effectiveness of communicating a message to engage and educate an audience? ▪ How do ethics and copyright law influence the use and creation of media?
Learning Objectives: *Students will know…* ▪ How to select applications effectively and productively to create original work ▪ How to manipulate multimedia software and web applications.	*Students will be able to:* ▪ Create and collaborate with students and teachers to design educational technology content (blogs, podcasting, webcasting, tutorials). ▪ Apply digital citizenship by practicing safe, legal, and responsible use of information and technology

Dates: Dates: August-May	Unit Plan 7: Technical Support & Ethical and Legal Issues

Stage 1 – Desired Results

PA Core State Assessments/Standards:

ISTE Standards

1. **Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.**

   a. Apply existing knowledge to generate new ideas, products or processes.
   b. Create original works as a means of personal or group expression.
   c. Use models and simulations to explore complex systems and issues.
   d. Identify trends and forecast possibilities.

2. **Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and contribute to the learning of others.**

   a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
   b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
   c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
   d. Contribute to project teams to produce original works or solve problems.

3. **Research and information fluency: Students apply digital tools to gather, evaluate, and use information.**

   a. Plan strategies to guide inquiry
   b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
   c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
   d. Process data and report results

4. **Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage products, solve problems, and make informed decisions using appropriate digital tools and resources.**

   a. Identify and define authentic problems and significant questions for investigation.
   b. Plan and manage activities to develop a solution or complete a project.

    c. Collect and analyze data to identify solutions and/or make informed decisions.
    d. Use multiple processes and diverse perspectives to explore alternative solutions.

5. **Digital Citizenship: Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior.**

    a. Advocate and practice safe, legal and responsible use of information and technology.
    b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity.
    c. Demonstrate personal responsibility for lifelong learning.
    d. Exhibit leadership for digital citizenship.

6. **Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.**

    a. Understand and us technology systems
    b. Select and use applications effectively and productively
    c. Troubleshoot systems and applications
    d. Transfer current knowledge to learning of new technologies.

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15.4.8 B Interpret and apply appropriate social, legal, ethical, and safe behaviors of digital citizenship.

15.4.12 B Evaluate the impact of social, legal, ethical, and safe behaviors on digital citizenship.

15.3.12 T Demonstrate application of digital citizenship in work and personal situations.

15.3.12 S Evaluate electronic communication based on need.

15.3.12 W Collaborate via electronic communication with peers, educators, and/or professionals to meet organizational goals.

15.3.8 M Demonstrate proper etiquette when networking either face to face or online

15.3.12 N Demonstrate appropriate work ethic in the workplace, community, and classroom.

Understanding(s): *Students will understand…*	**Essential Question(s):**
1. Help desk technician must possess soft skills to provide technology education to end users. 2. Help desk technicians must adhere to privacy, safety, and security policies.	▪ How do help desk technicians and technology support and training professionals effectively work with employees to meet organizational needs?
Learning Objectives: *Students will know…*	*Students will be able to:*
▪ How to communicate and work in a team to solve problems and share knowledge.	▪ Analyze and discuss privacy issues within an organization ▪ Create help desk procedures and solve help desk tickets ▪ Create training materials for users