STRANDS AND STANDARDS
DIGITAL LITERACY

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CTE®

Course Description

This course allows students to develop basic computing fundamentals, improve digital communications, identify the importance of protecting individual data, apply key applications, and maintain positive digital wellness. Students will have opportunities to use digital devices to apply skills to accomplish tasks more efficiently using creativity, critical thinking, productivity, and collaboration in the classroom and day-to-day life. Students will use this foundational knowledge as a connection to future educational pathways.

Effective School Year	2023-2024
Intended Grade Level	7 or 8
Core Code	32.02.00.00.170
License Area of Concentration	Elementary and/or Secondary Associate Level License
	Elementary and/or Secondary Professional Level License
Required Endorsement(s)	
Endorsement 1	Business, Finance, and Marketing (CTE/General)
Endorsement 2	Business, Finance and Marketing Basics
Endorsement 3	Business, Finance and Marketing Info Management L1
Endorsement 4	Business and Marketing Info Management L2
Endorsement 5	College and Career Awareness & Digital Literacy
Endorsement 6	Cybersecurity
Endorsement 7	Information Technological Systems
Endorsement 8	Intro to Computer Science
Endorsement 9	Programming and Software Development
Endorsement 10	Web Development

STRAND 1

(Keyboarding Efficiency) Students will enhance keyboarding skills. This strand will be incorporated throughout the course and scaffolded for student ability depending on prior knowledge.

Standard 1

Students will enhance and demonstrate proper key by touch skills and keyboarding techniques.
- Sit up straight.
- Feet flat on the floor.
- Body centered with the "G" and "H" keys.
- Fingers curved on home row (A, S, D, F, J, K, L, ;).
- Wrists straight and elbows naturally at sides.
- Correct fingers used for keystrokes.
- Key by touch (eyes on copy or screen, not on keys).
- Key with smooth rhythm.

Standard 2

Students will learn and demonstrate the benefits of proper touch typing and keyboarding techniques.
- Improve efficiency, accuracy, and productivity using the keyboard.
- Reduces repetitive stress injuries (e.g. carpal tunnel, neck strain, back pain).

Strand 1 Performance Skill

Students will demonstrate individual key-by-touch improvement proficiency, accuracy, and technique.

STRAND 2

(Information Processing Cycle) Students will identify a computer as a device that utilizes hardware and software to accept input, process data, store data, and produce output.

Standard 1

Identify computer hardware in the information processing cycle.
- **Hardware** is the physical components that make up a computing system, computer, or computing device.
- Identify primary hardware components of a computer.
  - Input
    - Touchscreen
    - Mouse/Touchpad
    - Keyboard
  - Processing
    - Motherboard
    - Power supply
    - Central Processing Unit (CPU)
    - Graphic Processing Unit (GPU)
    - Main Memory (RAM, ROM)
  - Storage
    - Hard Drive
    - Solid State Drive (SSD)
  - Output
    - Monitor/Screen/Touchscreen
    - Speakers

- **Peripheral devices** are connected to a computer to expand the functionality of the computer.
  - Identify port connectors for peripheral devices.
  - Identify secondary peripheral devices.
    - Printer
    - Scanner
    - Camera
    - Stylus
    - Headphones
    - Microphone
    - Game controller
    - Virtual Reality (VR) headsets
  - Explain how a peripheral device can have multiple input and output functions (e.g. touchscreen)

