The Connected Landscape

Student learning is most powerful when multiple areas converge to form a coherent, meaningful and relevant experience. In the section that follows, we will explain how the ISTE Standards for Educators: Computational Thinking Competencies fit in the larger landscape of standards and suggestions for their use.

ISTE—The Big Picture

All of the principles of great education still hold true when incorporating computer science and/or computational thinking into your curriculum. The CT Competencies were designed to enhance the ISTE Standards for Educators (iste.org/standards/for-educators) and deepen student learning across academic areas.

To understand how these two sets of educator standards might work together, let's dive into a couple of specific recommendations.

The first ISTE Standard for Educators indicator (1a) is:

> **Set professional learning goals to explore and apply pedagogical approaches made possible by technology and reflect on their effectiveness.**

and you can imagine that might pair well with 1b. in the CT Competency:

> **Develop a foundational knowledge of pedagogies and assessment strategies that support the development of deep and aligned student learning of CS concepts and computational thinking practices.**

The two can definitely be done separately, but think of how much more powerful they become together!

Similarly, ISTE Standards for Educators indicator 3a:

> **Create experiences for learners to make positive, socially responsible contributions and exhibit empathetic behavior online that build relationships and community.**

could work very well with CT Competency 6f:

> **Facilitate critical examination of implicit bias and stereotyping in interactions, product design and development methods.**

Can you imagine the kinds of changemakers that our classrooms would foster if we intentionally worked to observe the inequities around us and helped students do something about it?

These standards are meant to be ingredients in your own recipe algorithm, allowing you to craft experiences for your classroom that create learners who are aware and empowered to use the power of computing for problem-solving, creative expression and more! Take a quick look at the two sets of standards yourself. Can you make any pairings that excite you? Check out the full set of ISTE Standards for Educators and try to create your own custom blends!

ISTE Standards for Educators

The ISTE Standards for Educators are your road map to helping students become empowered learners. These standards will deepen your practice, promote collaboration with peers, challenge you to rethink traditional approaches and prepare students to drive their own learning.

Empowered Professional

1. Learner

Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. Educators:

a. Set professional learning goals to explore and apply pedagogical approaches made possible by technology and reflect on their effectiveness.

b. Pursue professional interests by creating and actively participating in local and global learning networks.

c. Stay current with research that supports improved student learning outcomes, including findings from the learning sciences.

2. Leader

Educators seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning. Educators:

a. Shape, advance and accelerate a shared vision for empowered learning with technology by engaging with education stakeholders.

b. Advocate for equitable access to educational technology, digital content and learning opportunities to meet the diverse needs of all students.

c. Model for colleagues the identification, exploration, evaluation, curation and adoption of new digital resources and tools for learning.

3. Citizen

Educators inspire students to positively contribute to and responsibly participate in the digital world. Educators:

a. Create experiences for learners to make positive, socially responsible contributions and exhibit empathetic behavior online that build relationships and community.

b. Establish a learning culture that promotes curiosity and critical examination of online resources and fosters digital literacy and media fluency.

c. Mentor students in safe, legal and ethical practices with digital tools and the protection of intellectual rights and property.

d. Model and promote management of personal data and digital identity and protect student data privacy.

4. Collaborator

Educators dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems. Educators:

a. Dedicate planning time to collaborate with colleagues to create authentic learning experiences that leverage technology.

b. Collaborate and learn with students to discover and use new digital resources and diagnose and troubleshoot technology issues.

c. Use collaborative tools to expand students' authentic, real-world learning experiences by engaging virtually with experts, teams and students, locally and globally.

d. Demonstrate cultural competency when communicating with students, parents and colleagues and interact with them as collaborators in student learning.

5. Designer

Educators design authentic, learner-driven activities and environments that recognize and accommodate learner variability. Educators:

a. Use technology to create, adapt and personalize learning experiences that foster independent learning and accommodate learner differences and needs.

b. Design authentic learning activities that align with content area standards and use digital tools and resources to maximize active, deep learning.

c. Explore and apply instructional design principles to create innovative digital learning environments that engage and support learning.

6. Facilitator

Educators facilitate learning with technology to support student achievement of the 2016 ISTE Standards for Students. Educators:

a. Foster a culture where students take ownership of their learning goals and outcomes in both independent and group settings.

b. Manage the use of technology and student learning strategies in digital platforms, virtual environments, hands-on makerspaces or in the field.

c. Create learning opportunities that challenge students to use a design process and computational thinking to innovate and solve problems.

d. Model and nurture creativity and creative expression to communicate ideas, knowledge or connections.

