COURSE: Computer Literacy	**GRADE(S): 9 -12**
UNIT: Understanding Computers	**TIMEFRAME: 5 class periods, 45 day class**

NBEA STANDARDS: Information Technology

I. Impact on Society
Achievement Standard: Assess the impact of information technology in a global society
II. Hardware
Achievement Standard: Describe current and emerging hardware; configure, install, and upgrade hardware; diagnose problems and repair hardware
III. Operating Systems and Utilities
Achievement Standard: Identify, evaluate, select, install, use, upgrade, customize, and diagnose and solve problems with various types of operating systems and utilities
XVIII. Information Technology Careers
Achievement Standard: Explore positions and career paths in information technology

ISTE Standard 6. Technology operations and concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.
a. Understand and use technology systems
d. Transfer current knowledge to learning of new technologies

STATE STANDARDS:

Standard Area - 15.4: Computer and Information Technologies
15.4.12.C: Develop criteria for analyzing hardware options to meet defined needs
15.4.12.D: Evaluate emerging input technologies
15.4.12.E: Analyze the different operating systems and recommend the appropriate system for specific user needs
15.4.12.M: Evaluate the impact of emerging technologies on various career paths and provide examples of industry certifications within the field

UNIT OBJECTIVES:

1. Hardware Components

By the end of this course, students will:

- Identify and describe the function of hardware components (mouse, keyboard, CPU, monitor);
- Classify hardware components as input, output, storage, or processing
- Use correct terminology to describe computer hardware *(e.g., USB)*, speed measurements *(e.g., megahertz)*, and size *(e.g., megabytes*)
- Describe the functions of the internal components of a computer *(e.g., CPU, RAM, ROM, cache, hard drive, motherboard, power supply, video card, sound card)*
- Describe the functions of common computer peripheral devices *(e.g., printer, monitor, scanner, keyboard, mouse, speakers, USB flash drive)*
- Assess user computing needs and select appropriate hardware components for different situations *(e.g., a student on a fixed budget, a home business user, a gaming enthusiast, a photographer, a home video enthusiast, a distance education user, a human resources manager, an accountant)*

2. Software Products

By the end of this course, students will:

- Explain the difference between software used for applications *(e.g., word processor and spreadsheet)*, programming *(Java, C++)*, and systems *(e.g., operating system tools such as a registry editor and a defragmenting tool)*
- Assess user computing needs and select appropriate software for different situations *(e.g., a student on a fixed budget, a home business user, a gaming enthusiast, a photographer, a home video enthusiast, a distance education user, a human resources manager, an accountant)*

- Identify specific examples of software applications and application suites
- Explain how the components of software application suites interact

3. Operating Systems

By the end of this course, students will:

- Describe operating system functions that meet various user needs (e.g., running applications, organizing files, managing users, configuring peripherals)
- Identify operating systems used by a variety of computing devices (e.g. mainframe computers, desktop and laptop computers, tables and cell phones)
- Describe the features and limitations of various operating systems

4. Home Computer Networking

By the end of this course, students will:

- Identify various networking applications and protocols (e.g., VoIP, streaming media, FTP, email, instant messaging)
- Describe the features and functions of wired and wireless networking hardware (e.g., NICs, routers, hubs, cables, modems)
- Demonstrate an understanding of various methods for sharing network resources (e.g., shared file access, shared printer access, Internet access)

3. Maintenance and Security

By the end of this course, students will:

- Describe different types of malware *(e.g., viruses, Trojan horses, worms, spyware, adware, malevolent* macros*)* and common signs of an intrusion, and explain how to prevent malware attacks
- Explain the importance of maintaining software updates *(e.g., operating system updates, application* software *updates, virus definitions)* to increase computer security and maintain hardware and software compatibility
- Explain the importance of preventive maintenance *(e.g., defragmenting a hard drive, deleting unused software and data files)* to manage computer performance

ACTIVITIES:

- Practice: Worksheets and online activities
- Review: Terms, concepts and skills
- Application: a variety of practice and simulations
- Participation; individual practice and whole class discussion

RESOURCES:

- Online and offline articles
  - GCF Learning Tutorials

http://www.gcflearnfree.org/computerbasics

ASSESSMENTS :

- Teacher observation
- Daily classwork (worksheets/written reports)
- Quizzes / End-of-Unit Test

REMEDIATION:

- Assistance – Teacher/peer and Web-based tutorials
- Adjustment – length/breadth
- Alternative – assignments/projects

ENRICHMENT:

- Research new technologies
- Research technology related careers
- Research and report on technology use in everyday life through the past 100 years

COURSE: Computer Literacy	**GRADE(S): 9 -12**
UNIT: Basic Computer Skills	**TIMEFRAME: 5 class periods, 45 day class**

NBEA STANDARDS: Information Technology

IV. Input Technologies
Achievement Standard: Use various input technologies to enter and manipulate information appropriately.

