Computer Science Principles

Mehlville School District
STEM
Grades 9 - 12, Duration 1 Year, 1 Credit

Rationale

It is imperative to increase our national talent pool in computer science and software engineering. The student will build interest and engage in computer science, preparing them for great career opportunities that require computational thinking.

Course Description

The student works in teams to develop computational thinking and solve problems. The course covers the College Board's new CS Principles framework. This course aims to develop computational thinking, to generate excitement about the field of computing and to introduce computational tools that foster creativity.

Prerequisites

None

Course Objectives

1. The student will read and modify code provided from other sources and create original code. (A+ Reading)
2. The student will research career paths tied to computing. (A+ Research)
3. The student will prepare a presentation that demonstrates their understanding of the Internet as a set of computers exchanging bits and the implications of these exchanges. (A+ Speaking)
4. The student will demonstrate a variety of data visualization techniques and work to recognize opportunities to apply algorithmic thinking and automation when considering questions that have answers embedded in data.
5. The student will implement robotic behaviors using physical components with human input.
6. The student will create a report that identifies problems and questions that can be addressed with computer simulation, incorporating agent-based modeling. (A+ Writing)

BOE 11/10/16