

# Grade 7

## Computational Thinker CT

### Ab. Abstraction CT.AB

- 1 Create a function to simplify a task. Example: Getting a writing utensil, getting paper, jotting notes can collectively be named “note taking”. CT.AB.1
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### Al. Algorithms CT.AL

- 2 Create complex pseudocode using conditionals and Boolean statements. Example: Automated vacuum pseudocode – drive forward until the unit encounters an obstacle; reverse 2”; rotate 30 degrees to the left, repeat. CT.AL.2
  - 3 Create algorithms that demonstrate sequencing, selection or iteration. Examples: Debit card transactions are approved until the account balance is insufficient to fund the transaction = iteration, do until. CT.AL.3
  - 4 Design a complex algorithm that contains sequencing, selection or iteration. Examples: Lunch line algorithm that contains parameters for bringing your lunch and multiple options available in the lunch line. CT.AL.4
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### PD. Programming & Development CT.PD

- 5 Solve a complex problem using computational thinking. CT.PD.5
  - 6 Create and organize algorithms in order to automate a process efficiently. Example: Set of recipes (algorithms) for preparing a complete meal. CT.PD.6
  - 7 Create a program that updates the value of a variable in the program. Examples: Update the value of score when a coin is collected (in a flowchart, pseudocode or program). CT.PD.7
  - 8 Formulate a narrative for each step of a process and its intended result, given pseudocode or code. CT.PD.8
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## Citizen of a Digital Culture CDC

### SPS. Safety, Privacy, & Security CDC.SPS

- 9 Identify common methods of securing data. Examples: Permissions, encryption, vault, locked closet. CDC.SPS.9

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**LEB. Legal & Ethical Behavior** CDC.LEB

- 10 Explain social engineering, including countermeasures, and its impact on a digital society. Examples: Phishing, hoaxes, impersonation, baiting, spoofing. CDC.LEB.10
- 11 Demonstrate positive, safe, legal, and ethical habits when creating and sharing digital content and identify the consequences of failing to act responsibly. CDC.LEB.11

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**DI. Digital Identity** CDC.DI

- 12 Discuss the impact of data permanence on digital identity including best practices to protect personal digital footprint. CDC.DI.12

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**IC. Impact of Computing** CDC.IC

- 13 Compare and contrast information available locally and globally. Example: Review an article published in the United States and compare to an article on the same subject published in China. CDC.IC.13
- 14 Discuss current events related to emerging technologies in computing and the effects such events have on individuals and the global society. CDC.IC.14
- 15 Discuss unique perspectives and needs of a global culture when developing computational artifacts, including options for accessibility for all users. Example: Would students create a webpage aimed at reaching a village of users that have no access to the Internet? CDC.IC.15

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**Global Collaborator** GC**CC. Creative Communications** GC.CC

- 16 Construct content designed for specific audiences through an appropriate medium. Examples: Design a multi-media children's e-book with an appropriate readability level. GC.CC.16
- 17 Publish content to be available for external feedback. GC.CC.17

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**DT. Digital Tools** GC.DT

- 18 Type 35 words per minute with 95% accuracy using appropriate keyboarding techniques. GC.DT.18

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**SI. Social Interactions** GC.SI

- 19 Discuss the benefits and limitations of censorship. GC.SI.19
- 20 Evaluate the validity and accuracy of a data set. GC.SI.20

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**Computing Analyst** CA**D. Data** CA.D

- 21 Compare common transfer protocols. Examples: FTP, HTTP CA.D.21
- 22 Compare data storage structures. Examples: Stack, array, queue, table, database. CA.D.22

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**S. Systems** CA.S

- 23 Demonstrate the use of a variety of digital devices individually and collaboratively to collect, analyze, and present information for content-related problems. CA.S.23
- 24 Diagram a network given a specific setup or need. Examples: Home network, public network, business network. CA.S.24
- 25 List common methods of system cybersecurity. Examples: Various password requirements, two factor authentication, biometric, geolocation. CA.S.25

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**MS. Modeling & Simulation** CA.MS

- 26 Categorize models based on the most appropriate representation of various systems. CA.MS.26
- 27 Identify data needed to create a model or simulation of a given event. Examples: When creating a random name generator, the program needs access to a list of possible names. CA.MS.27

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**Innovative Designer** ID**HCP. Human/Computer Partnerships** ID.HCP

- 28 Classify types of assistive technologies. Examples: Hardware, software, stylus, sticky keys. ID.HCP.28
- 29 Compare and contrast human intelligence and artificial intelligence. ID.HCP.29

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**DT. Design Thinking** ID.DT

- 30 Apply the problem-solving process to solve real-world problems. ID.DT.30