Standard 2

Explain the role of software for a computing system.
- **Software** is a program that runs a set of instructions on a computing device.
- Identify the two types of software for a computing system.
  - **System software** is software that controls the communication between the hardware and application software of a computer.
  - **Application software** is software developed to help the user perform specific tasks.
- Compare cloud-based applications vs. computing-based software.
  - Where is the data stored?
  - What are the requirements to access software?
  - Who has access to the data?
  - What are the pros and cons?
- Identify the primary operating system of a computing device.
  - **Operating system** is software that manages the computer's basic functions such as scheduling tasks, executing applications, and controlling peripherals.
  - Identify primary operating systems as:
    - Windows
    - Mac OS
    - Android
    - iOS
    - Linux
- Identify common application software for a computing device.
  - Business software (e.g. word processing, spreadsheets, databases, presentation, calendaring)
  - Communication software (e.g. social media, email, video conference, instant messaging)
  - Entertainment software (e.g. virtual reality, streaming, gaming)
  - Multimedia software (e.g. photo, image, video, audio, speech to text, artificial intelligence (AI))
  - Education software (e.g. learning management system (LMS), gradebook, e- books)
  - Accessibility software (e.g. Voice-To-Text, screen reader, screen magnifiers, voice recognition)

Standard 3

Explain how input devices function in the information processing cycle.
- **Input device** is hardware equipment used to transfer data to a computing system for processing.
- Explain the function of primary input devices.
  - Keyboard
  - Mouse/Touchpad
  - Touchscreen

- Microphone
- Camera
- Game controller

Standard 4

Define processing and explain how processing functions in the information processing cycle.

- **Processing** is interpreting input and producing output.
- Explain the main processing device in a computer system.
  - **Central Processing Unit (CPU)** is the master chip that controls all other aspects of the computer.
- Describe the relationship of an algorithm, loop, and conditional in computer processing.
  - **Algorithm** is a set of instructions to complete a task.
    - The CPU uses the algorithm as an input to produce output.
  - **Loop** is a programming structure that repeats a set of instructions as long as a specific condition is true.
    - The CPU uses the loop as an input to repeat the task to output data until the specific condition is true.
  - **Conditional** is a programming structure that performs different computations or actions depending on whether a condition evaluates to true or false (Boolean condition).
    - The CPU uses the conditional as an input to continue to evaluate whether or not to send output data.

Standard 5

Explain how memory and storage devices function in the information processing cycle.

- **Memory** is temporarily stored data for immediate use in a computer system.
- Identify two types of memory for a computer system.
  - **Random Access Memory (RAM)** is used by the operating system and application software while the computer is running.
  - **Read Only Memory (ROM)** is preloaded instructions for booting up the computer.
- **Storage** is a place where data can be held and retrieved at a later time.
- Identify the benefits of using different types of storage.
  - **Hard drive** is an internal storage device that stores data.
    - Hard Disk Drive (HDD)
    - Solid State Drive (SSD)
- **External hard drive** is a portable storage device that stores data.
- **Flash drive** is a small, portable storage device that uses electrical rewritable storage (flash) to store or transfer data (e.g. USB, thumb drive, memory stick, jump drive).
- **Cloud storage** is storage where data is transmitted and stored on remote storage systems where it is maintained, managed, and backed up and made available to users over a network (e.g. Google Drive, iCloud, Dropbox, OneDrive).

Standard 6

Explain how output devices function in the information processing cycle.

- **Output** is information processed from a computing system and received by the user.
- **Output device** is hardware equipment used to transfer data out from a computer system.
- Explain the function of primary output devices.
  - Monitor/Screen/Touchscreen
  - Printer
  - Projector
  - Speakers

- Headphones

Standard 7

Identify common troubleshooting techniques.

- **Troubleshooting i**s the systematic approach to addressing a problem with a computing device through the process of trial and error.
- Identify common troubleshooting steps.
  - Do not panic.
  - Check all connections and power supply.
  - Read error messages.
  - Look for software updates.
  - Restart the computing device.

Strand 2 Performance Skill

Students will research, evaluate, and support the selection of purchasing a computing device based on personal interests and needs.

- Students will identify and explain the benefits of the selected peripheral devices, hardware, software, memory, and storage within the computing device.

STRAND 3

(Digital Communication) Students will use digital tools for the purpose of learning through connecting to the Internet, navigating websites, and sending and receiving communications digitally.

Standard 1

Identify the components of the Internet.

