3 Networking

Content Area: **Technology**
Course(s):   **Computer Systems & Networking I**
Time Period: **January**
Length: **32 class periods**
Status: **Published**

Unit Overview:

This unit introduces:

- basic concepts associated with the Internet and the World Wide Web.
- Web browsers and gives you practice using search engines, navigating web pages, and configuring basic browser settings.
- computer networking and gives you practice setting up wired network connections.
- networking protocols and standards and gives you practice connecting to a secure wireless network.
- application delivery methods, software licensing, and software installation.

Essential Questions:

- What is the relationship between the Internet, the World Wide Web, and web browsers?
- What are some benefits of using social media? What are some drawbacks?
- What are the most common uses of cloud computing?

Enduring Understandings:

- In terms of networking, the Internet is an internetwork, or a connection between networks. It's a collection of many different networks owned by many different entities that all share information and communicate together.
- Social media is a common way for people to interact with each other on the Internet.
- The term "cloud computing" basically refers to using somebody else's hardware over the Internet to do computing tasks. Common uses of cloud technology include file storage, website hosting, web applications, social media, and gaming services.
- Cloud storage allows you to save your files to the Internet instead of saving them on a local storage device.
- There are two main ways to watch videos from the Internet: downloading, which creates a copy of the complete video file on your local computer, and streaming, which transmits the data to your computer in a continuous flow, allowing you to watch the video as it downloads.

Standards/Indicators/Student Learning Objectives (SLOs):

Students will be able to:

- Define the Internet and the World Wide Web.
- Describe the essential components of the Web, including websites, URLs, hyperlinks, web browsers, and search engines.
- Identify technologies that use the Internet, including the Web, email, instant messaging, VoIP, and the Internet of Things.
- Identify common web applications, including Webmail, Google Docs, Facebook, and YouTube.
- Define and describe the uses of cloud computing.
- Define social media and describe its uses.
- Recognize the risks and responsibilities of using social media.
- Describe the differences between downloading, live streaming, and on-demand streaming.
- Copy files from the local Windows file system to OneDrive.

ITEC.9-12.9.4.12.K.(1).1	Identify and analyze an individual's or a business organization's network system needs and requirements to design a network.

Lesson Titles:

2.1.1 The Internet (3:17)
2.1.2 The Web and Other Internet Technologies (4:48)
2.1.4 Social Media (4:42)
2.1.6 Cloud Computing (4:57)
2.1.8 Windows Cloud Storage (4:40)
2.1.10 Online Streaming (2:29)
2.1.12 Copy Files to OneDrive (0:46)
2.2.1 Using Web Browsers (5:40)

2.2.2 Website Navigation Facts
2.2.3 Online Searches (4:14)
2.2.5 Online Academic Research (5:13)
2.2.7 Configuring Web Browsers (0:13)
2.2.8 Web Browser Troubleshooting (2:56)
2.2.10 Clear Browser Cache (1:15)
2.2.12 Configure Browser Settings (1:22)
2.3.1 Introduction to Networking (2:08)

2.3.3 Network Servers (2:09)
2.3.4 Networking Devices and Interfaces (4:00)
2.3.6 Internet Service Types (4:33)
2.3.7 Internet Service Facts
2.3.8 Connect a Cable Modem (2:12)
2.3.10 Set Up an Ethernet Connection (1:15)
2.4.1 Device Addresses (3:22)

2.4.3 Internet Protocols (5:32)
2.4.4 Email Protocols (0:13)
2.4.6 Wireless Standards (3:09)
2.4.8 Careers in Networking (0:13)
2.4.10 Use a Wireless Network (1:04)

Career Readiness, Life Literacies, & Key Skills:

WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
WRK.K-12.P.7	Plan education and career paths aligned to personal goals.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
WRK.K-12.P.9	Work productively in teams while using cultural/global competence.
TECH.9.4.12.DC.7	Evaluate the influence of digital communities on the nature, content and responsibilities of careers, and other aspects of society (e.g., 6.1.12.CivicsPD.16.a).
TECH.9.4.12.DC.8	Explain how increased network connectivity and computing capabilities of everyday objects allow for innovative technological approaches to climate protection.

