Alaska Computer Science Standards: Connections to other standards

Computer science is largely based on the process of computational thinking—understanding what it is, how to develop it, and how to apply it. The new standards incorporate elements of critical thinking, problem solving, and perseverance in support of building students' abilities. There are clear links between computer science, mathematics, and science in the application of computational thinking, as well as connections to digital literacy and the language arts. A cross-disciplinary approach to computer science instruction can help teachers foster a classroom culture where students think and reason together, connecting around the subject matter and core ideas.

Standards for Math

Computer science requires strong quantitative skills, and as such there are strong parallels between the Alaska Computer Science Standards and the Alaska Standards for Mathematical Practice. These are habits of mind designed to help student solve real-world problems outside the traditional bounds of either computer science or mathematics. Developing students' abilities to think analytically and logically helps prepare them for college and a multitude of careers.

Standards for Science

Computer science is often central to scientific research—whether developing algorithms to discover new stars, analyzing huge data sets, or coding the operation of precise instrumentation. Whole disciplines of science rely on computer modeling to predict patterns or to extrapolate data. The engineering and medical fields are increasingly reliant on technology to create faster, smarter, and more user-friendly solutions to complex problems. The Alaska Computer Science Standards are most easily integrated with the Science Standards for Alaska through the Science and Engineering Practices (SEPs).

Standards for Digital Literacy

There is a great deal of overlap between digital literacy and computer science. Concepts found in the Alaska Digital Literacy Standards such as design, computational thinking, communication, and citizenship area all foundational to the processes and core knowledge of the Alaska Computer Science Standards. These standards sets could be taught concurrently, or woven through other subject areas.

Standards for English Language Arts

Just like the language arts, computer science requires the ability to construct a sound argument and communicate it effectively. Reading and writing make up a large part of what computer scientists and engineers do, and literacy is essential to good scientific practice.