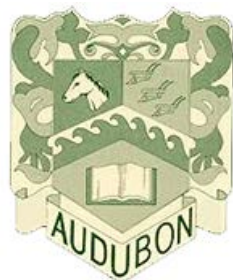


Audubon Public School District



Information Technology

Curriculum Guide

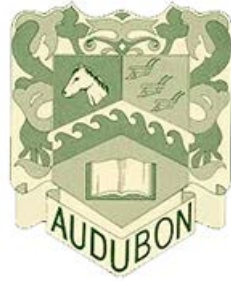
Developed by:

Mr. Daniel P. Carter Jr.

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Course Description

Information Technology

This course teaches the basic techniques of computer safety and maintenance. Students learn to assemble/disassemble personal computers (PCs & laptops) and to recognize the essential components that comprise a PC, including memory types, bus architecture, CPUs, motherboards, and storage devices. This course will also cover various operating systems which will include Linux and various Microsoft operating systems – including MS-DOS. The course follows CompTIA’s A+ certification program emphasizing “hands on” training in upgrading, diagnosing, and repairing PCs and laptops.

Overview / Progressions

Overview	Focus Indicator #	Overview	Focus Indicator #	Overview	Focus Indicator #
Unit 1	<ul style="list-style-type: none"> ● 8.2.12.E.2 ● 8.2.12.E.4 ● 9.3.12.K.6 	Unit 2	<ul style="list-style-type: none"> ● 8.2.12.C.3 ● 9.4.12.C.45 ● 9.3.IT.12 	Unit 3	<ul style="list-style-type: none"> ● 8.2.12.E.1 ● 8.2.12.E.4 ● 9.3.12.K1.3 ● 9.3.IT.12
Unit 4	<ul style="list-style-type: none"> ● 8.2.12.E.1 ● 8.2.12.E.2 ● 8.2.12.E.4 ● 9.3.12.K1.3 ● 9.3.IT-SUP.3 	Unit 5	<ul style="list-style-type: none"> ● 8.2.12.E.3 ● 9.3.IT-SUP.2 ● 9.3.IT-SUP.4 	Unit 6	<ul style="list-style-type: none"> ● 8.2.12.E.3 ● 9.3.12.K1.3 ● 9.3.IT-SUP.7 ● 9.3.IT.12
Unit 7	<ul style="list-style-type: none"> ● 8.2.12.E.1 ● 9.3.IT-SUP.5 ● 9.3.IT-SUP.7 ● 9.3.IT-SUP.8 	Unit 8	<ul style="list-style-type: none"> ● 8.2.12.E.1 ● 9.3.12.K1.3 ● 9.3.IT-SUP.1 ● 9.3.IT.12 	Unit 9	<ul style="list-style-type: none"> ● 8.2.12.E.1 ● 8.2.12.C.3 ● 9.3.IT-SUP.5 ● 9.3.IT-SUP.9
Unit 10	<ul style="list-style-type: none"> ● 9.3.IT-SUP.2 ● 9.3.IT-SUP.3 ● 9.3.IT-SUP.9 ● 9.3.IT-SUP.10 		<ul style="list-style-type: none"> ● 9.3.12.K.6 ● 9.3.IT-SUP.9 ● 9.3.IT-SUP.10 	Unit 12	<ul style="list-style-type: none"> ● 9.3.IT-SUP.2 ● 9.3.IT-SUP.3 ● 9.3.IT-SUP.6 ● 9.3.IT-SUP.7 ● 9.3.IT-SUP.10

Information Technology		Unit 1	Marking Period 1
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Focus Indicator	
Introduction to the Personal Computer (PC)	
8.2.12.E.2	Analyze the relationships between internal and external computer components
8.2.12.E.4	Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).
9.3.12.K.6	Describe trends in emerging and evolving COMPUTER technologies and their influence on IT practices.
9.3.IT.12	Demonstrate knowledge of the hardware components associated with information systems.

