Arizona Computer Science

# Grade 3

## Concept: Computing Systems (CS) 3.CS

### D. Subconcept: Devices (D) 3.CS.D

1 Identify how internal and external parts of computing devices function to form a system within a single device and hardware that connects to the device to extend capability. 3.CS.D.1

### HS. Subconcept: Hardware and Software (HS) 3.CS.HS

1 Recognize that hardware (devices) and software (programs/apps) communicate in a special language that the computing system can understand. 3.CS.HS.1

2 Recognize that hardware (devices) can only accomplish the specific tasks the software (programs/apps) is designed to accomplish. 3.CS.HS.2

### T. Subconcept: Troubleshooting (T) 3.CS.T

1 Identify and use common troubleshooting strategies to solve simple hardware and software problems. 3.CS.T.1

## Concept: Networks and the Internet (NI) 3.NI

### C. Subconcept: Cybersecurity (C) 3.NI.C

1 Identify real-world cybersecurity problems and how personal information can be protected. 3.NI.C.1

### NCO. Subconcept: Network, Communication, and Organization (NCO) 3.NI.NCO

1 Model how information flows in a physical or wireless path to travel to be sent and received is sent and received through a physical or wireless path. 3.NI.NCO.1

## Concept: Data and Analysis (DA) 3.DA

### CVT. Subconcept: Collection, Visualization and Transformation (CVT) 3.DA.CVT

1 Select tools from a specified list to collect, organize, and present data visually to highlight relationships and support a claim. 3.DA.CVT.1

### S. Subconcept: Storage (S) 3.DA.S

1 Recognize different file extensions. 3.DA.S.1

### IM. Subconcept: Inference and Models (IM) 3.DA.IM

1 Use a computational tool to draw conclusions, make predictions, and answer questions utilizing a specified data set. 3.DA.IM.1

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## Concept: Algorithms and Programming (AP) 3.AP

### A. Subconcept: Algorithms (A) 3.AP.A

1 Recognize and compare multiple algorithms for the same task and determine which are effective. 3.AP.A.1

### V. Subconcept: Variables (V) 3.AP.V

1 Create programs that use variables to store and modify data. 3.AP.V.1

### C. Subconcept: Control (C) 3.AP.C

1 Create programs that include sequences, events, loops, and/or conditionals. 3.AP.C.1

### M. Subconcept: Modularity (M) 3.AP.M

1 Decompose problems into smaller, manageable subproblems to facilitate the program development process. 3.AP.M.1

### PD. Subconcept: Program Development (PD) 3.AP.PD

1 With teacher guidance, use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. 3.AP.PD.1

2 Observe intellectual property rights and give appropriate attribution when creating or remixing programs. 3.AP.PD.2

3 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. 3.AP.PD.3

4 With teacher guidance, students take on varying roles, when collaborating with peers during the design, implementation, and review stages of program development. 3.AP.PD.4

5 Describe choices made during program (procedure) development using code comments, presentations, and/or demonstrations. 3.AP.PD.5

## Concept: Impacts of Computing (IC) 3.IC

### C. Subconcept: Culture (C) 3.IC.C

1 Identify computing technologies that have changed the world. 3.IC.C.1

2 With teacher guidance, brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users. 3.IC.C.2

### SI. Subconcept: Social Interactions (SI) 3.IC.SI

1 Seek opportunities for local collaboration to facilitate communication and innovation. 3.IC.SI.1

### SLE. Subconcept: Safety, Law, and Ethics (SLE) 3.IC.SLE

1 Use material that is publicly available and/or permissible to use. 3.IC.SLE.1