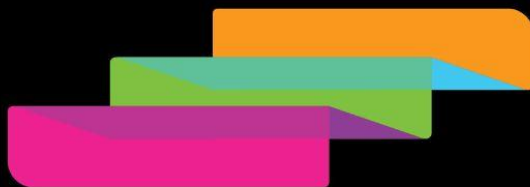


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2026 CSTA PK-12
COMPUTER SCIENCE STANDARDS
Implementation Guidance
for Curriculum & PD Providers



The 2026 CSTA PK-12 CS Standards

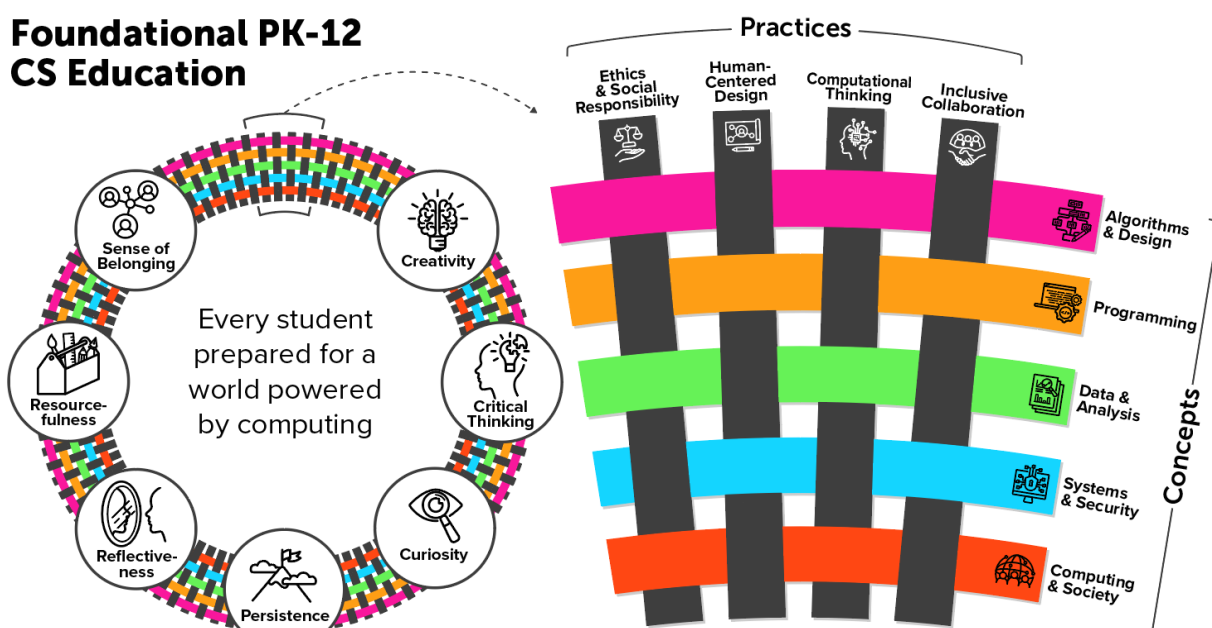
The CSTA Standards define the essential knowledge, skills, and dispositions students need to be prepared for a world powered by computing. They articulate coherent **learning progressions from pre-kindergarten through grade 12**, forming the foundation for rigorous and inclusive computer science education across diverse educational contexts. Written **for educators by educators**, the Standards are grounded in research and informed by classroom practice. They are designed to support **state and local adaptation** while promoting instructional coherence across systems, programs, and learning experiences.

Structure of the Standards

The revised Standards are organized around three interconnected elements: **concepts** (core knowledge), **practices** (crosscutting skills), and **dispositions** (habits of mind). Together, they reflect that computer science is not only about how technologies work, but also about how people design, build, and use computing to solve problems across disciplines.

