Alaska Computer Science

Grade 7

Computing Systems

Devices

1 Review, analyze, and evaluate device(s) and how other users interact with devices and recommend improvements to design. 7.CS.D.01

Hardware and Software

1 Evaluate and recommend improvements to hardware and software (User Interface) design to collect and exchange data. 7.CS.HS.01

Troubleshooting

1 Identify and fix increasingly complex software and hardware problems with computing devices and their components. 7.CS.T.01

Network and the Internet

Network Communication and Organization

1 Explain how a system recovers when a packet is lost and the effect it has on the transferred information. 7.NI.NCO.01

Cybersecurity

1 Explain how to protect electronic information, both physical and digital, identify cybersecurity concerns and options to address issues with the Internet and the systems it uses 7.NI.C.01

2 Identify and explain two or more methods of encryption used to ensure and secure the transmission of information. 7.NI.C.02

Data Analysis

Storage

1 Create multiple representations of data. 7.DA.S.01

Collection, Visualization and Transformation

1 Collect data using computational tools and transform the data to make it more useful and reliable. 7.DA.CVT.01

Inference and Models

1 Discuss the correctness of a model representing a system by comparing the model's generated results with observed data from the modeled system. 7.DA.IM.01

Skip to main content

Alg gorithms
Pr

1 Select and modify an existing algorithm in natural language or pseudocode to solve complex problems. 7.AP.A.01

Variables

1 Develop programs that utilize combinations of repetition, compound conditionals, functions, and the manipulation of variables representing different data types. 7.AP.V.01

Modularity

1 Decompose (break down) problems into abstraction layers to facilitate the design, implementation, and review of increasingly complex programs. 7.AP.M.01

Program Development

1 Seek and incorporate feedback from team members and users to refine a solution to a problem. 7.AP.PD.01

2 Incorporate existing code, media, and libraries into original programs of increasing complexity and give attribution. 7.AP.PD.02

3 Test and refine programs using a variety of student created inputs. 7.AP.PD.03

4 Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts. 7.AP.PD.04

5 Document block-based or text-based programs of increasing complexity in order to make them easier to follow, test, and debug. 7.AP.PD.05

Community, Global and Ethical Impacts

Culture

1 Explain how computing impacts innovation in other fields and explore carriers related to the field of computer science. 7.GCEI.C.01

2 Relate the distribution of computing resources in a global society to issues of equity, access, and power. 7.GCEI.C.02

Social Interactions

1 Individually and collaboratively use advanced tools to design and create online content (e.g., digital portfolio, multimedia, blog, web page). Describe and use safe, appropriate, and responsible practices (netiquette) when participating in online communities (e.g., discussion groups, blogs, social networking sites). 7.GCEI.SI.01

Safety, Law and Ethics

1 Explain the connection between the longevity of data on the Internet, personal online identity, and personal privacy. 7.GCEI.SLE.01

2 Describe ways in which computers use models of intelligent behavior (e.g., robot motion; speech and language understanding; computer vision) 7.GCEI.SLE.02