- **Network** is a group of two or more digital devices connected to share information.
- **Internet** is a global network.
- **Wireless (Wi-Fi)** is wireless technology used to connect digital devices to the Internet.
- **Uniform resource locator (URL)** is an address for a worldwide webpage.
- **Internet protocol (IP) address** is a unique set of numbers separated by periods that identifies each digital device using the Internet to communicate.
- Internet browser is an application used to access and view websites.
- **Search engine** is a program that searches for and identifies items in a database using keywords to find websites for information on the Internet.
- **Server** is a computer or computer program which manages access to databases of information in a network.

Standard 2

Explain how to connect to and navigate the Internet.

- Explain the role of an Internet Service Provider (ISP).
  - **Internet service provider (ISP)** is a company that provides subscribers with access to the Internet.
  - **Bandwidth** is the amount of information that can travel on an Internet connection in a certain timeframe.
- Compare different types of Internet connections by bandwidth, speed, and accessibility.
  - Cellular
  - Digital Subscriber Line (DSL)
  - Fiber optic
  - Satellite

- Identify and explain the function of common website navigation components.
  - Menu
    - Chrome app launcher (waffle)

    - Three dots (kabob)

    - Three lines (hamburger)

  - Home page
  - Search bar
  - Hyperlinks

Standard 3

Identify a variety of online communication tools and the primary features of email.

- Identify different types of communication programs.
  - **Email** is messages distributed by email application software from one digital device to another using a network (e.g. Gmail, Outlook).
  - **Instant messaging** is online chat that offers real-time text communication over the Internet (e.g. Google Chat, Microsoft Teams)
  - **Video conference** is a conference where participants, in different locations, are able to communicate with each other in sound and vision (e.g. Google Meet, Microsoft Teams, FaceTime, Zoom)
  - **Web authoring** is a category of software that allows the user to develop a website using visual tools based on code (e.g. Weebly, Google Sites, Wix, Adobe Express, WordPress).
  - **Social networking** is the use of internet based social media sites to stay connected with others.
- Identify the primary feature of an email.
  - **Subject** is an informative, catchy, and brief line of text seen when the email reaches the recipient's inbox.
  - **CC** is a courtesy copy (previously known as carbon copy) including one or more recipients when a message is intended for one person but is relevant to other people as well.
  - **BCC** is a blind courtesy copy (previously known as blind carbon copy) to let others see an email without the main recipient knowing.
    - Explain a variety of scenarios where CC and BCC would be used in an email.
  - **Attachment** is a file sent with an email message (i.e. image, video, text document). Often represented by a paperclip icon.
  - **Signature** is personalized text automatically included at the bottom of an email. A signature can include name, address, phone number, website, and other business information.
  - **Reply** is the response to an email that goes to a single person (the person who sent the original email or the person who sent the last message in the email thread).

- **Reply all** is the response to an email that goes to everyone who was included in the email, including CC.
  - Explain a variety of scenarios where reply and reply all would be used in an email.
- **Forward** is the operation of re-sending an email message delivered to one email address to one or more different email addresses.
- Identify the primary email folders.
  - Inbox
  - Deleted/Trash
  - SPAM/Junk Mail

Strand 3 Performance Skill
- Students will demonstrate how to send emails for a variety of purposes and audiences.
- Students will describe how digital communication tools can be used to accomplish tasks for a specific purpose.

STRAND 4
(Digital Citizenship and Wellness) Students recognize the rights, responsibilities, and risks of learning, and working in an interconnected digital world, and model behaviors that are safe, legal, and ethical while balancing in-person responsibilities and relationships.

Standard 1
Define digital citizenship and digital footprint.
- **Digital citizenship** is norms of appropriate, responsible, and healthy behavior related to technology use, including digital literacy, ethics, etiquette, and security. (Utah Code 63C-22-102)
  - Explain the personal responsibilities of being ethical in a digital world.
- **Digital footprint** is the data collected about a particular person and their direct or proximal interactions with digital devices whether online or offline.
  - Discuss the present and future impacts of a digital footprint.