The five concepts (Algorithms & Design, Programming, Data & Analysis, Systems & Security, and Computing & Society) are woven together with four categories of practices (Ethics & Social Responsibility, Human-Centered Design, Computational Thinking, and Inclusive Collaboration), reflecting that concepts and practices are integrated rather than taught in isolation. Surrounding this work are seven dispositions (creativity, critical thinking, curiosity, persistence, reflectiveness, resourcefulness, and sense of belonging) that support every student in becoming prepared for a world powered by computing.

Foundational PK-12 CS Education



Key Features of the Standards

1. **Grounded in core values:** The Standards are equity-centered, community-generated, future-oriented, research-based, and flexible, designed to support multiple instructional approaches, including stand-alone and interdisciplinary learning, while connecting all students to postsecondary, career, and civic pathways.
2. **Vertically aligned by grade:** The Standards build coherent learning progressions, grade-level specific in elementary (PK–5) and organized by grade bands in middle school (grades 6–8) and high school (grades 9–12).
3. **AI, ethics, and other emerging priorities:** AI is a central focus, integrated across the Standards rather than taught in isolation. A strong emphasis on ethics and social responsibility ensures students engage with technology responsibly. Other elevated priorities include inclusive collaboration, human-centered design, career exploration, and the history of computing.
4. **Enhanced implementation supports:** Each standard is paired with implementation examples, interdisciplinary connections, and curated resources, accessible through a new interactive web display that lets users explore, customize, and download standards.
5. **High School Specialty Standards:** Once students have developed a strong foundation, Specialty Standards offer two levels of advanced, domain-specific study across six areas: Artificial Intelligence, Cybersecurity, Data Science, Game Development, Physical Computing, and Software Development. Additionally, X+CS standards guide the integration of foundational CS content into non-CS subjects such as journalism and biology.



Guidance for Curriculum & PD Providers

Curriculum developers and professional development (PD) providers play a key role in translating the 2026 CSTA PK–12 Computer Science Standards into classroom experiences and educator learning. High-quality implementation depends on **preserving conceptual coherence across grade levels**, helping educators understand the intent behind the Standards, and designing materials and learning experiences that are **flexible across contexts, classrooms, and learner needs**.

Curriculum and PD should support educators in understanding the concepts, practices, and dispositions woven into each standard and how learning progresses across levels. They should also ensure that instructional materials promote meaningful engagement with foundational CS ideas rather than focusing solely on tools or platforms.

Implementation Assumptions

The standards writing team used the following assumptions of instructional time to guide decisions about scope, breadth, and depth of the Foundational Standards:

- PK–5: 20 to 40 hours per year (equivalent to 30 to 60 minutes per week)
- Grades 6–8 and 9–12: approximately the equivalent of a year-long course per grade band

These learning opportunities may occur through both dedicated CS courses and thoughtful integration across subject areas. (See implementation guidance by grade band for more details.)

Provider Actions

1. Design Curriculum That Preserves Standards Integrity

Curriculum providers translate the Standards into the materials students and teachers actually use. The choices made in scope, sequencing, and emphasis shape whether implementation remains coherent across districts and grade bands.

- **Map curriculum directly to standards, including boundary statements**, to ensure the scope reflects what students are expected to know and do at each grade level.
- **Preserve the integration of concepts, practices, and dispositions** so that materials develop what students learn and how they engage with CS.
- **Support vertical alignment across grade bands**, to ensure curriculum builds intentionally on prior knowledge while minimizing unnecessary repetition or gaps.
- **Address AI, ethics, societal impacts, and emerging topics** as integrated content, consistent with how the Standards embed these priorities.
- **Pursue formal alignment review** through the CSTA Curriculum Alignment Review process to verify fidelity to the Standards. Benefits include earning the CSTA Seal of Alignment, inclusion in CSTA's curriculum directory, and having standard-specific resources featured in the Standards interactive web display.

2. Design Materials That Are Adaptable Across Contexts

The Standards are designed for flexible implementation across diverse school contexts. Curriculum should support that flexibility rather than assume a single delivery model.

