Arizona Computer Science

Grade 6

Concept: Computing Systems (CS) 6.CS

D. Subconcept: Devices (D) 6.CS.D

1 Compare computing device designs based on how humans interact with them. 6.CS.D.1

HS. Subconcept: Hardware and Software (HS) 6.CS.HS

1 Explain how hardware and software can be used to collect and exchange data. 6.CS.HS.1

T. Subconcept: Troubleshooting (T) 6.CS.T

1 Identify problems that can occur in computing devices and their components within a system. 6.CS.T.1

Concept: Networks and the Internet (NI) 6.NI

C. Subconcept: Cybersecurity (C) 6.NI.C

1 Identify multiple methods of encryption to secure the transmission of information. 6.NI.C.1

2 Identify different physical and digital security measures that protect electronic information. 6.NI.C.2

NCO. Subconcept: Network, Communication, and Organization (NCO) 6.NI.NCO

1 Discuss how protocols are used in transmitting data across networks and the Internet. 6.NI.NCO.1

Concept: Data and Analysis (DA) 6.DA

CVT. Subconcept: Collection, Visualization and Transformation (CVT) 6.DA.CVT

1 Compare different computational tools used to collect, analyze and present data that is meaningful and useful. 6.DA.CVT.1

S. Subconcept: Storage (S) 6.DA.S

1 Identify multiple encoding schemes used to represent data, including binary and ASCII. 6.DA.S.1

IM. Subconcept: Inference and Models (IM) 6.DA.IM

1 Discuss the validity of a computational model based on the reliability of the data. 6.DA.IM.1

Concept: Algorithms and Programming (AP) 6.AP

A. Subconcept: Algorithms (A) 6.AP.A

1. Identify planning strategies such as flowcharts or pseudocode, to simulate algorithms that solve problems. 6.AP.A.1

V. Subconcept: Variables (V) 6.AP.V

1. Identify variables that represent different data types and perform operations on their values. 6.AP.V.1

C. Subconcept: Control (C) 6.AP.C

1. Design programs that combine control structures, including nested loops and compound conditionals. 6.AP.C.1

IM. Subconcept: Modularity (M) 6.AP.IM

1. Decompose problems into parts to facilitate the design, implementation, and review of programs. 6.AP.IM.1
2. Use procedures to organize code and make it easier to reuse. 6.AP.IM.2

PD. Subconcept: Program Development (PD) 6.AP.PD

1. Seek and incorporate feedback from team members and users to refine a solution that meets user needs. 6.AP.PD.1
2. Incorporate existing code into programs and give attribution. 6.AP.PD.2
3. Test programs using a range of inputs and identify expected outputs. 6.AP.PD.3
4. Maintain a timeline with specific tasks while collaboratively developing computational artifacts. 6.AP.PD.4
5. Document programs in order to make them easier to follow, test, and debug. 6.AP.PD.5

Concept: Impacts of Computing (IC) 6.IC

C. Subconcept: Culture (C) 6.IC.C

1. Identify some of the tradeoffs associated with computing technologies that can affect people's everyday activities and career options. 6.IC.C.1
2. Identify issues of bias and accessibility in the design of existing technologies. 6.IC.C.2

SI. Subconcept: Social Interactions (SI) 6.IC.SI

1. Identify the advantages of creating a computational product by collaborating with others using digital technologies. 6.IC.SI.1

SLE. Subconcept: Safety, Law, and Ethics (SLE) 6.IC.SLE

1. Describe how some digital information can be public or can be kept private and secure. 6.IC.SLE.1