Alabama Digital Literacy and Computer Science

Grade 3

Computational Thinker

Abstraction

1 Use numbers or letters to represent information in another form. Examples: Secret codes/encryption, Roman numerals, or abbreviations. 3.1

2 Analyze a given list of sub-problems while addressing a larger problem. Example: Problem - making a peanut butter sandwich; sub-problem - opening jar, finding a knife, getting the bread. Problem - design and share a brochure; sub-problem - selecting font, choosing layout. 3.2

Algorithms

3 Explain that different solutions exist for the same problem or sub-problem. Example: Multiple paths exist to get home from school; one may be a shorter distance while one may encounter less traffic. 3.3

4 Examine logical reasoning to predict outcomes of an algorithm. 3.4

5 Create an algorithm to solve a problem as a collaborative team. Examples: Move a character/robot/person through a maze. List steps to build a sandwich. 3.5

6 Describe the function of a flowchart. 3.6

Programming and Development

7 Test and debug a given program in a block-based visual programming environment using arithmetic operators, conditionals, and repetition in programs, in collaboration with others. Examples: Sequencing cards for unplugged activities, online coding practice. 3.7

Citizen of a Digital Culture

Safety, Privacy, and Security

8 Describe how to use proper ergonomics when using devices. Examples: Body position, lighting, positioning of equipment, taking breaks. 3.8

9 Identify the proper use and operation of security technologies. Examples: Passwords, virus protection software, spam filters, pop-up blockers. 3.9

10 Describe ways web advertising collects personal information. Examples: Search ads, b 3.10

Impact of Computing

11 Identify resources in the community that offer technology access. Examples: Libraries, community centers, restaurants, education programs, schools, or hardware/software donation programs. 3.11

12 Identify and discuss ways that access to technology helps empower individuals and groups. Examples: Gives access to information; provides the ability to communicate with others around the world; enables people to buy and sell things. 3.12

Global Collaborator

Communication

13 Communicate key ideas and details collaboratively in a way that informs, persuades, and/or entertains, using digital tools. Example: Create a digital presentation to persuade school administrators to allow additional time for lunch. 3.13

Digital Tools

14 Type 15 words per minute with 95% accuracy using appropriate keyboarding techniques. 3.14

15 Describe local, networked, and online or cloud environments. 3.15

Collaborative Research

16 Conduct basic keyword searches to produce valid, appropriate results, and evaluate results for accuracy, relevance, and appropriateness. Examples: Use search techniques, check for credibility and validity. 3.16

Computing Analyst

Data

17 Describe examples of data sets or databases from everyday life. Examples: Library catalogs, school records, telephone directories, or contact lists. 3.17

Systems

18 Identify a broad range of digital devices, the services they provide, and appropriate uses for them. Examples: Computers, smartphones, tablets, robots, e-textiles, driving directions apps that access remote map services, digital personal assistants that access remote information services. 3.18

19 Describe the differences between hardware and software. 3.19

Innovative Designer

Human/Computer Partnerships

20 Compare and contrast human and computer performance on similar tasks to understand which is better suited to the task. Examples: Sorting alphabetically, finding a path across a cluttered room. 3.20

21 Explain advantages and limitations of technology. Example: A spell-checker can check thousands of words faster than a human could look them up; however, a spell-checker might not know whether underserved is correct or if the author's intent was to type undeserved. 3.21

Design Thinking

22 Discuss the design process and use digital tools to illustrate potential solutions. 3.22

23 Implement the design process to solve a simple problem. Examples: Uneven table leg, noise in the cafeteria, tallying the collection of food drive donations. 3.23