Arkansas Embedded Computer Science

4th Grade

Navigating the Digital World 1

1 Digital Communication - Using devices to stay connected with people. 1.1

1. Identify how not to be a cyberbully. 1.1.1
2. Describe how to disengage and/or ask for help/ assistance with cyberbullying and other online threats. 1.1.2
3. Identify positive and negative actions that add to a digital footprint. 1.1.3
4. Understand how to adjust online communication (e.g., use full words, tone, punctuation) based on context and purpose. 1.1.4

2 Digital Privacy & Security - Keeping you safe while exploring and learning online. 1.2

1. Describe potential consequences for failing to protect personal information online. 1.2.1
2. Compare and contrast online audiences (e.g., friends, family, online gaming, public posting), including what is appropriate to share. 1.2.2
3. Understand the curiosity gap and how bad actors try to convince you to click. 1.2.3
4. Identify websites for legitimacy, safety and appropriateness. 1.2.4

3 Responsible Use of Technology - Developing good habits to use throughout their digital lives. 1.3

1. Develop strategies for choosing alternative activities and setting personal technology use goals. 1.3.1
2. Properly acknowledge sources in all projects (e.g., reports, art, science). 1.3.2
3. Evaluate digital information as either reliable or unreliable. 1.3.3

Programming Fundamentals 2

1 Computational Thinking - Breaking down big, complex problems into smaller, manageable parts. 2.1

1. Create an original pattern and explain its rule. 2.1.1
2. Evaluate a set of instructions to see if it will complete the expected task. 2.1.2
3. Decompose a complex problem into subtasks. 2.1.3
4. Identify relevant information when problem solving. 2.1.4

Skip to main content

Designing Algorithms- Creating sets of instructions for solving problems. 2.2

1. Design multi-step algorithms that utilize decision-making structures. 2.2.1

2 Use debugging strategies to identify and fix errors. 2.2.2

3 **Develop Programming Skills - Learning to create simple instructions for computers to express ideas.** 2.3

1 Discuss how conditional statements mirror real-world decision making. 2.3.1

2 Use block based coding to create programs that include conditional statements (if-else) with comparative operators (<, > and ==) and loops. 2.3.2

Making Decisions with Data 3

1 **Data Collection - Gathering and organizing information to understand the importance of data in everyday life.** 3.1

1 Identify whether data is relevant to a given question or topic. 3.1.1

2 Explain how digital sensors (e.g., thermometer, pulse sensor, light sensor, caliper) can be used as tools to gather data. 3.1.2

3 Understand that data should be used to make informed decisions. 3.1.3

2 **Data Analysis - Understanding how data can be used to answer questions and make decisions in daily life.** 3.2

1 Identify patterns, trends, and relationships in data. 3.2.1

2 Develop relevant questions for exploring data. 3.2.2

3 Analyze data to draw conclusions and make predictions. 3.2.3

3 **Data Representation - Presenting data in various ways that make the information easier to understand and analyze.** 3.3

1 Create appropriate visualizations to communicate data insights. 3.3.1

2 Communicate data insights persuasively. 3.3.2

Computing Essentials 4

1 **Computer Components- Focusing on the basic functions of each part of the computer.** 4.1

1 Differentiate between external components(monitor, keyboard, mouse) and the main unit that houses internal components(CPU tower, laptop body). 4.1.1

2 Apply proper computer care practices and understand the impact of device usage. 4.1.2

3 Identify common operating systems (e.g., macOS, Windows, ChromeOS) and how we interact with them differently. 4.1.3

4 Communicate basic computer related problems including what happened, and what steps have already been taken. 4.1.4

2 **Digital Literacy- Using a variety of digital tools to create, communicate, collaborate, and apply learning across subjects.** 4.2

1 Create digital content using spreadsheet software (e.g., graphs and tables), applying formatting. 4.2.1

Skip to main content

2 Revise digital content, utilizing digital resources (e.g., spelling/grammar check, thesaurus, online research tools) to enhance clarity and impact. 4.2.2

3 Demonstrate basic file management (e.g., descriptive file names, create folders, navigate to find files). 4.2.3

4 Practice typing including touch typing, symbols and special characters, and keyboard shortcuts (e.g., cut, copy, paste, and undo). 4.2.4

---

3 Connected Devices - Understanding how computers communicate and share information. 4.3

1 Identify examples of Internet of Things (IoT) devices (e.g., thermostat, security cameras, refrigerator, doorbell, kitchen appliances, digital assistant, robot vacuum, outlets, lightbulbs). 4.3.1

2 Identify that there are limitations to the bandwidth of a network. 4.3.2

3 Describe basic troubleshooting steps for common network issues (e.g., restarting devices, checking network and power cables). 4.3.3