IOWA'S K-12 COMPUTER SCIENCE PLAN
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Building on Iowa's vision for computer science education

All Iowa students deserve a high-quality computer science education to prepare them for the jobs of today and tomorrow as technology continually transforms the world of work. Iowa's first statewide K-12 Computer Science Plan seeks to position children for professional and personal success by laying a solid foundation of computer science skills in elementary school and providing more opportunities to learn computer science in middle and high school. This plan is called for by House File 2629—proposed by Gov. Kim Reynolds and passed unanimously by the 2020 Legislature—which, for the first time, requires schools to teach computer science using the following directives:

- High schools must offer at least a one-half unit computer science course by July 1, 2022.

- Elementary and middle schools must provide high-quality computer science instruction in at least one grade level each by July 1, 2023.

- School districts and accredited nonpublic schools will develop and implement their own local K-12 computer science plans by July 1, 2022.

Iowa's statewide K-12 Computer Science plan, developed by the Iowa Department of Education (the Department), is significantly shaped by recommendations from a one-time Computer Science Work Group established by House File 2629. The work group's July 1, 2021 report prioritizes (1) creating an ongoing Computer Science Work Group to guarantee teachers have access to high-quality computer science professional development so all students benefit; (2) bridging computer science gaps in schools and communities by providing more computer science education for students lacking a strong minimum level; and (3) providing students with work-based learning opportunities that integrate computer science.

All this aligns with the Future Ready Iowa goal of 70% of the state's workforce having education or training beyond high school by 2025. Iowa's economic competitiveness will depend on the innovation that computer science drives as well as the problem-solving and collaboration it fosters. With just 10.1 percent of Iowa's public high school Class of 2021 taking a high-quality computer science course, Iowa's new law will ensure more students are future ready for the computer science revolution reshaping the world far beyond schools. This plan is intended to put in place the supports that schools and communities need to realize that vision.

Next steps to enhance computer science education 2022-2026

» To guarantee teachers have access to high-quality computer science professional development and training, the Iowa Department (the Department) of Education will:

1. Establish an ongoing Computer Science Work Group with representatives from the nine Area Education Agencies and other organizations to develop an annual plan to deliver cohesive, high-quality computer science professional development to educators statewide. Training should include instructional aides, teachers of the visually impaired and interpreters for the deaf and hard of hearing.

2. Explore long-term ideas with the Iowa Board of Educational Examiners and Iowa's computer science educator preparation programs to improve preparatory pathways and licensures for computer science educators.

3. Continue to identify, recommend, develop, schedule, fund and deliver in person computer science educator development and training opportunities, including incorporating knowledge of accessible, approachable computer science curricula that meet the needs of students with diverse backgrounds, including students with disabilities.

4. Recommend increasing the annual state appropriation for computer science funds to prepare more current teachers to teach computer science, expand State sponsored computer science initiatives and encourage innovation in computer science education through grant funding opportunities.

» To bridge gaps for students lacking a strong minimum level of computer science education the Department will:

1. Define a "strong minimum level" of computer science education. At the same time, encourage K-8 schools to provide instruction in every grade level every year, including integration into other subjects, and high schools to offer at least one computer science career pathway with three sequential courses.

2. Continue to research and develop courses, course pathways and other opportunities to prepare students for careers and post-secondary education in computer science and computing technology.

3. Continue to expand computer science education content resources available to educators and families through Iowa e-Learning Central.

4. Provide resources to help schools design, and routinely update, their local K-12 computer science plans.

5. Further develop opportunities to embed work-based learning experiences in computer science courses using the Iowa Work-Based Learning Guide to support integration.

» To promote computer science outreach and promotion the Department will:

1. Facilitate, as funding is available, an annual Iowa Computer Science Educator of the Year Award program.

2. Collaborate with partners to establish an annual Iowa Tech Jam with public-private support.

3. Organize a week-long computer science celebration each year, with events scheduled across the state in schools and communities.

4. Research best practices around the country to explore, if appropriate, using a computer science flex credit to allow credit to count towards existing math, science and/or career focus credit requirements as well as incorporation into graduation requirements.

» To ensure continual modernization of K-12 computer science education, the Department will:

1. Form and convene a computer science standards revision committee with the purpose of reviewing, and, if necessary, revising the Iowa Computer Science Education Standards.

2. Lead long-term strategic planning for computer science education beyond 2026.