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
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
Activity 2: Identifying & Aligning Evidence with Focal CT Proficiencies

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