Standard 2
Demonstrate knowledge of online safety, digital security, and online privacy.
- **Online safety** is being aware of online risks and maximizing the user's personal safety.
- Identify guidelines to protect users from various types of online predators.
  - Avoid using suggestive screen names or photos.
  - Be aware of excessive attention.
  - Do not talk to anyone that wants to get too personal.
  - Keep in mind that people are not always who they say they are.
  - Never arrange to meet with someone in person you only know online.
  - Tell a trusted adult if you encounter a problem.
- Identify threats in the digital world.
  - **Denial of service** attacks is an attack to shut down a computer device or network by flooding it with traffic to make it inaccessible to the intended users.
  - **Hackers** are people or programs that uses computers to gain unauthorized access to data.
  - **Online privacy** is the protection of private data and communication.
    - **Location tracking** is the tracking of a digital device on where it goes and how long it stays there.
    - **Cookies** is data stored on your browser to track online behavior.
    - **Device fingerprinting** is using your browser's settings and history to track your activity.
  - **Malware** is software that is specifically designed to disrupt, damage, or gain unauthorized access to

a digital device.
- **Ransomware** is a type of malicious software that is used to block access to a digital device until a sum of money is paid.
- **Spyware** is software that enables a user to obtain private information about another's computer activity by transmitting data secretly from their hard drive.
- **Trojan Horse** is a malicious code that looks legitimate and takes control of your computer to damage, disrupt, and destroy your data.
- Identify indicators of safe online transactions.
  - URL lock symbol (https)
  - Credit card/payment services (e.g. PayPal, Venmo)
  - Reputable retailers
  - Virtual Private Network (VPN)
- Identify threats to email and online communication.
  - Catfishing
  - Online scams
  - Hacking
  - Phishing attacks
  - Unknown links and QR codes
- Explain the importance of digital security measures as tools used to secure identity and data online.
  - Antivirus protection software
  - Password/passphrase/biometric login
  - Two-factor authentication
  - Firewalls
  - Secure website (https)
  - Updates
  - Virtual Private Network (VPN)
- Identify components of credible online content.
  - Domain name (name of the website)
  - Top Level Domain (e.g. .org, .com, .net, .edu, .gov)
  - Author
  - Date
  - Verified sources
  - Lateral reading

Standard 3

Define intellectual property and the legal and responsible use of technology.
- **Intellectual property** as a creative work or idea for which an individual has ownership rights.
- Identify common intellectual property protections.
  - **Copyright** as the exclusive legal right given to the creator of works printed, posted, published, filmed, or recorded.
  - **Creative commons** as licenses that allow for the distribution of copyrighted works when the creator wants to give other people the right to share, use, or build upon what they have created.
  - **Public domain** as intellectual property that is available for public use.
- Identify intellectual property violations.
  - **Plagiarism** as the practice of taking someone else's intellectual property and using it as your own (e.g. copy/paste, images).
  - **Piracy** is unauthorized use of copyrighted materials (e.g. music, video, images)
- Discuss the responsible use of AI tools in the creation of content.

- Ethical and legal responsibilities and safety considerations of being online:
  - Recognize suitable content
  - Use content filters
  - Discern what can make websites, digital apps, or platforms unsafe (e.g. pop-up ads, surveys, cookies, click-bait, discussion forums, algorithm-driven content, soliciting locations, financial or personal identifiable information (PII), age verification requests, instructions on how to exit quickly, bypass firewalls, filters, and parental controls, etc.)
  - Consent laws (e.g. user terms and agreements; required parental notification)

