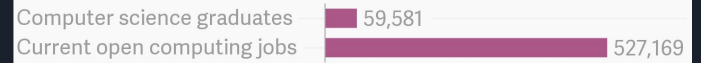


Computational Thinking

2015 college computer science graduates v. open computing jobs



ATLAS | Data: National Center for Education Statistics, Code.org

Objectives

- Define computational thinking and its component skills (i.e., decomposition, pattern recognition, abstraction, algorithm design).
- Apply computational thinking to solve a problem.

What is Computational Thinking?

What is Computational Thinking

- “Computational thinking refers to the thought processes involved in expressing solutions as computational steps or algorithms that can be carried out by a computer” (Cuny, Snyder, & Wing, 2010; Aho, 2011; Lee, 2016).
- “Understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.” (ISTE International Standards)

Which of the following is a component skill of CT?

Computer Programming

Algorithm Design

Obstruction

Composition

Component Skills of CT

- **Decomposition**: Breaking down data, processes, or problems into smaller, manageable parts
- **Pattern Recognition**: Observing patterns, trends, and regularities in data
- **Abstraction**: Identifying the general principles that generate these patterns
- **Algorithm Design**: Developing the step by step instructions for solving this and similar problems
- **Evaluation**: Determining if your solution is a good one.






Practice Instructions

Your paper presents a scenario & questions intended to guide you through a CT process.

1. Divide into 5 Groups
2. Read through the scenario aloud and, as a group, answer the questions that guide you through the CT process.
3. You have approximately 10 minutes.



And oh yea...

Appoint a Spokesperson



Questions?

enoch.hunsaker@gmail.com