

IT Essentials

Grades: 10-12

Unit: IT Essentials	
Title: Chapter 1: Introduction to the Personal Computer	
Summary and Rationale	
<p>Chapter 1 identifies the various hardware components that are required to build a desktop computer and explains the unique purpose of each component, including how all components work together as a unit. This chapter also provides students with the knowledge needed to select computer components based on hardware compatibility requirements and the needs of a customer.</p> <p>This chapter is important because it provides the foundational information that is required to build, upgrade, design and repair personal computers.</p> <p>Chapter 1 in IT Essentials 5.0 is an integration of concepts featured in Chapter 1 and Chapter 11 from version 4.1.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
<u>Personal Financial Literacy 9.1</u>	
<u>Career Awareness, Exploration, and Preparation 9.2</u>	
<u>Career and Technical Education 9.3</u>	
<u>Career Ready Practices</u>	
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP3.	Attend to personal health and financial well-being.
CRP4.	Communicate clearly and effectively and with reason.
CRP5.	Consider the environmental, social and economic impacts of decisions.
CRP6.	Demonstrate creativity and innovation.
CRP7.	Employ valid and reliable research strategies.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9.	Model integrity, ethical leadership and effective management.
CRP10.	Plan education and career paths aligned to personal goals.

CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.
Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
<p>This course covers the fundamentals of computer hardware and software and advanced concepts such as security, networking, and the responsibilities of an IT professional. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. New topics in this version include mobile devices such as tablets and smartphones and client side virtualization. Expanded topics include the Microsoft Windows 7 operating system, security, networking, and troubleshooting.</p>	
Essential Questions	
Evidence of Learning (Assessments)	
<p>Chapter content Presentation Assignments (Group) Optional Skill Integration Challenge</p> <p>Students should complete the Chapter 1 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> ● Personal Computer Systems ● Describe personal computer systems ● Selecting Replacement Computer Components ● Describe situations requiring replacement of computer components ● Configurations for Specialized Computer Systems ● Describe hardware configurations for task-specific computers ● Lab Procedures and Tool Use ● Demonstrate safe lab procedures, proper tool use, and how to assemble a personal computer <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Explain IT industry certifications. ● Describe a computer system. ● Identify the names, purposes, and characteristics of cases and power supplies. ● Identify the names, purposes, and characteristics of internal components. ● Identify the names, purposes, and characteristics of ports and cables. ● Identify the names, purposes, and characteristics of input devices. ● Identify the names, purposes, and characteristics of output devices. ● Explain system resources and their purposes. 	

Integration

Technology Integration

- Activity PDF
- Device with Internet access,
- Packet Tracer
- Word processing or spreadsheet software program
- Activity PDF
- 3 Switches (Cisco 2960 with Cisco IOS Release 15.0(2) lanbasek9 image or comparable)
- 2 PCs (Windows 7, Vista, or XP with terminal emulation program, such as Tera Term)
- Console cables to configure the Cisco IOS devices via the console ports
- Ethernet cables as shown in the topology

Writing Integration

Competencies

Suggested Resources

Activity PDF
Packet Tracer
Curriculum content
MS Viso

IT Essentials

Grades: 10-12

Unit: IT Essentials	
Title: Chapter 2: Lab Procedures and Tool Use	
Summary and Rationale	
<p>This chapter discusses safe lab procedures, tool use for computer maintenance, and proper disposal of hazardous materials. It provides an overview of safe working conditions in the lab and in other environments. Basic electrical, fire, and chemical safety guidelines are covered, as well as other potential workplace hazards. Much of the chapter is devoted to identification and proper usage of hand tools and software tools. It also discusses the importance of organization of tools, and cleaning procedures for all computer components.</p> <p>IT technicians have cut, burned, and even electrocuted themselves while working on computers. IT technicians have short-circuited working components, thus rendering the components unusable. This chapter is important because it explains the good work habits that all technicians must develop in order to avoid injury to themselves or others, and to avoid damaging or destroying equipment, or losing data.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
Personal Financial Literacy 9.1	
Career Awareness, Exploration, and Preparation 9.2	
Career and Technical Education 9.3	
Career Ready Practices	
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CRP10.	Plan education and career paths aligned to personal goals.
CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.
Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
<p>This course covers the fundamentals of computer hardware and software and advanced concepts such as security, networking, and the responsibilities of an IT professional. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. New topics in this version include mobile devices such as tablets and smartphones and client side virtualization. Expanded topics include the Microsoft Windows 7 operating system, security, networking, and troubleshooting.</p>	
Essential Questions	
Evidence of Learning (Assessments)	
<p>Chapter content Presentation Assignments (Group) Optional Skill Integration Challenge Students should complete the Chapter 1 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> ● Explain the purpose of safe working conditions and procedures. ● Identify tools and software used with personal computer components and their purposes. ● Implement proper tool use. <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Explain the purpose of safe working conditions and procedures. ● Identify safety procedures and potential hazards for users and technicians. ● Identify tools and software used with personal computer components and their purposes. ● Identify hardware tools and their purpose. ● Identify software tools and their purpose. ● Identify organizational tools and their purpose. ● Demonstrate proper use of an antistatic wrist strap and an antistatic mat. 	
Integration	
Technology Integration	
2.2.2.3 - Worksheet - Diagnostic Software	

