

IOWA STATE UNIVERSITY

Department of Computer Science

K-12 Computational Thinking Competition - April 16th, 2016



Computational Thinking

Definition of Computational Thinking: Computational thinking means thinking like a computer scientist. To do that in this competition, you will need to solve the problem posed by your project in the context of a computational model.

Computational Model

Definition of a Computational Model (note that the use of a computer is not required.)

- o There must be an instruction set.
- o The Computational Model must be able to store data and have the ability to support abstraction.
- o The instruction set must be able to operate on the data.
- o The Computational Model must support input (a way to get data into the model) and output (results of the solution need to be visible to the judges).

Project Choice

The project choice depends on the interests of the students involved. The project could come from any school subject, but projects are probably easier to find in science or mathematics classes. The thing to look for in choosing a project for this competition is, **does the project pose a problem (task) that needs to be solved?**

Competition Rules and Judging Rubric

Each entry (individual or team) must have a project that requires a solution and the solution must be solved using computational thinking. Each student will present their project to a team of judges.

Judges will rate the entries on:

- o difficulty of the problem posed by the project
- o cleverness of the solution to the problem
- o appropriateness and cleverness of the computational model
- o ability of the student(s) to explain how the project works

The competition will be divided by age divisions. These will be announced in fall 2015. Each division will be awarded 1st, 2nd and 3rd prizes. Prizes include laptops, netbooks, tablets, and other tech gadgets.

Find out more at <https://www.cs.iastate.edu/outreach>



www.scratch.mit.edu

Sign up for a Computational Thinking Workshop -
Saturdays : October 17th, 2015, November 7th, 2015,
January 16th 2016, February 6th, 2016,
March 5th, 2016