Alabama Digital Literacy and Computer Science

Grade 8

Computational Thinking DLCS25.8.CT

AAD Algorithms, Abstraction, and Decomposition DLCS25.8.CT.AAD

1. Utilize a programming language to create algorithms that include sequencing, selection, and iteration. DLCS25.8.1
2. Design multi-branched flowcharts and corresponding pseudocode. DLCS25.8.2
3. Evaluate programs containing nested logic by applying relational and logical operators to trace conditions, and debug when those conditions do not behave as expected. DLCS25.8.3
4. Decompose a problem into multiple parts to identify each part's functionality and support maintenance and future improvements. DLCS25.8.4
5. Create reusable functions that include inputs to change how the function works and explain how using functions makes code easier to reuse and understand. DLCS25.8.5

P Programming DLCS25.8.CT.P

6. Improve an existing program by adding new features or increase its efficiency. DLCS25.8.6
7. Explain how software is developed, tested, and maintained to ensure quality. DLCS25.8.7

Data Science DLCS25.8.DS

DCR Data Collection and Representation DLCS25.8.DS.DCR

8. Design a data store and apply validation techniques. DLCS25.8.8
9. Explain how binary data is used in computing systems to represent and process different types of information. DLCS25.8.9
10. Explain how data size and format affect storage and performance. DLCS25.8.10

DA Data Analysis DLCS25.8.DS.DA

11. Use digital tools or visualizations to analyze datasets, detect anomalies, and develop narratives based on findings. DLCS25.8.11
12. Explain how AI systems use data to make decisions and predictions. [AI] DLCS25.8.12

MS Modeling and Simulation DLCS25.8.DS.MS

13. Develop a model or simulation and evaluate its accuracy and limitations. DLCS25.8.13

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Computing Systems DLCS25.8.CS

NI Networks and Internet DLCS25.8.CS.NI

14 Create a diagram of a network to meet specific needs, including modems, routers, and servers. DLCS25.8.14

15 Explain how data is broken into packets, sent across the Internet, and reassembled, including how multiple protocols work together for communication. DLCS25.8.15

16 Explain how cloud computing enables data access, including the advantages and limitations of technologies that enable data access. DLCS25.8.16

C Cybersecurity DLCS25.8.CS.C

17 Dissect a previously occurred cybersecurity breach, identify failure points, and explain how better safeguards could have prevented the attack. DLCS25.8.17

18 Evaluate cybersecurity risks across networks, applications, and cloud-based systems and recommend improvements. DLCS25.8.18

19 Create a personal cybersecurity plan which includes identifying online risks, evaluating their own digital footprint, adjusting privacy settings, and describing steps to protect their accounts and personal information. DLCS25.8.19

HS Hardware and Software DLCS25.8.CS.HS

20 Demonstrate how hardware components work together in the data processing cycle to perform computing tasks. DLCS25.8.20

21 Complete a project by combining multiple software applications. DLCS25.8.21

22 Evaluate the advantages and disadvantages of open-source and proprietary software in different scenarios. DLCS25.8.22

Impact of Computing DLCS25.8.IC

CP Career Paths DLCS25.8.IC.CP

23 Research and report on the responsibilities of various careers that use computer science expertise. DLCS25.8.23

E Ethics DLCS25.8.IC.E

24 Demonstrate safe, legal, and ethical habits when creating and sharing digital content. DLCS25.8.24

25 Evaluate ethical dimensions and societal impacts of AI technologies. [AI] DLCS25.8.25

S Society DLCS25.8.IC.S

26 Analyze how computing technologies impact laws and influence social structures over time. DLCS25.8.26

ET Emerging Technology DLCS25.8.IC.ET

27 Research the use of emerging technologies in everyday life, and report on their benefits and limitations. [AI] DLCS25.8.27

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A Accessibility DLCS25.8.IC.A

28 Design and implement solutions that address specific accessibility needs, considering feedback and making adjustments. DLCS25.8.28

29 Research and report on provisions of the Americans with Disabilities Act (ADA) regarding the accessibility of technology. DLCS25.8.29

Digital Proficiency DLCS25.8.DP

IL Information Literacy DLCS25.8.DP.IL

30 Synthesize information from credible sources to create an original product. DLCS25.8.30

31 Explain how digital manipulation influences actions, perceptions, and public opinion. [AI] DLCS25.8.31

DL Digital Life DLCS25.8.DP.DL

32 Develop strategies to manage screen time, handle multitasking, and balance the use of technology in daily life. DLCS25.8.32

DT Digital Tools DLCS25.8.DP.DT

33 Evaluate the effectiveness of digital tools for communication and project-based collaboration. DLCS25.8.33

34 Compose professional emails and presentations, demonstrating clear purpose, tone, and etiquette across digital platforms. DLCS25.8.34

35 Produce new content through guided collaboration with AI systems. [AI] DLCS25.8.35

36 Input text at a rate of 35 words per minute via keyboard or alternative text input method. DLCS25.8.36