2.2.4.4 – Lab- Using a Multimeter and a Power Supply Tester

Lab is new to the curriculum.

Emphasize safety when measuring electrical quantities.

2.2.4.5 – Lab – Testing UTP Cables Using a Loopback Plug and a Cable Meter

Lab is new to the curriculum.

2.2.4.7 – Lab- Computer Disassembly

Emphasize the importance of taking notes and being organized during disassembly. Have all students document the disassembly process. Allow students to take pictures during disassembly.

Provide students with a framework for organization during disassembly. Ensure students have antistatic bags for components and containers for screws.

Have students work in pairs or groups dependent on equipment available.

Writing Integration

Competencies

Suggested Resources

Activity PDF
Packet Tracer
Curriculum content
MS Viso

IT Essentials

Grade: 10-12

Unit: IT Essentials Title: Chapter 3 Computer Assembly	
Summary and Rationale	
<p>Chapter 3 provides step-by-step instructions for assembling a desktop computer. Hands-on labs allow the student to assemble a computer with an emphasis on safe practices. The chapter also provides students with foundational knowledge of BIOS settings, as well as the knowledge required to successfully upgrade PC components.</p> <p>This chapter is important because it gives students the opportunity to apply their knowledge of computer components to computer assembly, as well as develop important skills.</p> <p>For students who do not have access to a physical desktop computer in the lab, Chapter 3 also provides a Virtual Desktop. The Virtual Desktop labs demonstrate desktop assembly through animation and student interaction.</p> <p>Chapter 3 in IT Essentials 5.0 is an integration of concepts featured in Chapter 3 and Chapter 11 from version 4.1.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
Personal Financial Literacy 9.1	
Career Awareness, Exploration, and Preparation 9.2	
Career and Technical Education 9.3	
Career Ready Practices	
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP3.	Attend to personal health and financial well-being.
CRP4.	Communicate clearly and effectively and with reason.
CRP5.	Consider the environmental, social and economic impacts of decisions.
CRP6.	Demonstrate creativity and innovation.
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CRP10.	Plan education and career paths aligned to personal goals.
CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.
Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
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Essential Questions	
Evidence of Learning (Assessments)	
<p>Students should complete the Chapter 1 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> ● Open the case. ● Install the power supply. ● Attach the components to the motherboard and install the motherboard. ● Install internal drives. ● Install drives in external bays. ● Install adapter cards. ● Connect all internal cables. ● Re-attach the side panels and connect external cables to the computer. ● Boot the computer for the first time. <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Assemble a desktop computer. ● Open the case and install the power supply. ● Install all of the drives in the computer case. ● Install all of the adapter cards on the motherboard. ● Connect all of the power cables, data cables, front panel cables, and external cables in the computer, and reassemble the case. 	

- Boot the computer for the first time.
- Identify beep codes and enter the BIOS setup program.
- Describe BIOS setup screens and items.
- Upgrade and configure components in a computer system to meet a customer's requirements.
- Upgrade and configure a motherboard, CPU, RAM, and BIOS.
- Upgrade and configure storage devices.
- Upgrade and configure input and output devices.