ISTE Standard 6. Technology operations and concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.
a. Understand and use technology systems

STATE STANDARDS:	**UNIT OBJECTIVES:**
Standard Area - 15.4: Computer and Information Technologies 15.4.12.A: Apply the creative and productive use of emerging technologies for educational and personal success.	1. Identify the main components of the computer user interface 2. Identify the purpose of the commands on menu bars and ribbons and in dialog boxes 3. Use general keyboard shortcuts to perform common tasks (e.g., cut, copy, paste, print, print screen, create shortcuts, pin files and programs) 4. Print to a file (e.g. .pdf document) 5. Develop proficient use of a computer mouse and/or touchpad 6. Understand what a file 7. Differentiate between types of files (.docx, .jpg, ,gif) 8. Develop file management skills: create, move, delete and rename files and folders 9. Differentiate between types of characters (letters, number and symbols) 10. Enter and edit characters in a file 11. Compare the user interfaces on various types of computing devices (desktop, laptop, tablet, cell phone, GPS)
ACTIVITIES: • Practice: Worksheets and online activities • Review: Terms, concepts and skills • Application: a variety of practice and simulations • Participation; whole discussion **RESOURCES:** • Various Internet resources	**ASSESSMENTS :** • Teacher observation • Daily classwork (worksheets/written reports) • Quizzes / End-of-Unit Test **REMEDIATION:** • Assistance – Teacher/peer and Web-based tutorials • Adjustment – length/breadth • Alternative – assignments/projects **ENRICHMENT:** • Create a keyboard chart that differentiates between types of keys • Research and report on different types of

	software and its uses • Research software technologies for those with special needs

COURSE: Computer Literacy	GRADE(S): 9 – 12
UNIT: Word Processing Basics	TIMEFRAME: 10 class periods, 45 day class

NBEA STANDARDS: Information Technology

IV. Input Technologies
Achievement Standard: Use various input technologies to enter and manipulate information appropriately.
V. Productivity Software
Achievement Standard: Identify, evaluate, select, install, use, upgrade, and customize productivity software; diagnose and solve software problems.
VI. Interactive Media
Achievement Standard: Use multimedia software to create media rich projects.

ISTE Standard 6. Technology operations and concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.

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

STATE STANDARDS:

Standard Area - 15.4: Computer and Information Technologies

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

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

UNIT OBJECTIVES:

1. Identify the components and common uses of a word processing program
2. Perform basic word processing tasks
3. Identify and demonstrate use of formatting icons and dialog boxes in a word processing program
4. Edit and format text (size, color, bullets and numbering, borders and shading)
5. Insert and manipulate tables and images
6. Work with language tools i.e. spellcheck
7. Identify online resources for formatting research papers (MLA, APA, etc.)
8. Create a list of resources using MLA formatting
9. Compare the user interface and formatting options offered to online and offline word processing users on various platforms (desktop/laptop computer, tablet, cell phone)
10. Create and work with shared documents using Google Docs or a similar tool

ACTIVITIES:

- Practice: worksheets and online activities
- Participation; whole class discussion
- Review: terms, concepts and skills; small group and whole class discussions
- Application: create a variety of word processing projects used in today's world

- Exercise 1: Typing and Editing
- Exercise 2: Editing and Formatting
- Exercise 3: Spell Check
- Exercise 4: Spell Check | Teacher notes

ASSESSMENTS :

- Teacher observation
- Daily classwork and projects
- Quizzes

REMEDIATION:

- Assistance – Teacher/peer and Web-based tutorials
- Adjustment – length/breadth
- Alternative – assignments/projects