7. Analyst

Educators understand and use data to drive their instruction and support students in achieving their learning goals. Educators:

a. Provide alternative ways for students to demonstrate competency and reflect on their learning using technology.

b. Use technology to design and implement a variety of formative and summative assessments that accommodate learner needs, provide timely feedback to students and inform instruction.

c. Use assessment data to guide progress and communicate with students, parents and education stakeholders to build student self-direction.
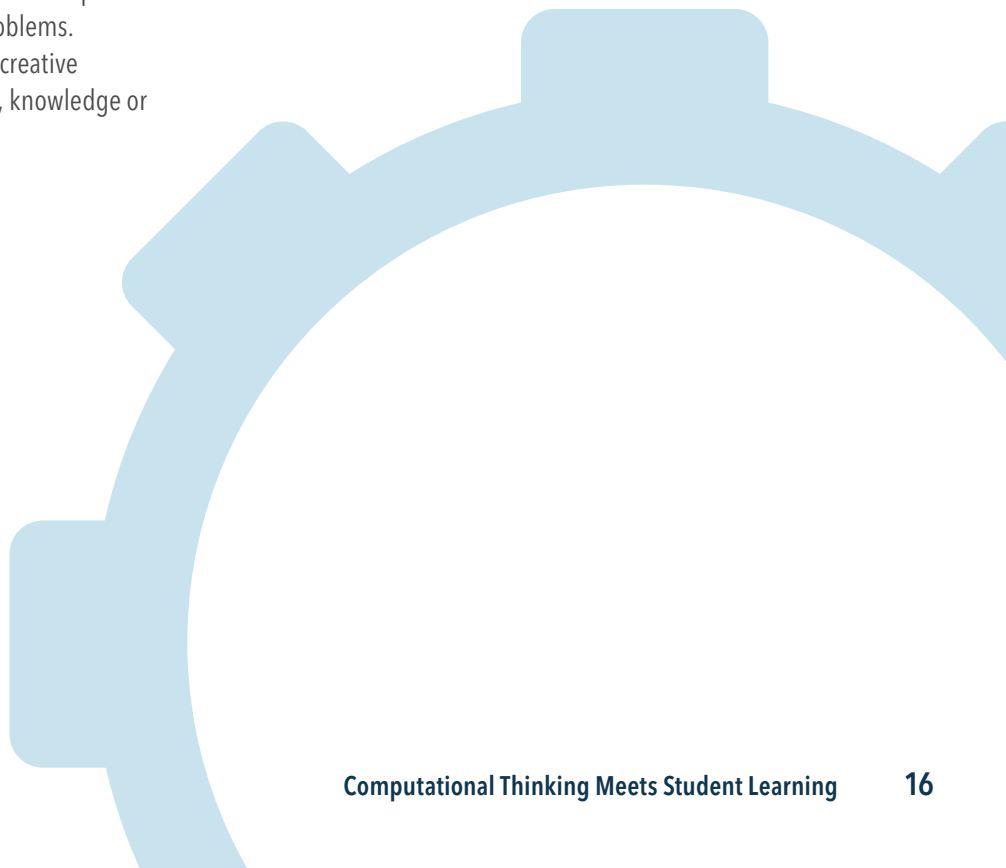
Other Digital Age Standards

ISTE recognizes that we are not alone in the pursuit of formative CS and CT opportunities that are both engaging and accessible for all students. Our vision has been made stronger because of deep collaboration with organizations like CSTA, CSforALL and members of the K–12 CS Framework Committee, which share our belief that a strong foundation in CS and CT will empower students to succeed in all academic areas.

How These Resources Relate

The K–12 CS Framework, the CSTA Standards (for students) and the ISTE Standards for Educators: Computational Thinking Competencies (for teachers) work together as part of an ecosystem of resources that supports students, educators and leaders to craft rigorous and equitable CS learning opportunities:

- **The CS K–12 Framework** is a high-level guide for states, districts and organizations that represents the essential ideas in computer science for all students. This document was written in collaboration with many leading experts in CS/CT/technology education and was meant to provide an organizing structure and guidance for implementing computer science education.

- **The CSTA K–12 Computer Science Standards** are specific goals, grouped by grade band, that articulate in detail a core set of learning objectives for students to provide the foundation for a complete computer science curriculum and its implementation at the K–12 level.

- **The CT Competencies** are core practices for teachers of all grades that outline the knowledge, skills and dispositions for integrating computational thinking across content areas, and empower students to innovate and solve problems through computing. They were designed to ensure students receive a holistic, equitable CS education.