Kansas Computer Science

Grade 4

Computing Systems CS

D. Devices D

1 Identify and explain how computing devices can be connected to other devices to extend their capabilities. 4.CS.D.01

HS. Hardware and Software HS

1 Explain how information is translated, transmitted, and processed between hardware and software in order to accomplish tasks. 4.CS.HS.01

IO. Input and Output IO

1 Demonstrate proper use of grade level appropriate input devices and produce digital artifacts with a controlled audience. 4.CS.IO.01

T. Troubleshooting T

1 Identify, using accurate terminology, simple hardware and software problems that may occur during everyday use, discuss problems with peers and adults, and apply strategies for solving these problems. 4.CS.T.01

Networks & the Internet NI

NCO. Network Communication & Organization NCO

1 Explain how information is sent and received across physical or wireless paths. 4.NI.NCO.01

C. Cybersecurity C

1 Identify and explain issues related to responsible use of technology and information, and describe personal consequences of inappropriate use. 4.NI.C.01

Data Analysis DA

S. Storage S

1 Classify different storage locations (physical, shared, or cloud) based on the type of file, storage requirements, and sharing requirements. 4.DA.S.01

C. Collection C

1 Gather and manipulate relevant and reliable data using the appropriate digital tool. 4.DA.C.01

CVT. Visualization & Transformation CVT

1 Organize and present collected data visually to highlight comparisons. 4.DA.CVT.01

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IM. Inference and Models IM

1 Determine how the accuracy of conclusions are influenced by the amount and relevance of the data collected. 4.DA.IM.01

Algorithms and Programming AP

A. Algorithms A

1 Analyze and refine multiple algorithms for the same task. 4.AP.A.01

V. Variables V

1 Utilize, create, and modify programs that use variables, with grade level appropriate data. 4.AP.V.01

C. Control C

1 Create programs using a programming language that utilize sequencing, repetition, conditionals and variables to solve a problem or express ideas both independently and collaboratively. 4.AP.C.01

M. Modularity M

1 Decompose (break down) large problems into smaller, manageable subproblems. Then form algorithms to solve each subproblem. 4.AP.M.01

2 With grade appropriate complexity, modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. 4.AP.M.0

PD. Program Development PD

1 Create a plan using an iterative process to plan the development of a program that includes user preferences while solving simple problems. 4.AP.PD.01

2 Use proper citations and document when ideas are borrowed and changed for their own use (e.g., using pictures created by others, using music created by others, remixing programming projects). 4.AP.PD.2

3 Analyze, debug (identify/fix errors), and create a program that includes sequencing, repetition and variables in a programming language. 4.AP.PD.3

4 Communicate and explain your program development using comments, presentations and demonstrations. 4.AP.PD.4

Impacts of Computing IC

C. Culture C

1 Brainstorm problems and ways to improve computing devices to increase accessibility to all users. 4.IC.C.01

SI. Social Interactions SI

1 Develop a code of conduct, explain, and practice grade-level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior. (Digital Citizenship - review of all nine components, but focused on Digital Access). 4.IC.SI.01

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2 As a team, consider each other's' perspectives on improving a computational product. 4.IC.SI.02

H. History H

1 Identify and give examples of computing technologies that have changed the world, and express how those technologies influence, and are influenced by, society. 4.IC.H.01

SLE. Safety, Law, & Ethics SLE

1 Discuss the social impact of violating intellectual property rights. 4.IC.SLE.01

CP. Community Partnerships CP

1 Design a visual product depicting the connections between computer science and other fields. 4.IC.CP.01