Standard 4

Identify measures to improve personal digital wellness.
- **Digital wellness** is the preventative measures aimed at regulating and improving the healthy use of technology.
- Identify measures to achieve personal digital wellness.
  - Create boundaries (e.g. set limits for certain apps and sites, time limits, and limit notifications)
  - Try single tasking (e.g. to improve focus, try to reduce the number of screens around)
  - Limit the use of digital devices to as little time as possible each day.
- Identify ways to balance personal wellness and technology:
  - Spend time connecting with family and friends offline each day.
  - Exercise regularly and enjoy time outside.
  - Eat healthy food, get plenty of sleep, and don't take tech to bed with you.
- Recognize how algorithms limit viewpoints; determine what content is directed to the user; manipulate online activity in order to reinforce behavior, use and dependency on technology.
- Learn how to discern what is real and what is not (e.g. Artificial Intelligence (AI) generated content (deepfake); filters, photos, and video alterations, etc.)
- **Cyberbullying** is the use of electronic communication to bully a person, typically by sending messages of an intimidating, embarrassing, or threatening nature.
- Identify strategies to deal with cyberbullying.
  - Report cyberbullying to a parent and other trusted adult.
  - Do not respond to and do not forward the cyberbullying messages.
  - Screenshot evidence of cyberbullying.
  - Block the person who is cyberbullying.
- Identify consequences of cyberbullying for the perpetrator and victim.
  - Perpetrator
    - Criminal record
    - Internet or app restrictions
    - Negative digital footprint
    - School discipline
  - Victim
    - Anxiety/Depression
    - Changes in appetite
    - Stress of being in a constant state of fear
    - Change in school performance

Strand 4 Performance Skill

Students will research a digital technology topic and present strategies to implement, improve, or promote positive digital wellness.

STRAND 5

(Digital Tools and Applications) Students will use a variety of digital tools to organize resources, produce creative artifacts, and make meaningful learning experiences for themselves and others.

Standard 1

Demonstrate knowledge of file management.

- Perform basic file management system tasks on a physical computing device or within cloud storage.
- **File management system** is software that manages the storage of data files.
    - **File** is storage of computer recorded data.
        - Create and delete folders.
        - Duplicate files.
- **Folder** is an icon on a computer used to access a directory of file storage.
    - Create and delete folders.
- **Subfolder** is a folder contained within another folder.
    - Create and delete subfolders.
- Identify where deleted content is contained (e.g. recycle bin, trash can, permanently deleted).
- Demonstrate the ability to sort and locate files based on search terms and file type.
- Rename files and save in a new location.

Standard 2

Identify common features and functions of software programs.

- Identify the primary structural elements of the user interface.
    - **Icon** is a small graphical representation of a program file.
    - **Menu** is a list of options or commands to help the user find information or complete a task.
    - **Tabs** are part of a computer window that allows the user to go to different parts of the program or website.
    - **Toolbar** is a set of icons used to perform certain functions.
    - **Window** is a viewing area on a computer.
- Identify the primary interaction elements of the user interface.
    - **Adjustment handle** is a small box that appears on the corners and edges of an element allowing the user to adjust size and shape.
    - **Command button** is an element the user interacts with to tell the digital device to complete a task.
    - **Cursor** is a movable indicator on a computer screen, identifying the point that will be affected by input from the user.
- Identify primary keyboard shortcuts.
    - Cut, Copy, and Paste
    - Undo and Redo
    - Save
    - Print
    - Find
    - Screenshot
- Identify the difference between Save and Save As.
    - **Save** is a command that creates an original file and location or updates changes made in a document while keeping the original file name and location.
    - **Save As** is a command that creates a copy of a current document and allows the user to rename and/or relocate the document.

Standard 3

Demonstrate knowledge of word processing.

- Perform basic tasks by using word processing software.
  - Create a new document
  - Open an existing document
  - Print a document
  - Save a document
- Perform primary page layout tasks.
  - Page orientation
  - Page margins
- Perform basic text formatting tasks.
  - Alignment (Left, Right, Center, Justify)
  - Bold, Italics, and Underline
  - Font (Font color, font highlight, font size)
- Insert and format a table.
  - Insert table
  - Add/delete columns and rows
  - Merge cells/Split cells
  - Border/Shading
- Insert and format an image.
  - Insert image
  - Wrap text
  - Adjust size
- Perform a spelling and grammar check on a document.