Integration

Technology Integration

3.2: Lab: Install the Power Supply
 3.2 Optional Activity: Virtual Desktop – Power Supply
 3.3.3: Lab: Install the Motherboard
 3.3.3: Optional Activity: Virtual Desktop – Motherboard
 3.4: Optional Activity: Virtual Desktop – Internal Drives
 3.5.2: Lab: Install the Drives
 3.5.2: Optional Activity: Virtual Desktop – Drives in External Bays
 3.6.3: Lab: Install Adapter Cards
 3.6.3: Optional Activity: Virtual Desktop – Adapter Cards
 3.7.2: Lab: Install Internal Cables
 3.7.2: Optional Activity: Virtual Desktop – Internal Cables
 3.8.2: Lab: Complete the Computer Assembly
 3.8.2: Optional Activity: Virtual Desktop – External Cables
 3.9.2: Lab: Boot the Computer

Chapter 3 Quiz

Writing Integration

Competencies

Suggested Resources

Activity PDF
 Packet Tracer
 Curriculum content
 MS Viso

IT Essentials

Grade: 10-12

Unit: IT Essentials	
Title: Chapter 4: Overview of Preventative Maintenance	
Summary and Rationale	
<p>This chapter discusses preventive maintenance and a methodology for troubleshooting computer problems. It explains the benefits of having a preventive maintenance program, including hardware and software. This chapter also outlines a process for troubleshooting computer hardware and software problems.</p> <p>This chapter is important because many IT technicians are responsible for the upkeep of all of the computers at a company. Having and adhering to a preventive maintenance plan saves the company money by avoiding many types of computer problems. When a problem does occur, a technician who uses the troubleshooting methodology that is described in this chapter can, in most instances, identify and fix the problem quickly.</p> <p>Preventive maintenance and troubleshooting skills are so important that they are included in almost every chapter that follows this one.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
Personal Financial Literacy 9.1	
Career Awareness, Exploration, and Preparation 9.2	
Career and Technical Education 9.3	
Career Ready Practices	
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CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.
Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
<p>This course covers the fundamentals of computer hardware and software and advanced concepts such as security, networking, and the responsibilities of an IT professional. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. New topics in this version include mobile devices such as tablets and smartphones and client side virtualization. Expanded topics include the Microsoft Windows 7 operating system, security, networking, and troubleshooting.</p>	
Essential Question	
Evidence of Learning (Assessments)	
<p>Students should complete the Chapter 4 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> ● Explain the purpose of preventive maintenance. ● Identify the steps of the troubleshooting process.. <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Describe the purpose and benefits of preventive maintenance for personal computers. ● Explain the purpose of PC preventive maintenance. ● Identify the steps of the troubleshooting process and perform basic PC troubleshooting. ● List and explain the purpose of each of the troubleshooting process steps. ● Identify common problems and solutions for PCs. 	
Integration	
Technology Integration	
<p>There are no labs in this chapter. Chapter 4 Quiz</p>	
Writing Integration	

Competencies
Suggested Resources
Activity PDF Packet Tracer Curriculum content MS Viso

IT Essentials

Grades: 10-12

Unit: IT Essentials	
Title: Chapter 5: Operating Systems	
Summary and Rationale	
<p>This chapter discusses operating systems (OS). It covers the functions and terminology of operating systems, specifically Windows 2000, Windows XP, and Windows Vista. Because operating system functionality varies, this chapter explains how to determine the appropriate OS based on customer needs. The student will install an OS, navigate the GUI, perform preventive maintenance, and troubleshoot computer problems that are related to the OS.</p> <p>This chapter is important because operating systems control most of the functions of a computer. Most software, such as Microsoft Office, requires an OS to operate. Many of the common computer problems that technicians must solve are related to the OS.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
<u>Personal Financial Literacy 9.1</u>	
<u>Career Awareness, Exploration, and Preparation 9.2</u>	
<u>Career and Technical Education 9.3</u>	
<u>Career Ready Practices</u>	
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Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
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Essential Questions	
Evidence of Learning (Assessments)	
<p>Students should complete the Chapter 5 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> ● Explain the purpose of an operating system. ● Describe and compare operating systems to include purpose, limitations, and compatibilities. ● Determine the operating system based on customer needs. ● Install an operating system. ● Navigate a graphical user interface (GUI). ● Identify and apply common preventive maintenance techniques for operating systems. ● Troubleshoot operating systems <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Explain the purpose of an operating system. ● Describe characteristics of modern operating systems. ● Describe desktop and network operating systems. ● Determine applications, environments, and minimum hardware that are compatible with an OS and the customers' needs. ● Describe upgrading an operating system. ● Perform an operating system installation. ● Identify hard drive setup procedures. ● Prepare a hard drive for the installation of an operating system. ● Perform an operating system installation using default settings, ● Create computer user accounts. 	

