Computer Science in Algebra

Professional Learning Program overview

The Code.org Professional Learning Program

The Code.org Professional Learning Program supports teachers with diverse teaching backgrounds. Whether you are new to teaching computer science or not, the program is designed to promote growth in your teaching practice and provide space for teachers to become comfortable with the curricular materials and associated teaching strategies.

Professional Learning Program features:

- **One cohesive set of resources:** Our professional learning supports and curriculum empower teachers to deliver the course with confidence. Resources are available online and in person, which means you will have time to plan ahead with other teachers, and use our online materials for just-in-time support while you're in the classroom.
- **Teaching and learning in context:** Our workshop model enables participants to engage with the curriculum both as teachers and as learners. Through experiencing curriculum content as an active learner, participants get concrete experience with the computer science content while gaining important insight into the experiences their students will have during the academic year. By interacting with curriculum content as instructors, participants gain essential experience planning and delivering lessons.
- **A collaborative, participant-centric approach:** Workshop activities provide opportunities for teachers and facilitators to share their expertise from the field and collaborate on strategies to bring to the CS in Algebra classroom, giving participants a chance to learn from everyone in the room. Facilitators model pedagogical strategies, and participants share their own approaches by planning and delivering lessons. Rather than framing facilitators as gurus, these workshop leaders guide participants through the course preparation process as peers.

Computer Science in Algebra curriculum

The CS in Algebra curriculum consists of interdisciplinary modules that combine computer science concepts with Algebra, with a focus on designing Algebraic functions to solve word problems. These lesson sets are meant to be interwoven into pre-existing Algebra courses and will not add substantial instructional time. Each lesson is designed to be implemented in a standard 45-50 minute class period. These lessons are topical and should be used within the natural context of the class. All lessons are aligned with common state standards in math and the CSTA computer science standards.

Computer Science in Algebra Program Details

The Code.org CS in Algebra Professional Learning Program consists of 3 phases designed to support teachers throughout their first year of implementing the curriculum.

Phase 1: Online Introduction

Overview: The first phase of professional learning is a 2-hour online introduction that focuses on providing a foundational knowledge of the Code.org program, CS in Algebra course resources, our online learning platform and tools for the course.

Phase 2: In Person Workshop

Overview: The second phase of professional learning is a 2-day in-person workshop, providing the primary capacity building experience for teachers prior to their first year of instruction. Focusing on quality math and computer science pedagogy, teachers will gain practical experience teaching content through inquiry and equity. Participants will address common misconceptions about the intersection of math and computer science, interact hands-on with the core concepts of CS in Algebra, and role-play lessons using the Teacher/Learner/Observer Model. The workshop cultivates a professional learning community – an important teacher tool during
the first-year of teaching this course.

Phase 3: Follow Up Workshop

Overview: The third phase of professional learning is composed of an in-person workshop and online modules.
In-person workshop: This 1-day workshop will continue to build pedagogical strategies and help teachers prepare for the implementation of modules. Teachers will review best practices for integrating computer science into algebra classes.
Online modules: These modules allow you to practice with the concepts that your students will be learning, while picking up pedagogical tips and best practices along the way.

Program commitments

Phase 1: Online Introduction	Phase 2: In Person Workshop	Phase 3: Follow Up Workshop
• 2 hours online, self-paced	• 2 days in-person (14 hours)	• 1 single-day in-person session (7 hours) • 2 hours online, self-paced

Helpful links

- CS in Algebra Professional Learning Program: code.org/educate/professional-learning/cs-in-algebra
- CS in Algebra Curriculum: code.org/educate/algebra
- CS in Algebra Standards Alignment: code.org/curriculum/docs/algebra/standards
- CS in Algebra Curriculum Framework: code.org/curriculum/docs/algebra/framework