Standard 4

Demonstrate knowledge of spreadsheets.
- Identify the primary components of a spreadsheet.
  - **Cell** is the intersection between a row and a column on a spreadsheet.
  - **Active cell** is the selected cell ready to input data.
  - **Row** is the horizontal cells identified by numbers.
  - **Column** is the vertical cells identified by letters.
  - **Fill handle** is a command that fills data in spreadsheet cells based on an existing pattern.
- Create basic mathematical formulas and functions in a spreadsheet.
  - **Cell range** is a group of cells within a row and/or column.
  - **Formula** is any calculation in a spreadsheet.
  - **Function** is a predefined calculation in a spreadsheet.
- Perform the following formulas in a spreadsheet.
  - Addition
  - Subtraction
  - Division
  - Multiplication
- Perform the following functions in a spreadsheet.
  - SUM
  - MIN
  - MAX
  - COUNT
  - AVERAGE
- Insert a column and pie chart using data from a cell range.
  - Include a title.

- Include a legend.
  - **Legend** is the box that contains small samples of each color on the chart as well as a short description of what each color means.

Standard 5
Demonstrate knowledge of presentation programs.
- Apply different layouts to a slide.
  - Title Slide
  - Title and Content
  - Two Content
- Perform basic functions in a presentation.
  - **Animation** is movement of an object or image within a slide.
  - **Transitions** is the motion effect of a slide entering a presentation.
- Add images and/or media content to a presentation.

Standard 6
Demonstrate knowledge of calendaring
- Explain the purpose of an online calendar.
- Create calendar events with key features.
  - Individual or Recurring
  - Location
  - Key information
  - Invitees
- Compare situations between using an individual or recurring event.
- Demonstrate the ability to respond to a calendar event.
  - Accept
  - Reject
  - Maybe

Strand 5 Performance Skill
Students will create a digital file management system that organizes their created artifacts to keep record of learning experiences throughout the course.

STRAND 6
(Digital Media Creation) Students will communicate clearly using a variety of platforms, tools, styles, formats, and digital media appropriate to their goals.

Standard 1
Compare file formats for a variety of digital media types.
- Audio
  - .mp3
  - .wav
- Image
  - .jpeg
  - .gif
  - .heic
  - .png
- Video

- .mp4
- .mov
- .avi

Standard 2

Identify primary functions and features of digital media.

- Audio
  - Record
  - Trim
  - Volume level
- Image
  - Crop
  - Brightness/Contrast
- Video
  - Record
  - Trim
  - Volume level
  - Add audio track

Strand 6 Performance Skill

Students will create a digital media project that demonstrates their ability to communicate clearly using a variety of digital media appropriate to their goals.

Digital Literacy Vocabulary List

Strand 2

hardware
peripheral device
software
system software
application software
operating system
input device
processing
Central Processing Unit (CPU)
algorithm
loop
conditional
memory
Random Access Memory (RAM)
Read Only Memory (ROM)
storage
hard drive
external hard drive
flash drive
cloud storage
output

output device
troubleshooting

Strand 3

Network
Internet
wireless (Wi-Fi)
uniform resource locator (URL)
Internet protocol (IP) address
Internet browser
search engine
server
Internet Service Provider (ISP)
bandwidth
email
instant messaging
video conference
web authoring
subject
CC
BCC
attachment
signature
reply

reply all
forward

Strand 4

digital citizenship
digital footprint
online safety
denial of service attacks
hackers
online privacy
location tracking
cookies
device fingerprinting
malware
ransomware
spyware
Trojan Horse
intellectual property
copyright
creative commons
public domain
plagiarism
piracy
digital wellness

Digital Literacy Vocabulary List (continued)

cyberbullying

Strand 5

file management system
file
folder
subfolder
icon
menu
tabs
toolbar
window
adjustment handle
command button
cursor
Save
Save As
cell
active cell
row
column
fill handle
cell range
formula
function
legend
animation
transitions