Arizona Computer Science

Grade 5

Concept: Computing Systems (CS) 5.CS

D. Subconcept: Devices (D) 5.CS.D

1 Analyze and model how internal and external parts of computing devices communicate as a system. 5.CS.D.1

2 Explain how computing devices affect humans in positive and negative ways. 5.CS.D.2

HS. Subconcept: Hardware and Software (HS) 5.CS.HS

1 Model how information is transformed into binary digits to be stored or processed. 5.CS.HS.1

2 Demonstrate and explain how hardware can accomplish different tasks depending on the software. 5.CS.HS.2

T. Subconcept: Troubleshooting (T) 5.CS.T

1 Apply potential solutions and solve simple hardware and software problems using common troubleshooting strategies. 5.CS.T.1

Concept: Networks and the Internet (NI) 5.NI

C. Subconcept: Cybersecurity (C) 5.NI.C

1 Identify solutions to real-world cybersecurity problems and how personal information can be protected. 5.NI.C.1

NCO. Subconcept: Network, Communication, and Organization (NCO) 5.NI.NCO

1 Analyze the advantages and disadvantages of various network types. 5.NI.NCO.1

Concept: Data and Analysis (DA) 5.DA

CVT. Subconcept: Collection, Visualization and Transformation (CVT) 5.DA.CVT

1 Select tools to collect, organize, manipulate, and present data visually through multiple representations to highlight relationships and support a claim. 5.DA.CVT.1

S. Subconcept: Storage (S) 5.DA.S

1 Discuss different file extensions and how they are stored and retrieved on a computing device. 5.DA.S.1

IM. Subconcept: Inference and Models (IM) 5.DA.IM

1 Use data to propose cause-and-effect relationships, predict outcomes, or communicate an idea. 5.DA.IM.1

Concept: Algorithms and Programming (AP) 5.AP

A. Subconcept: Algorithms (A) 5.AP.A

1 Compare, test, and refine multiple algorithms for the same task and determine which is the most effective. 5.AP.A.1

V. Subconcept: Variables (V) 5.AP.V

1 Recognizing that the data type determines the values that can be stored and the operations that can be performed on the data. 5.AP.V.1

C. Subconcept: Control (C) 5.AP.C

1 Create programs that include sequences, events, loops, and conditionals. 5.AP.C.1

M. Subconcept: Modularity (M) 5.AP.M

1 Decompose problems into manageable subproblems to facilitate the program development process. 5.AP.M.1

2 Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. 5.AP.M.2

PD. Subconcept: Program Development (PD) 5.AP.PD

1 Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. 5.AP.PD.1

2 Observe intellectual property rights and give appropriate attribution when creating or remixing programs. 5.AP.PD.2

3 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. 5.AP.PD.3

4 Take on varying roles when collaborating with peers during the design, implementation, and review stages of program development. 5.AP.PD.4

5 Describe choices made during program development using code comments, presentations, and demonstrations. 5.AP.PD.5

Concept: Impacts of Computing (IC) 5.IC

C. Subconcept: Culture (C) 5.IC.C

1 Discuss computing technologies that have changed the world. 5.IC.C.1

2 Design ways to improve the accessibility and usability of technology products for the diverse needs and wants of users. 5.IC.C.2

SI. Subconcept: Social Interactions (SI) 5.IC.SI

1 Seek opportunities for local and global collaboration to facilitate communication and innovation. 5.IC.SI.1

SLE. Subconcept: Safety, Law, and Ethics (SLE) 5.IC.SLE

1 Use public domain or creative commons media, and refrain from copying or using material created by others without permission. 5.IC.SLE.1