NEW YORK STATE EDUCATION DEPARTMENT
MIDDLE LEVEL CAREER AND TECHNICAL EDUCATION

COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

COMPUTATIONAL THINKING CONTENT MODULE

UPDATED MAY 2023

MODULE DESCRIPTION

Computational thinking involves posing and solving problems in ways that can be carried out by a computer. It includes concepts, such as algorithms and variables, and practices, such as abstraction, decomposition, data analysis, modeling, and simulation. These are vital not only to the d

2. MODELING AND VISUALIZATION

c) Assess personal employability skills for careers in computing and evaluate personal suitability for such careers

ILLUSTRATIVE ACTIVITIES BY THEME MODULE

These activities are intended to serve as examples of how the content in this module could be tied to each of the six middle level themes.

CAREER AND COMMUNITY OPPORTUNITIES .4R c)t--(ti)

COMMON CAREER TECHNICAL CORE STANDARDS

CAREER READY PRACTICES

1. Act as a responsible and contributing citizen and employee
2. Apply appropriate academic and technical skills
3. Attend to personal health and financial well-being
4. Communicate clearly and effectively with reason
5. Consider the environmental, social, and economic impacts of decisions
6. Demonstrate creativity and innovation
7. Employ valid and reliable research strategies
8. Utilize critical thinking to make sense of problems and persevere in solving them
9. Model integrity, ethical leadership, and effective management

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- 7-8.CT.7: Design or remix a program that uses a variable to maintain the current value of a key piece of information.
- 4-6.CT.8: Develop algorithms or programs that use repetition and conditionals for creative expression or to solve a problem.
- 7-8.CT.8: Develop or remix a program that effectively combines one or more control structures for creative expression or to solve a problem.
- 4-6.CT.9: Explain each step of an algorithm or program that includes repetition and conditionals for the purposes of debugging.
- 7-8.CT.9: Read and interpret code to predict the outcome of various programs that involve conditionals and repetition for the purposes of debugging.
- 4-6.CT.10: Describe the steps taken and choices made to design and develop a solution using an iterative design process.
- 7-8.CT.10: Document the iterative design process of developing a computational artifact that incorporates user feedback and preferences.

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NYS COMPUTER SCIENCE AND DIGITAL FLUENCY (CS&DF) LEARNING STANDARDS

http://www.nysed.gov/curriculum-instruction/computer-science-and-digital-fluency-learning-standards