- Exercise 5: Spell Check
- Exercise 6: Editing and Spell Check (Microsoft Word format) | Practice (Microsoft Word format)
- Exercise 7: Editing and Formatting | Formatting Practice (Microsoft Word format)
- Exercise 8: Tables
- Exercise 9: Columns and Indenting
- Exercise 10: Bullets and Clip Art
- Copying and Pasting Images
- Microsoft Word: Using HELP 98 2000 Version

RESOURCES:

- Google Docs
- Open Office
- Owl Writing Lab
- GCF Online Tutorials
- Teacher Guide Graphics 2
- Font attributes (.zip)
- Cut and paste (.zip)
- Spacing (.zip)
- Editing (.zip)
- Tables (.zip)

ENRICHMENT:

- Create more advanced documents.
- Create a flyer or poster using the text and page formatting.
- Research and report on how word processing is used in different careers.
- Use advanced word processing features (e.g. hyperlinking, automatic table of contents, custom styles, integrating spreadsheet functions, custom dictionaries)

COURSE: Computer Literacy	GRADE(S): 9 -12
UNIT: Spreadsheet Basics	TIMEFRAME: 9 class periods, 45 day class

NATIONAL STANDARDS:

IV. Input Technologies
Achievement Standard: Use various input technologies to enter and manipulate information appropriately.
V. Productivity Software
Achievement Standard: Identify, evaluate, select, install, use, upgrade, and customize productivity software; diagnose and solve software problems.
VI. Interactive Media
Achievement Standard: Use multimedia software to create media rich projects.

ISTE Standard 6. Technology operations and concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.

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

STATE STANDARDS:

Standard Area - 15.4: Computer and Information Technologies

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

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

UNIT OBJECTIVES:

1. Identify the components and common uses of a spreadsheet program
2. Perform spreadsheet tasks
3. Identify and demonstrate use of formatting icons and dialog boxes in a spreadsheet program
4. Differentiate between and develop formulas and functions in a spreadsheet
5. Edit and format text in worksheets
6. Generate tables and charts from spreadsheet data
7. Work with language tools i.e. spellcheck
8. Analyze data using spreadsheet technologies
9. Compare the user interface and formatting options offered online and offline to spreadsheet users on various platforms (desktop/laptop computer, tablet, cell phone)
10. Create and edit with a shared spreadsheet using Google Docs or a similar tool

ACTIVITIES:

- Practice: worksheets and online activities
- Participation; whole class discussion
- Review: terms, concepts and skills; small group and whole class discussions
- Application: create a variety of spreadsheet that would be used in today's world

RESOURCES:

- Google Docs

ASSESSMENTS :

- Teacher observation
- Daily classwork and projects
- Quizzes

REMEDIATION:

- Assistance – Teacher/peer and Web-based tutorials
- Adjustment – length/breadth
- Alternative – assignments/projects

• Open Office • GCF Learning Tutorials • Explanation of Excel Cursors • Exercise 1, Basic: Entering Information • Exercise 1: Entering Information • Exercise 2, Basic: Making Lists • Exercise 2: Making Lists • Exercise 3, Basic: Budgets • Exercise 4: Adding Totals • Exercise 5: Making Charts • Exercise 6: Budgets • Execise 7: Making Charts	**ENRICHMENT:** • Create more advanced documents • Research and report on how spreadsheet applications are used in different careers • Use advanced spreadsheet features (e.g. absolute cell reference, hyperlinking, custom styles, creating and editing templates, performing what-if analysis)

COURSE: Computer Literacy	**GRADE(S): 9 -12**
UNIT: Presentation Software Basics	**TIMEFRAME: 9 class periods, 45 day class**

NATIONAL STANDARDS: Information Technology

IV. Input Technologies
Achievement Standard: Use various input technologies to enter and manipulate information appropriately.
V. Productivity Software
Achievement Standard: Identify, evaluate, select, install, use, upgrade, and customize productivity software; diagnose and solve software problems.
VI. Interactive Media
Achievement Standard: Use multimedia software to create media rich projects.

