Teaching Computer Science Principles (CSP) Workshop

Workshop #1: Teaching Computer Science Principles Jeran Ott Matthew Schwartz	Workshop Location: Fresno County Superintendent of Schools 1111 Van Ness Avenue, Fresno California 93721 Contact: Marlena Hebern mhebern@fcoe.org Or Byanca Arredondo 265-3898 x4159

Workshop description

Computer Science Principles introduces students to the foundational concepts of computer science and challenges them to explore how computing and technology can impact the world. More than a traditional introduction to programming, it is a rigorous, engaging, and approachable course that explores many of the foundational ideas of computing so all students understand how these concepts are transforming the world we live in. Computer Science Principles can be taught as an AP or non-AP course - no prerequisites required for students or for teachers new to computer science and is a course designed to prepare students (and teachers) who are new to computer science for the AP CS Principles exam. The course covers many topics including the Internet, Big Data and Privacy, and Programming and Algorithms.

In this workshop series of 5 summer days (31.5 hours) and 4 follow up days through the year (28 hours) and homework (.5 hours), you will learn pedagogy strategies to teach computer science using the online units, unplugged activities, online dashboard, and computer science basics so that you can implement the CSP curriculum in your classroom and teach the new California Computer Science (CS) standards.

Primary Outcomes

1. Identify basic elements of computer science for students in grades 6-9
2. Gain content knowledge of the California State adopted computer science standards
3. Prepare and teach computer science using online materials by Code.org and current research-based pedagogical practices
4. Prepare and teach computer science concepts using unplugged activities

Materials

A CSP teaching manual, an online collection of related resources, and an online Code.org dashboard, teacher forum.

Workshop requirements

- Attend all 8 full class sessions
- In class assignments include participation in all class discussions and class assignments.
- The Instructor will evaluate the participants understanding of course objectives through evaluation of final projects: Presentations of the lessons, and reflections of implemention strategies.
- A score of 80% - 100% will equal a final grade of Credit. A score below 80% will result in a final grade of no credit.
- Homework: (approx .5 hours to be spread over the course) Implementation and reflections

Evaluation Criteria for Credit *(Credit/ no credit)*

Grading Criteria: Required: attendance and class participation, a passing grade on classroom assignments including instructor appraisal and/or assessment of student performance

Schedule of Topics and Assignments

Class Schedule Days 1-5:

In Class Assignemtns Include: Participation in class discussions and content instruction.

- Plan and teach:
  - A CS concept-based hands-on unplugged activity based on computer science standards and concepts.
    - The Internet and Digital Information, and Algorithms and Programming
- Create an implementation plan for teaching CSP
- Develop strategies for teaching CSP
- Create a recruiting strategies plan
- Develop equity strategies for engaging all students

Class Schedule Days 4-7:

In Class Assignemtns Include: Participation in class discussions and content instruction.

Develop implementation strategies for CSP

- Develop strategies for classroom practices in teaching computer science
- Develop strategies for addressing roadblocks to implementation
- Develop plans for teaching:
  - Big Data and Privacy, Impact of Computing Innovations, Building Apps, Applications from Ideas, and Making Data-backed Apps

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