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Component Quiz ● Hands on project ● Weekly Participation rubric
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various parts and computers 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology ● Informational writing in information technology using similar structures. 	
Enduring Understanding	Essential Questions

<ul style="list-style-type: none"> ● Internal make up of a personal computer ● Increase information technology vocabulary 	<ul style="list-style-type: none"> ● What are the various IT certifications? ● What is the importance of the computer industry?
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Information Technology		Unit 2	Marking Period 1
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Focus Indicator	
Safe Lab Procedures and Tool Use	
8.2.12.C.3	Analyze a product or system for factors such as safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, and human factors engineering (ergonomics).
9.4.12.C.45	Examine and summarize safety-related problems common to this cluster including those that may result from working with ELECTRICAL circuits to demonstrate a broad understanding of health and safety concerns

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Hands on project ● Weekly Participation rubric
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various parts and computers 	<ul style="list-style-type: none"> ● Internet

Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology ● Informational writing in information technology using similar structures. 	
Enduring Understanding	Essential Questions
<ul style="list-style-type: none"> ● Safety procedures when working on a personal computer ● Increase information technology vocabulary 	<ul style="list-style-type: none"> ● What are the safety procedures? ● What is “ESD”? Why must it be avoided? ● Why are the safety procedures needed?

Information Technology		Unit 3	Marking Period 1
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Focus Indicator	
Computer Assembly – Step-by-Step	
8.2.12.E.1	Demonstrate an understanding of the problem-solving capacity of computers in our world.
8.2.12.E.4	Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).
9.3.12.K1.3	Apply appropriate troubleshooting techniques in resolving COMPUTER hardware software and configuration problems
9.3.IT.12	Demonstrate knowledge of the hardware components associated with information systems.

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Project rubric ● Weekly Participation rubric ● Completed assembly/disassembly ● Summative Assessment
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various parts and computers 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology 	
Enduring Understanding	Essential Questions
<ul style="list-style-type: none"> ● Internal make up of a personal computer ● Understand how to open the various personal computer cases. ● Assemble a personal computer. ● Disassemble a personal computer ● Increase information technology vocabulary 	<ul style="list-style-type: none"> ● How do you open a personal computer? ● What is the order of assembly/disassembly? Why must it be done in a specific order? ● What is the importance of the computer industry?

Information Technology	Unit 4	Marking Period 2
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Focus Indicator	
Basics of Preventive Maintenance and Troubleshooting	
8.2.12.E.1	Demonstrate an understanding of the problem-solving capacity of computers in our world.

8.2.12.E.2	Analyze the relationships between internal and external computer components
8.2.12.E.4	Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).
9.3.12.K1.3	Apply appropriate troubleshooting techniques in resolving COMPUTER hardware software and configuration problems.

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Project rubric ● Weekly Participation rubric ● Summative Assessment
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various parts and computers 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology ● Informational writing in information technology using similar structures. 	
Enduring Understanding	Essential Questions
<ul style="list-style-type: none"> ● Proper preventative maintenance. ● Proper PC cleaning ● Proper PC troubleshooting. ● Increase information technology vocabulary 	<ul style="list-style-type: none"> ● What is the importance of proper preventative maintenance? ● What is the proper way to clean a PC? ● Why is it important to properly troubleshoot?

Focus Indicator	
Fundamental Operating Systems - DOS, Win 7, Win 10, Linux	
8.2.12.E.3	Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).
9.3.IT-SUP.2	Manage operating systems and software applications, including maintenance of upgrades, patches and service packs
9.3.IT-SUP.4	Perform installation, configuration and maintenance of operating systems

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Project rubric ● Weekly Participation rubric ● Summative Assessment
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various parts and computers 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology ● Informational writing in information technology using similar structures. 	
Enduring Understanding	Essential Questions
<ul style="list-style-type: none"> ● Functions of operating systems. ● Set up an operating system 	<ul style="list-style-type: none"> ● What is the importance of an operating system? ● How do you set up an operating system?

