

Activity 1: Important Proficiencies in the CT Domain

This activity is designed to give you an opportunity to rate the importance of a selection of Computational Thinking proficiencies taken from the 2011 CSTA standards, Level 3A (*Computer Science in the Modern World, grades 9-10*).

1. Please use the response scale below to indicate the level of importance you assign to each statement for students in grades 9-10.

The 9th or 10th grade student will be able to...

Use predefined functions and parameters, classes and methods to divide a complex problem into simpler parts.

Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Describe a software development process used to solve software problems (e.g., design, coding, testing, verification).

Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Explain how sequence, selection, iteration, and recursion are building blocks of algorithms.

Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Compare techniques for analyzing massive data collections.

Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Describe the relationship between binary and hexadecimal representations.

Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Analyze the representation and trade-offs among various forms of digital information.

Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Describe how various types of data are stored in a computer system.

Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Use modeling and simulation to represent and understand natural phenomena.

Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

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Discuss the value of abstraction to manage problem complexity.

- Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Describe the concept of parallel processing as a strategy to solve large problems.

- Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

Describe how computation shares features with art and music by translating human intention into an artifact.

- Extremely Important Very Important Somewhat Important Not Very Important Not At All Important

2. If you believe there are knowledge and/or skills that 9th – 10th grade students should know or be able to do, but were not included in this survey, please write those statements in the space below.

3. Please tell us a little bit about yourself so we can investigate the extent to which responses vary by respondent background.

Are you:

- Male Female

How many years of experience do you have in computer science as an educator, researcher, policy maker, or other interested party?

- I don't work in computer science 1 – 3 years 4 – 7 years 8 – 10 years More than 10 years

How would you characterize your current profession?

- Postsecondary Education (College/University) Corporate Not-for-Profit Secondary Education (K-12) Not At All Important

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Activity 2: Identifying & Aligning Evidence with Focal CT Proficiencies

Activity 3: Tasks/Situations for Eliciting Evidence of Focal CT Proficiencies