



Python with CodeX – TEKS Technology Applications Grade 6 Curriculum

Updated 06/04/2024 by Jill Jones

| KNOWLEDGE & SKILLS | Technology Applications Grade 6 No prerequisite | Mission / Lesson |
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| <p>(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.</p> | (A) decompose real-world problems into structured parts by using visual representation | Design Process Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 <i>Mission 9, Remix 4</i> <i>Mission 12, Remix 5</i> <i>Pixel Images, CodeX & Images</i> <i>CodeX & Audio</i> |
| | (B) analyze the patterns and sequences found in visual representations such as learning maps, concept maps, or other representations of data | Design Process, Remix 3 |
| | (C) define abstraction and distinguish between generalized information and specific information in the context of solving a problem or completing a task | Mission 3, Remix 1 Mission 8, Remix 3 <i>Mission 9, Remix 4</i> <i>Mission 10, Mission 11</i> <i>Mission 12, Remix 5</i> |
| | (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 | Design Process, Remix 1 Remix 2, Mission 7 Mission 8, Remix 3 <i>Remix 5, Pixel Images</i> <i>CodeX & Images, CodeX & Audio</i> |
| | (E) analyze different techniques used in debugging and apply them to an algorithm | Mission 3, Mission 4, Remix 1 Mission 5, Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 <i>Mission 9, Remix 4</i> <i>Mission 10, Mission 11, Mission 12</i> <i>Remix 5, Pixel Images</i> <i>CodeX & Images, CodeX & Audio</i> |
| | (F) analyze the benefits of using iteration (code and sequence repetition) in algorithms | Design Process Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 <i>Mission 9, Remix 4, Mission 10,</i> <i>Mission 11, Mission 12 Remix 5</i> |
| <p>(2) Computational thinking - applications. The student applies the fundamentals of computer science.</p> | (A) define and label variables that relate to their programming or algorithm | Mission 3, Mission 4, Remix 1 Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 <i>Mission 9, Remix 4, Mission 10,</i> <i>Mission 11, Mission 12 Remix 5</i> <i>Pixel Images, CodeX & Images</i> <i>CodeX & Audio, CodeX & Line Art</i> |

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| | (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 | Mission 4, Design Process Remix 1, Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 <i>Mission 9, Remix 4, Mission 10, Mission 11, Mission 12, Remix 5</i> <i>Pixel Images, CodeX & Images</i> <i>CodeX & Audio, CodeX & Line Art</i> |
| (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 | Design Process, Remix 1 Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 <i>Mission 9, Remix 4, Mission 10, Mission 11, Mission 12, Remix 5</i> <i>Pixel Images, CodeX & Images</i> <i>CodeX & Audio, CodeX & Line Art</i> |
| | (B) discuss and implement a design process using digital tools to compare, contrast, and evaluate student-generated outcomes | Design Process, Remix 1 Remix 2, Remix 3 <i>Remix 4, Remix 5</i> <i>Pixel Images, CodeX & Images</i> <i>CodeX & Audio, CodeX & Line Art</i> |
| | (C) identify how the design process is used in various industries | Design Process Technology & Trends |
| (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 | What is Computer Science? Technology & Trends |
| | (B) discuss how global trends impact the development of technology | What is Computer Science? Technology & Trends |
| | (C) transfer current knowledge to the learning of newly encountered technologies | Mission 2, Mission 3, Remix 1 Mission 5, Remix 2 Mission 7, Remix 3 Data & Trends, Cybersecurity <i>Mission 9, Remix 4, Remix 5</i> |
| (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 | Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 Searches <i>Mission 9, Remix 4</i> |
| | (B) discuss and use advanced search strategies, including keywords, Boolean operators, and limiters | Searches |
| (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 | Data & Trends, Searches |
| (7) Data literacy, management, and representation - communicate and publish results. The student creates | (A) use digital tools to communicate and display data from a product or process to inform an intended audience | What is Computer Science? Technology & Trends Data & Trends, Searches |

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| digital products to communicate data to an audience for an intended purpose. | | Digital Citizenship, Cybersecurity Intellectual Property <i>Mission 10, Mission 11 Mission 12, Remix 5</i> |
| (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 | Digital Citizenship |
| | (B) create formal and informal digital communications using appropriate digital etiquette | Digital Citizenship |
| | (C) collaborate on digital platforms such as recording a video conference presentation using appropriate formal and informal digital etiquette | Digital Citizenship |
| (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 | Digital Citizenship Cybersecurity |
| | (B) discuss and define intellectual property and associated terms, including copyright law, permission, fair use, creative commons, open source, and public domain | Intellectual Property |
| | (C) create citations and cite sources for a variety of digital forms of intellectual property | Intellectual Property |
| | (D) describe how information can be exaggerated or misrepresented online | Intellectual Property |
| (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 | Cybersecurity |
| | (B) identify various methods of cyberbullying such as harassment, impersonation, and cyberstalking | Cybersecurity |
| (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 | Technology & Trends Data & Trends Digital Citizenship Cybersecurity Intellectual Property <i>Pixel Images, CodeX & Images CodeX & Audio, CodeX & Line Art</i> |
| (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 | Mission 2, Mission 3 Mission 4, Remix 1 Mission 5, Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 Technology & Trends Data & Trends Files & File Management Digital Citizenship, Cybersecurity Intellectual Property <i>Mission 9, Remix 4, Mission 10 Mission 11, Mission 12, Remix 5</i> |
| | (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 | Mission 2 Files & File Management <i>Pixel Images, CodeX & Images</i> |

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| (C) select and use the appropriate platform and tools to complete a specific task or project | Mission 1 Technology & Trends Data & Trends, Digital Citizenship Cybersecurity Intellectual Property <i>Remix 5, Pixel Images</i> <i>CodeX & Images, CodeX & Audio</i> <i>CodeX & Line Art</i> | |
| (D) demonstrate improvement in speed and accuracy as measured by words per minute when applying correct keyboarding techniques | Data & Trends | |
| (E) select and use appropriate shortcuts within applications | Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 <i>Mission 9, Remix 4, Mission 10</i> <i>Mission 11, Mission 12, Remix 5</i> <i>Pixel Images, CodeX & Images</i> <i>CodeX & Audio, CodeX & Line Art</i> | |
| (F) use help sources to research application features and solve software issues | Mission 1, Mission 2, Mission 4 Remix 1, Mission 5 Mission 6, Remix 2 Mission 7, Mission 8, Remix 3 Technology & Trends Data & Trends <i>Mission 9, Remix 4, Mission 10</i> <i>Mission 11, Mission 12, Remix 5</i> <i>Pixel Images, CodeX & Images</i> <i>CodeX & Audio, CodeX & Line Ar</i> | |
| (G) identify types of local and remote data storage such as cloud architecture or local server | Files & File Management | |
| (H) use productivity tools found in spreadsheet, word processing, and publication applications to create digital artifacts such as reports, graphs, and charts | Mission 1 What is Computer Science? Technology & Trends Data & Trends Digital Citizenship, Cybersecurity Intellectual Property | |