# Lift-Off with CodeX — Tech Apps Standards Grade 6

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| **(1) Computational thinking – foundations.** The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. | (A) decompose real-world problems into structured parts by using visual representation |  |  |  |  |  | X | X | X |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X | X | X |  |  |
|  | (B) analyze the patterns and sequences found in visual representations such as learning maps, concept maps, or other representations of data |  |  |  |  | X | X | X | X | X | X |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  | X | X | X | X | X | X |
|  | (C) define abstraction and distinguish between generalized information and specific information in the context of solving a problem or completing a task |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  | X |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
|  | (D) design a plan collaboratively using visual representation to document a problem, possible solutions, and an expected timeline for the development of a coded solution |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
|  | (E) analyze different techniques used in debugging and apply them to an algorithm |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
|  | (F) analyze the benefits of using iteration (code and sequence repetition) in algorithms |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  | X |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
| **(2) Computational thinking – applications.** The student applies the fundamentals of computer science. | (A) define and label variables that relate to their programming or algorithm |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
|  | (B) use a design process to create block-based and text-based programs that include sequences, loops, conditionals, and events to solve an everyday problem |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
| **(3) Creativity and innovation – innovative design process.** The student takes an active role in learning by using a design process and creative thinking to develop and evaluate solutions, considering a variety of local and global perspectives. | (A) resolve challenges in design processes independently using goal setting and personal character traits such as demonstrating courage and confidence |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  | X |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
|  | (B) discuss and implement a design process using digital tools to compare, contrast, and evaluate student-generated outcomes |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  | X |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
|  | (C) identify how the design process is used in various industries |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **(4) Creativity and innovation – emerging technologies.** The student demonstrates a thorough understanding of the role of technology throughout history and its impact on societies. | (A) discuss how changes in technology throughout history have impacted various areas of study | X |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |
|  | (B) discuss how global trends impact the development of technology | X |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X |
|  | (C) transfer current knowledge to the learning of newly encountered technologies | X |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  | X |  |  |  | X | X | X | X | X | X | X | X | X | X |
| **(5) Data literacy, management, and representation – collect data.** The student uses advanced digital strategies to collect and represent data. | (A) demonstrate how data can be represented in Boolean expression |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
|  | (B) discuss and use advanced search strategies, including keywords, Boolean operators, and limiters |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **(6) Data literacy, management, and representation – organize, manage, and analyze data.** The student uses digital tools to transform data, make inferences, and predictions. | (A) use digital tools to transform data in order to identify and discuss trends and make inferences |  |  |  |  | X | X | X | X | X | X | X |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  | X | X | X | X | X | X |

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| **(7) Data literacy, management, and representation – communicate and publish results**. The student creates digital products to communicate data to an audience for an intended purpose. | (A) use digital tools to communicate and display data from a product or process to inform an intended audience |  | X | X | X | X | X | X | X | X | X | X |  | X | X | X |  |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X |
| **(8) Digital citizenship – social interactions.** The student understands different styles of digital communication and that a student's actions online can have a long-term impact. | (A) identify the impact of a digital footprint |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (B) create formal and informal digital communications using appropriate digital etiquette |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (C) collaborate on digital platforms such as recording a video conference presentation using appropriate formal and informal digital etiquette |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **(9) Digital citizenship – ethics and laws.** The student recognizes and practices responsible, legal, and ethical behavior while using digital tools and resources. | (A) adhere to local acceptable use policy (AUP) and practice safe, ethical, and positive online behaviors |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (B) discuss and define intellectual property and associated terms, including copyright law, permission, fair use, creative commons, open source, and public domain |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |
|  | (C) create citations and cite sources for a variety of digital forms of intellectual property |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |
|  | (D) describe how information can be exaggerated or misrepresented online |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |
| **(10) Digital citizenship – privacy, safety, and security.** The student practices safe, legal and ethical digital behaviors to become a socially responsible digital citizenship. | (A) identify real-world cybersecurity problems such as phishing, malware, password attacks, identity theft, and hacking |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (B) identify various methods of cyberbullying such as harassment, impersonation, and cyberstalking |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| **(11) Practical technology concepts – processes.** The student evaluates and selects appropriate methods or techniques for an independent project and identifies and solves common hardware and software problems using troubleshooting strategies. | (A) create and design files in various formats such as text, graphics, video, and audio files |  |  |  |  |  |  |  |  |  |  |  |  |  | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **(12) Practical technology concepts – skills and tools.** The student leverages technology systems, concepts, and operations to produce digital artifacts. | (A) apply appropriate technology terminology such as cloud applications, input, output, and basic programming | X | X | X | X | X | X | X | X | X | X | X |  |  | X | X |  | X |  | X | X | X |  | X | X | X | X | X | X | X | X | X | X |
|  | (B) identify effective file management strategies such as file naming conventions, local and remote locations, backup, hierarchy, folder structure, file conversion, tags, and emerging digital organizational strategies |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (C) select and use the appropriate platform and tools to complete a specific task or project |  | X | X | X | X | X | X | X | X | X | X |  |  | X | X |  |  |  | X | X | X |  | X | X | X | X | X | X | X | X | X | X |

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| | (D) demonstrate improvement in speed and accuracy as measured by words per minute when applying correct keyboarding techniques | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | |
| | (E) select and use appropriate shortcuts within applications | | X | X | X | X | X | X | X | X | X | X | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X |
| | (F) use help sources to research application features and solve software issues | | X | X | X | X | X | X | X | X | X | X | | | X | X | | | | | | | | | X | X | X | X | X | X | X | X | X |
| | (G) identify types of local and remote data storage such as cloud architecture or local server | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | |
| | (H) use productivity tools found in spreadsheet, word processing, and publication applications to create digital artifacts such as reports, graphs, and charts | | | | | | | | | | | X | | X | X | X | | | | X | X | X | | | X | X | X | X | X | X | X | X | X |