ISTE Standards
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

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

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

STATE STANDARDS:	**UNIT OBJECTIVES:**
Standard Area - 15.4: Computer and Information Technologies 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. 15.4.12.G: Create an advanced digital project using sophisticated design and appropriate software/applications.	1. Identify the components and common uses of a presentation program 2. Create basic presentations using presentation software 3. Identify and demonstrate use of formatting icons and dialog boxes in a presentation program 4. Edit, format, and animate text, SmartArt and images 5. Use the outline view and slide master to make quick presentations 6. Insert and manipulate tables and images 7. Work with language tools i.e. spellcheck 8. Develop oral presentation skills 9. Compare the user interface and formatting options offered online and offline to presentation software users on various platforms (desktop/laptop computer, tablet, cell phone)
ACTIVITIES:	**ASSESSMENTS :**

• Practice: worksheets and online activities • Participation; whole class discussion • Review: terms, concepts and skills; small group and whole class discussions • Application: create a variety of presentations relevant to today's world **RESOURCES:** • Google Docs • Open Office • Prezi • YouTube • GCF Learning Tutorials • PowerPoint for 2000 • PowerPoint for XP • Sample presentation (PPT)	• Teacher observation • Daily classwork and projects • Quizzes **REMEDIATION:** • Assistance – Teacher/peer and Web-based tutorials • Adjustment – length/breadth • Alternative – assignments/projects **ENRICHMENT:** • Create more advanced documents • Research and report on how spreadsheet applications are used in different careers • Use advanced presentation software features (e.g. hyperlinking, action buttons, inserting charts and videos, custom styles • Experiment with a variety of online presentation tools (e.g. Prezi, Youtube)

COURSE: Computer Literacy	GRADE(S): 9 – 12
UNIT: Using the Internet	TIMEFRAME: 7 class periods, 45 day class

NBEA STANDARDS: Information Technology

I. Impact on Society
Achievement Standard: Assess the impact of information technology in a global society.
IV. Input Technologies
Achievement Standard: Use various input technologies to enter and manipulate information appropriately.
V. Productivity Software
Achievement Standard: Identify, evaluate, select, install, use, upgrade, and customize productivity software; diagnose and solve software problems.
VI. Interactive Media
Achievement Standard: Use multimedia software to create media rich projects.
VIII. Information Retrieval and Synthesis
Achievement Standard: Gather, evaluate, use, cite, and disseminate information from technology sources.
XV. Ethical and Legal Issues
Achievement Standard: Describe, analyze, develop, and follow policies for managing ethical and legal issues in organizations and in a technology-based society

ISTE Standard
3. Research and information fluency
- 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

6. Technology operations and concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.
- a. Understand and use technology systems
- b. Select and use applications effectively and productively
- c. Troubleshoot systems and applications
- d. Transfer current knowledge to learning of new technologies

STATE STANDARDS:	UNIT OBJECTIVES:
Standard Area - 15.4: Computer and Information Technologies 15.4.12.A: Apply the creative and productive use of emerging technologies for educational and personal success. 15.4.12.B: Evaluate the impact of social, legal, ethical, and safe behaviors on digital citizenship.	1. Discuss the history of Internet use and its impact on society 2. Develop an understanding of the purpose of copyright and how it applies to intellectual property 3. Define the concepts of digital citizenship, netiquette, and cyber bullying 4. Define software piracy and recognize the impact of copyright infringement 5. Develop safe and responsible practices for Internet use (e.g. passwords, firewalls, and spam) 6. Research and use basic and advanced search techniques

ACTIVITIES:

- Practice: worksheets and online activities
- Participation; whole class discussion
- Review: terms, concepts and skills; small group and whole class discussions
- Application: complete a variety of online tasks

    - Exercise 1
    - Exercise 2
    - Exercise 3
    - Exercise 4
    - Internet job search
    - Online dictionaries and encyclopedias
    - Internet dictionary
    - Metro Transit website
    - Publish your own recipe

RESOURCES:

Netsmartz.org
http://www.netsmartz.org/Resources

Common Sense Media
https://www.commonsensemedia.org/educators/curriculum

Google In Education
https://www.google.com/edu/teachers/youtube/curric/index.html

On Guard Online.gov
http://www.onguardonline.gov/

- GCF Online Tutorials
- What is the internet? (PowerPoint)
- Go to a website on the internet
- Internet directions: Mapquest

ASSESSMENTS :

- Teacher observation
- Daily classwork and projects
- Quizzes
- End of Unit Test

REMEDIATION:

- Assistance – Teacher/peer and Web-based tutorials
- Adjustment – length/breadth
- Alternative – assignments/projects

ENRICHMENT:

- Research and report on current events and past events were Internet use played a major role
- Understand how encryption works and when it is used
- Identify and explain the purpose of an internet firewall
- Set up a network hotspot using a mobile device