<ul style="list-style-type: none"> • Different types of operating systems. • Increase information technology vocabulary 	<ul style="list-style-type: none"> • What is the best operating system to use?
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Information Technology		Unit 6	Marking Period 2
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Focus Indicator	
Laptop Fundamentals	
8.2.12.E.4	Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).
9.3.12.K1.3	Apply appropriate troubleshooting techniques in resolving COMPUTER hardware software and configuration problems.
9.3.IT-SUP.7	Employ system installation and maintenance skills to setup and maintain an information system
9.3.IT.12	Demonstrate knowledge of the hardware components associated with information systems.

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> • Group Work • Notebook • Worksheets • Practical Factors 	<ul style="list-style-type: none"> • Vocabulary Quiz • Project rubric • Weekly Participation rubric • Summative Assessment
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> • Text book/Google Classroom • Various laptops and components 	<ul style="list-style-type: none"> • Internet

Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology 	
Enduring Understanding	Essential Questions
<ul style="list-style-type: none"> ● Understanding the basic workings of a laptop computer. ● Understand how laptops work. ● What the advantages/disadvantages of laptop devices versus a desktop ● Understand the common preventive maintenance techniques to maximize laptop efficiency. 	<ul style="list-style-type: none"> ● What are the workings of a laptop? ● How do laptops work? ● What are the advantages/disadvantages of laptop devices versus a desktop? ● What are the common preventive maintenance techniques to maximize laptop efficiency?

Information Technology	Unit 7	Marking Period 3
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Focus Indicator	
Network Fundamentals	
8.2.12.E.1	Demonstrate an understanding of the problem-solving capacity of computers in our world.
9.3.IT-SUP.5	Demonstrate the use of networking concepts to develop a network
9.3.IT-SUP.7	Employ system installation and maintenance skills to setup and maintain an information system
9.3.IT-SUP.8	Employ system administration and control skills to monitor the performance of an information system.

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Project rubric ● Weekly Participation rubric ● Summative Assessment

Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various parts and computers 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology 	
Enduring Understanding	Essential Questions
<ul style="list-style-type: none"> ● Identify basic network concepts and technologies. ● Identify network physical components and have a basic idea of how they work. ● Describe the different topologies and architectures of the various networks. ● Increase information technology vocabulary 	<ul style="list-style-type: none"> ● What are the basic network concepts and technologies? ● How do the network physical components work? ● What are the different topologies and architectures of the various networks?

Information Technology		Unit 8	Marking Period 3
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Focus Indicator	
Printers and Scanner Fundamentals	
8.2.12.E.1	Demonstrate an understanding of the problem-solving capacity of computers in our world.
9.3.12.K1.3	Apply appropriate troubleshooting techniques in resolving COMPUTER hardware software and configuration problems.
9.3.IT-SUP.1	Provide technology support to maintain service
9.3.IT.12	Demonstrate knowledge of the hardware components associated with information systems.

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Project rubric ● Weekly Participation rubric ● Summative Assessment
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various scanners/printers 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology 	
Enduring Understanding	Essential Questions
<ul style="list-style-type: none"> ● Identify the different types of printers and scanners. ● Describe the advantages/disadvantages of the various printers and scanners. ● Demonstrate how a dot matrix, inkjet, and laser printer work and describe the advantages/disadvantages of each. ● Demonstrate the basic routine preventive maintenance used for printers/scanners. 	<ul style="list-style-type: none"> ● What are the different types of printers and scanners? ● What are the advantages/disadvantages of the various printers and scanners? ● What is the basic routine preventive maintenance used for printers/scanners? Why is it important?

Information Technology	Unit 9	Marking Period 3
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Focus Indicator

Security Fundamentals	
8.2.12.E.1	Demonstrate an understanding of the problem-solving capacity of computers in our world.
8.2.12.C.3	Analyze a product or system for factors such as safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, and human factors engineering (ergonomics)
9.3.IT-SUP.5	Demonstrate the use of networking concepts to develop a network
9.3.IT-SUP.9	Employ technical writing and documentation skills in support of an information system.