Integration

Technology Integration

5.2.2 Worksheet: NOS Certifications and Jobs

5.3.2 Worksheet: Upgrade Hardware Components

5.4.2 Lab: Install Windows XP

5.4.2 Optional Lab: Install Windows Vista

5.4.5 Lab: Create Accounts and Check For Updates in Windows XP

5.4.5 Optional Lab: Create Accounts and Check For Updates in Windows Vista

5.4.8 Lab: Managing System Files with Built-in Utilities in Windows XP

5.4.8 Optional Lab: Managing System Files with Built-in Utilities in Windows Vista

5.4.9 Worksheet: Answer NTFS and FAT32 Questions

5.5.1 Lab: Run Commands in Windows XP

5.5.1 Optional Lab: Run Commands in Windows Vista

5.5.3 Lab: Managing Administrative Settings and Snap-ins in Windows XP

5.5.3 Optional Lab: Managing Administrative Settings and Snap-ins in Windows Vista

Writing Integration

Competencies

Suggested Resources

Activity PDF

Packet Tracer

Curriculum content

MS Viso

IT Essentials

Grades: 10-12

Unit: IT Essentials	
Title: Chapter 6 - Fundamental Laptops and Portable Devices	
Summary and Rationale	
<p>This chapter describes laptops and other portable devices. Portable devices, such as smartphones and personal digital assistants, have very few parts that can be replaced. These devices usually require a technician with a brand-specific certification to repair them. In this chapter, the emphasis is on laptops, their components, and how to configure them. Laptop preventive maintenance and troubleshooting are also covered.</p> <p>This chapter is important because more people are using laptops in addition to, or instead of, desktop computers. There are differences across makes and models of laptops, but certain technologies apply to all. Today's IT technicians are likely to spend much of their time maintaining and troubleshooting laptops. For those students who do not have access to a physical laptop computer in the lab, Chapter 6 also provides a Virtual Laptop. The Virtual Laptop labs demonstrate laptop component installation and removal through animation and student interaction.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
<u>Personal Financial Literacy 9.1</u>	
<u>Career Awareness, Exploration, and Preparation 9.2</u>	
<u>Career and Technical Education 9.3</u>	
<u>Career Ready Practices</u>	
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Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
<p>This course covers the fundamentals of computer hardware and software and advanced concepts such as security, networking, and the responsibilities of an IT professional. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. New topics in this version include mobile devices such as tablets and smartphones and client side virtualization. Expanded topics include the Microsoft Windows 7 operating system, security, networking, and troubleshooting.</p>	
Essential Questions	
Evidence of Learning (Assessments)	
<p>Students should complete the Chapter 5 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> ● Describe laptops and other portable devices. ● Identify and describe the components of a laptop. ● Compare and contrast desktop and laptop components. ● Explain how to configure laptops. ● Compare the different mobile phone standards. ● Identify common preventive maintenance techniques for laptops and portable devices. ● Describe how to troubleshoot laptops and portable devices. <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Describe the purpose of laptop features. ● Explain the purpose and location of laptop components, special function keys; and compare and contrast a docking station with a port replicator. ● Compare and contrast desktop and laptop components. ● Describe laptop display components. ● Compare and contrast the types of laptop displays. ● Compare and contrast the types of laptop internal display components. ● Describe how to configure laptop power settings. ● Describe and configure wireless communication technology for laptops. 	