Inter-Disciplinary Connections:

LA.RST.9-10.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
LA.RST.9-10.7	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

Equity Considerations:

Climate Change

CS.9-12.8.1.12.DA.1	Create interactive data visualizations using software tools to help others better understand real world phenomena, including climate change.
TECH.9.4.12.DC.8	Explain how increased network connectivity and computing capabilities of everyday objects allow for innovative technological approaches to climate protection.

Holocaust Mandate

LGBTQ and Disabilities Mandate

Asian American Pacific Islander Mandate

Resources & Materials:

- Video lessons

Instructional Strategies, Learning Activities, and Levels of Blooms/DOK:

Learning Activities:

- 2.1.13 Copy Files to OneDrive
- 2.2.11 Clear Browser Cache
- 2.2.13 Configure Browser Settings
- 2.3.9 Connect a Cable Modem
- 2.3.11 Set Up an Ethernet Connection
- 2.4.11 Use a Wireless Network
- 2.5.12 Configure Windows Update

Instructional Strategies:

- Summarizing & Note Taking
- Direct Instruction
- Provide opportunities for student practice
- KWL Chart
- Chapter study guide
- Large group discussion

Blooms/DOK:

- Level 1: recall/remember vocabulary
- Level 2: categorize types of networks based on their use
- Level 3: compare and contrast networking equipment
- Level 4: students design a network for both internal and external communication

Summative Assessment:

- Labs (performance tests)
- Quiz on Application Delivery
- Quiz on Networking Basics
- Quiz on Networking Standards and Protocols
- Quiz on The Internet
- Quiz on Web Browsers

Formative Assessment:

- Anticipatory set
- Closure
- Exit tickets
- Graphic organizers
- Pop-quizzes (not graded)
- Questioning
- Think-pair-share
- Warm-up

Benchmark Assessments

Skills-based assessment
Reading response
Writing prompt
Lab practical

Alternative Assessments

Performance tasks
Project-based assignments
Problem-based assignments
Presentations
Reflective pieces
Concept maps
Case-based scenarios
Portfolios

Modifications

ELL Modifications:

- Allow alternate responses
- Frequent breaks
- Give advanced notes
- Give extended time
- Model instructions
- Simplify instructions

IEP & 504 Modifications:

- Additional time as needed
- Pair with other students
- Preferential seating
- Print out the text in hardcopy
- Read instructions aloud

G&T Modifications:

- Competitions and collaborative projects
- Curriculum acceleration
- Enrichment activities
- Extracurricular activities
- High expectations
- Independent projects
- Multi-level differentiated curriculum
- Set individual goals
- Special projects (e.g. newsletter)

At Risk Modifications

- Continue to repeat and rephrase the major point(s) of the unit or lesson
- Elicit prior knowledge
- Give very basic introduction
- Include hands-on experiences and manipulatives whenever possible

- Insert meanings of vocabulary continuously throughout the lesson
- Offer copies of lecture notes
- Provide study guides for tests well in advance
- Schedule field trips at the beginning of the unit
- Use graphic organizers

Technology Materials and Standards:

- Gimkit
- Google Classroom
- http://www.testout.com
- Interactive White Board
- Quizlet

TECH.8.2.12.E.2	Analyze the relationships between internal and external computer components.
TECH.8.2.12.E.4	Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).

Computer Science and Design Thinking Standards:

CS.K-12.2.a	Cultivate working relationships with individuals possessing diverse perspectives, skills, and personalities.
CS.K-12.4.c	Create modules and develop points of interaction that can apply to multiple situations and reduce complexity.
CS.K-12.6.b	Identify and fix errors using a systematic process.
CS.K-12.7.b	Describe, justify, and document computational and/or design processes and solutions using appropriate terminology consistent with the intended audience and purpose.