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

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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