- Describe the removal and installation of laptop components

Integration

Technology Integration

6.1.2 Worksheet: Research Laptops, Smartphones, and PDAs
6.2.1 Optional Activity: Virtual Laptop – Explore Laptop
6.2.2 Optional Activity: Virtual Laptop – Keyboard
6.2.3 Worksheet: Complete Docking Stations True or False Questions
6.2.3 Optional Activity: Virtual Laptop – Docking Station
6.3.4 Worksheet: Answer Laptop Expansion Questions
6.4.1 Worksheet: Match ACPI Standards
6.4.2 Optional Activity: Virtual Laptop – Components and Devices
6.7.2 Worksheet: Research Laptop Problems
Chapter 6 Quiz

Writing Integration

Competencies

Suggested Resources

Activity PDF
Packet Tracer
Curriculum content
MS Viso

IT Essentials

Grades: 10-12

Unit: IT Essentials	
Title: Chapter 7: Fundamental Printers and Scanners	
Summary and Rationale	
<p>The chapter focuses on printers and scanners because they are common devices that are added to a computer. The chapter includes information on the different types of printers and scanners, theory of operation, steps for installing these devices, steps detailing how to share a printer in a network environment, and preventive maintenance for both printers and scanners. Troubleshooting scenarios with recommended solutions are also covered.</p> <p>This chapter is important because printers and scanners are commonly added to computers and are common sources of problems for computer users.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
<u>Personal Financial Literacy 9.1</u>	
<u>Career Awareness, Exploration, and Preparation 9.2</u>	
<u>Career and Technical Education 9.3</u>	
<u>Career Ready Practices</u>	
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Interdisciplinary Connections	

Standard x.x	
Integration of Technology	
Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
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Essential Questions	
Evidence of Learning (Assessments)	
<p>Students should complete the Chapter 5 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> • Describe the types of printers currently available. • Describe the installation and configuration process for printers. • Describe the potential safety hazards and safety procedures associated with printers and scanners. <p>Students will be able to:</p> <ul style="list-style-type: none"> • Install and configure a local printer. • Describe how to share a printer on a network • Identify and apply common preventive maintenance techniques for printers • Troubleshoot printers. 	
Integration	
Technology Integration	
<p>Lab – Install a Printer in Windows 7 Lab – Install a Printer in Windows Vista Lab – Install a Printer in Windows XP Ensure that students download the most current driver for the printer. Have students install printers on multiple occasions with different printers if possible. Instruct students how to completely remove a printer and driver from an OS. Have students document the differences in the installation process between Windows OS. Lab – Share a Printer In Windows 7 Lab – Share a Printer in Windows Vista</p>	
Writing Integration	

Competencies
Suggested Resources
Activity PDF Packet Tracer Curriculum content MS Viso

IT Essentials

Grades: 10-12

Unit: IT Essentials Title: Chapter 8 Fundamental Networks	
Summary and Rationale	
<p>The chapter introduces networking and the basic concepts that are associated with networking. Networks are everywhere; with voice, video, and data converging on the same network, it is important for students to be able to install devices on a network. Even students who are not planning on entering the networking field must be able to add devices to the network, understand basic networking concepts as they relate to such installations, and be able to configure basic network settings.</p> <p>Included in this introduction are the different types of networks, IP addressing including using DHCP and ICMP to check for connectivity, network components and cabling, Ethernet standards, Internet connectivity, and basic network troubleshooting.</p> <p>Chapter 6 in IT Essentials 5.0 is an integration of concepts from Chapter 8 and 15 in V4.1.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
<u>Personal Financial Literacy 9.1</u>	
<u>Career Awareness, Exploration, and Preparation 9.2</u>	
<u>Career and Technical Education 9.3</u>	
<u>Career Ready Practices</u>	
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP3.	Attend to personal health and financial well-being.
CRP4.	Communicate clearly and effectively and with reason.
CRP5.	Consider the environmental, social and economic impacts of decisions.
CRP6.	Demonstrate creativity and innovation.
CRP7.	Employ valid and reliable research strategies.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9.	Model integrity, ethical leadership and effective management.
CRP10.	Plan education and career paths aligned to personal goals.

CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.
Interdisciplinary Connections	
Standard x.x	
Integration of Technology	
Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
<p>This course covers the fundamentals of computer hardware and software and advanced concepts such as security, networking, and the responsibilities of an IT professional. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. New topics in this version include mobile devices such as tablets and smartphones and client side virtualization. Expanded topics include the Microsoft Windows 7 operating system, security, networking, and troubleshooting.</p>	
Essential Questions	
Evidence of Learning (Assessments)	
<p>Students should complete the Chapter 5 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> ● Describe, create and maintain a network ● Configure computers to connect to a network <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Explain the principles of networking. ● Describe types of networks. ● Describe basic networking concepts and technologies. ● Describe the physical components of a network. ● Describe LAN topologies and architectures. ● Identify standards organizations. ● Identify Ethernet standards. ● Explain OSI and TCP/IP data models. ● Describe how to configure a NIC and a modem. ● Identify names, purposes, and characteristics of other technologies that are used to establish connectivity. ● Identify and apply common preventive maintenance techniques that are used for networks. ● Troubleshoot a network. 	
Integration	

Technology Integration
8.3.2 Worksheet: Identify IP Address Classes 8.4.2 Packet Tracer Activity: Cabling a Simple Network 8.9.1 Worksheet: Internet Search for NIC Drivers 8.9.2 Lab: Configure an Ethernet NIC to use DHCP in Windows XP 8.9.2 Optional Lab: Configure an Ethernet NIC to use DHCP in Windows Vista 8.9.2 Packet Tracer Activity: Adding Computers to an Existing Network 8.10.3 Worksheet: Answer Broadband Questions 8.12.2 Worksheet: Diagnose a Network Problem
Writing Integration
Competencies
Suggested Resources
Activity PDF Packet Tracer Curriculum content MS Viso

Routing & Switching Essentials

Grade: 10-12

Unit: IT Essentials	
Title: Chapter 9 Mobile Devices	
Summary and Rationale	
<p>This chapter provides an introduction to Android and iOS mobile devices. The chapter focusses on the many features of mobile devices and their capabilities, including configuration, synchronization, data backup and troubleshooting. This chapter is important because the foundational information for mobile devices. All the material in this chapter is new to the IT Essentials curriculum.</p>	
Recommended Pacing	
2, weeks, etc.	
Standards	
Personal Financial Literacy 9.1	
Career Awareness, Exploration, and Preparation 9.2	
Career and Technical Education 9.3	
Career Ready Practices	
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
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Interdisciplinary Connections	
Standard x.x	
Integration of Technology	

Standard x.x	
CPI #	Cumulative Progress Indicator (CPI)
Instructional Focus	
Enduring Understandings	
<p>This course covers the fundamentals of computer hardware and software and advanced concepts such as security, networking, and the responsibilities of an IT professional. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. New topics in this version include mobile devices such as tablets and smartphones and client side virtualization. Expanded topics include the Microsoft Windows 7 operating system, security, networking, and troubleshooting.</p>	
Essential Questions	
Evidence of Learning (Assessments)	
<p>Chapter content Presentation Assignments (Group) Optional Skill Integre Challenge Students should complete the Chapter 7 Exam after completing this chapter. Worksheets and labs and quizzes can be used to informally assess student progress.</p>	
Objectives	
<p>Students will know:</p> <ul style="list-style-type: none"> ● Mobile Operating Systems ● Explain the purpose and characteristics of mobile operating systems. ● Methods of Securing Mobile Devices ● Explain methods for securing mobile devices. ● Network Connectivity and Email ● Explain how to configure network connectivity and email on mobile devices. ● Linux and OS X Operating Systems ● Explain the purpose and characteristics of Linux and OS X operating systems. ● Basic Troubleshooting Process for mobile, Linux and OS X Operating Systems ● Explain how to troubleshoot other operating systems. <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Worksheet - Mobile Device Information ● Worksheet is new to the curriculum. ● Teacher should prescreen the worksheet and select specific devices that students will be researching. ● Have students complete a cost analysis for the two devices at your location. ● Lab - Mobile Wi-Fi – Android and iOS ● Follow up by comparing and contrasting the different platforms. ● If mobile devices are available, students can set up wireless networks to be used in the lab. ● Lab – Passcode Locks – Android and iOS ● Paper lab is new to the curriculum. ● Follow up the lab by comparing and contrasting the different platforms 	

- Lab – Troubleshooting Mobile Devices
- Paper lab is new to the curriculum.
- Before completing the lab, have students brainstorm and document prior troubleshooting that they have completed on mobile devices
- Chapter 8 Quiz

Integration

Technology Integration

Android and iOS

Writing Integration

Competencies

Suggested Resources

Activity PDF
 Packet Tracer
 Curriculum content
 MS Viso