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Project rubric ● Weekly Participation rubric ● Summative Assessment
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology 	
Enduring Understanding	Essential Questions
<p>Demonstrate an understanding of the importance of network security.</p> <p>Identify the basic security threats and how-to procedures to deal with them effectively.</p> <p>Understand how best to combat security issues and identify the tools (software and hardware) used.</p>	<ul style="list-style-type: none"> ● Why is network security important? ● What are the basic security threats and do you deal with them? ● What tools are available (software and hardware) to combat security breaches and threats?

Information Technology		Unit 10	Marking Period 4
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Focus Indicator	
Advanced Troubleshooting	
9.3.IT-SUP.2	Manage operating systems and software applications, including maintenance of upgrades, patches and service packs.
9.3.IT-SUP.3	Apply appropriate troubleshooting techniques in resolving computer hardware, software and configuration problems.
9.3.IT-SUP.9	Employ technical writing and documentation skills in support of an information system.
9.3.IT-SUP.10	Apply quality assurance processes to maximize information system operation

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Vocabulary Quiz ● Project rubric ● Weekly Participation rubric ● Summative Assessment
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various computers, laptops, printers, scanners, etc... 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology 	
Enduring Understanding	Essential Questions

Identify the process of advanced troubleshooting of Operating Systems, Networks, Laptops, Printers, and Security	<ul style="list-style-type: none"> What are steps of advanced troubleshooting for Operating Systems, Networks, Laptops, Printers, and Security?
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Information Technology		Unit 11	Marking Period 4
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Focus Indicator	
The IT Professional	
9.3.12.K.6	Describe trends in emerging and evolving COMPUTER technologies and their influence on IT practices.
9.3.IT-SUP.9	Employ technical writing and documentation skills in support of an information system.
9.3.IT-SUP.10	Apply quality assurance processes to maximize information system operation

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> Group Work Notebook Worksheets Practical Factors 	<ul style="list-style-type: none"> Vocabulary Quiz Project rubric Weekly Participation rubric Summative Assessment
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> Text book/Google Classroom 	<ul style="list-style-type: none"> Internet

Cross-Curricular Connections	
<ul style="list-style-type: none"> Informational reading in information technology 	
Enduring Understanding	Essential Questions
<p>The importance of communication skills and customer relations.</p> <p>The methods in gaining information from the client in order to troubleshoot.</p> <p>The knowledge and understanding of the ethics and legal aspects of working in the computer field.</p>	<ul style="list-style-type: none"> Why are communication and customer relations important? What questions would you need to ask a client to resolve an issue? What are the ethical and legal obligations I the computer field?

Information Technology		Unit 12	Marking Period 4
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Focus Indicator	
Mobile Device Fundamentals	
9.3.IT-SUP.2	Manage operating systems and software applications, including maintenance of upgrades, patches and service packs.
9.3.IT-SUP.3	Apply appropriate troubleshooting techniques in resolving computer hardware, software and configuration problems
9.3.IT-SUP.6	Evaluate the effectiveness of an information system
9.3.IT-SUP.7	Employ system installation and maintenance skills to setup and maintain an information system
9.3.IT-SUP.10	Apply quality assurance processes to maximize information system operation

Formative Assessments	Summative Assessments
<ul style="list-style-type: none"> ● Group Work ● Notebook ● Worksheets ● Practical Factors 	<ul style="list-style-type: none"> ● Project rubric ● Weekly Participation rubric ● Summative Assessment ● Final Exam
Suggested Primary Resources	Suggested Supplemental Resources
<ul style="list-style-type: none"> ● Text book/Google Classroom ● Various mobile devices and mobile phones 	<ul style="list-style-type: none"> ● Internet
Cross-Curricular Connections	
<ul style="list-style-type: none"> ● Informational reading in information technology 	
Enduring Understanding	Essential Questions
<ul style="list-style-type: none"> ● The basic workings of mobile devices ● The preventive maintenance techniques to maximize portable device efficiency. ● The methods to configure the various portable devices. 	<ul style="list-style-type: none"> ● How are portable devices constructed? ● What are the preventive maintenance techniques to maximize portable device efficiency? ● How do you configure portable devices?