- **Use the 2017 → 2026 Standards Crosswalk** to identify where existing curriculum maps to the revised Standards, where content needs to be updated or added, and where previous coverage is now organized differently.
- **Include interdisciplinary connections** that support integration with math, science, ELA, and other subjects, drawing on the connections surfaced in the interactive web display.
- **Provide adaptation guidance** so districts and teachers can adjust materials for local context, available technology, and student populations without losing standards alignment.
- **Provide resource libraries, exemplars, and ready-to-use materials** that reduce teachers' planning burden, especially for educators with heavy course loads or limited CS background.

3. Design PD That Builds Educator Capacity

Professional learning is a critical bridge, transforming standards and curriculum into effective classroom practice. PD providers should design experiences that build both CS content knowledge and pedagogical capacity.

- **Ground PD in both the Standards structure and evidence-based CS pedagogies**, helping educators interpret concepts, practices, and dispositions while building instructional practice through research-supported approaches (e.g., PRIMM, pair programming, worked examples).
- **Align PD to the CSTA Standards for CS Teachers**, ensuring programs support teacher growth across content knowledge, pedagogy, equity, instructional design, and professional practice.
- **Differentiate PD by role and starting point**, including new-to-CS teachers, experienced CS teachers, content-area teachers integrating CS, paraprofessionals, and administrators.
- **Build educator capacity in AI, ethics, and emerging topics** that may be unfamiliar to many educators.
- **Design PD as sequenced, sustained learning** rather than one-time training, using cycles of practice, reflection, and feedback and building communities of practice where teachers can collaborate and share expertise beyond formal PD.

Reflection Questions

- How does your curriculum or PD preserve the integration of concepts, practices, and dispositions across grade levels?
- How do you support adaptation across diverse contexts without losing fidelity to the Standards?
- How does your PD build educator capacity for AI, ethics, and other emerging priorities?
- What evidence do you provide districts to support informed adoption decisions?

4. Support Equitable and Coherent Implementation

Curriculum and PD providers shape what equitable access looks like in practice. Design choices determine whether materials meaningfully reach all students.

- **Ensure cultural relevance and representation** in examples, contexts, and learner identities portrayed in materials.
- **Provide language supports and varied entry points** so multilingual learners and students with diverse prior experiences, needs, and/or abilities can engage meaningfully.
- **Scaffold learning to build context, knowledge, and skill without reducing the rigor of the Standards**, using strategies such as worked examples, guided practice, and progressive complexity to make grade-level content accessible to all learners.
- **Field-test materials and PD with diverse educators, students, and settings**, especially those historically underrepresented in CS, so design choices reflect real learner and classroom variability rather than assumed norms.

Next Steps and Partnership

Implementing the revised CSTA Standards is a multi-year, multi-partner effort. CSTA welcomes the opportunity to work alongside curriculum and PD providers to support alignment, build capacity, and ensure that materials and learning experiences reflect the intent of the Standards.

Tools to Support Implementation

- [2017 → 2026 Crosswalk](#) – Compare the revised standards with previous versions.
- [Progressions Charts](#) – Visualize how concepts develop across grade levels.
- [Interactive Web Display](#) – Search, filter, explore progressions, and access supports (e.g., interdisciplinary connections, example lesson plans) with customizable, downloadable views.
- [Implementation Guidance](#) – Resources for flexible implementation at each grade band.
- [Curriculum Validation](#) – CSTA's Curriculum Alignment Review process uses trained CS educators to formally validate how closely a provider's curriculum aligns to the CSTA PK–12 CS Standards.
- [PD Accreditation](#) – CSTA curates quality professional learning opportunities for PK–12 CS teachers.
- [PD Provider Summits](#) – A community of practice specifically for CS curriculum and PD providers, focused on supporting teacher development with effective and inclusive teaching practices.
- [PD Alignment Rubrics](#) – These rubrics are designed to support PD providers as they self-assess how well their programs align with the CSTA Standards for CS Teachers and key principles of effective PD.

Need additional support? Contact: standards@csteachers.org

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