Code.org High School Professional Development

Phase 1: Online Preparation

- **Goals**: Establish an understanding of computer science in the context of everyday life. Prepare for in-person PD by considering current teaching practices.
- **Components**:
  - Pedagogy:
    - **Readings and videos (TED, popular media, etc.)**: Explore relevant reading (exciting articles related to computer science, journal and news articles and book excerpts, Stuck in the Shallow End) and videos to get teachers thinking about the outside knowledge that they already have and need to have to enrich their development as emerging computer science teachers.
    - **Reflection**: Guided reflection on the videos, readings, and current teaching practices. Participants will begin to understand their current pedagogical approaches and teaching strategies and how they are already experiencing the impact of computer science.
  - Synchronous and asynchronous communication: Online communication with facilitators and personal responses to readings.
- **Delivery**: Small, private online course (SPOC) that integrates the delivery of videos, readings, reflection questions, and other coursework that provides an introduction to computer science.

Phase 2: In-person Workshop

The structure of this phase will be the same for both course tracks: Exploring Computer Science (ECS) and Computer Science Principles (CSP). For a given district, the ECS and CSP workshops may happen during the same week. All classroom modeling activities will be course-specific, meaning that ECS and CSP groups will be split up for those activities. If a teacher plans to teach both ECS and CSP, she will need to complete this phase for both classes.

- **Goals**: Primary pedagogy capacity building. Teachers will form a local community that will continue working together during the academic year and in follow-up PD workshops.
- **Components**:
  - Classroom practice: Empower participants to understand the philosophy of curriculum and the corresponding pedagogy by experiencing it through the perspective of both the teacher and the learner.

        - **Modeling teaching**: Groups of participants plan and deliver lessons from the curriculum to the rest of the group. This modeling activity reflects the classroom experience.
        - **Debrief and discussion of teaching practice**: After each lesson, both the teachers and the learners reflect on and discuss the lesson. Facilitators help guide the debrief based on observations from the lesson delivery.
        - **Assessment**: Participants explore the ways to conduct assessment in ECS or CSP in a way that keeps with the course philosophy and matches district expectations.
    - Equity: Explore current and historical inequities in access to computer science knowledge, then identify and practice equitable practices embedded in the curricula.
        - **Read** Stuck in the Shallow End and other literature that demonstrates how issues surrounding equity play out in schools. This provides context to the larger, national climate around access to CS education.
        - **Experience issues** related to equitable practices first hand through model teaching activities-- both from the perspective of the teacher and the learner.
    - Inquiry: Participants will understand how inquiry is woven into daily lessons. The classroom modeling component provides space for participants to practice leading an inquiry based classroom as well as experience the environment as a student.
    - Reflection: Construct an understanding of the importance of reflection by experiencing a variety of ways to conduct reflection.
        - **Modeling activities**: Participants experience reflection throughout the classroom modeling activities, which include learner-focused reflection that is embedded into lessons and activities, as well as reflection that is tied to teaching the material.
        - **Equity**: Participants will reflect heavily on issues related to access and equity. These structured opportunities for reflection will be tied to the readings as well as the classroom modeling activities.
    - Community building: Create space for continued growth of the learning community by spending time in a trusting space that encourages risk taking, honesty, and openness. In the out years, the new cohort of teachers will have an opportunity to meet with and talk to the existing ECS and CSP teachers.
- **Delivery**: In-person workshop.

Phase 3: Academic year/job-embedded PD

- **Goals**: Continued content and capacity building for teachers implementing the course(s). Activities and discussion will capitalize on the fact that this phase is job-embedded, and teachers will engage in real-time implementation of strategies and ideas.

- Components:
    - CS content: Ongoing experience with CS content related to the activities and curriculum being taught. Content is presented in many forms (videos, readings, interactive websites, unplugged activities, etc.) to meet the needs of diverse learners and model for the teacher how to provide accessible content support materials. This content will be grouped together by themes explored in each unit of ECS and CSP.
        - Videos: Teachers will expand their own understanding of material by using the CS content videos developed by Code.org for use in the classroom.
        - Readings and other media: Relevant and current reading (journal and news articles and book excerpts), videos like TED talks, websites and online resources, and other activities related to applications of CS content highlighted in the Code.org videos and in the curriculum.
        - Reflection: guided reflection related to understanding of the presented CS content and ways to engage with that content in the classroom.
    - Pedagogy: Structured opportunities to explore teaching practice based around the modeling introduced during the classroom practice portion of Phase 2 professional development.
        - Capturing/observing classroom teaching: Teachers create videos of themselves delivering lessons, which will be reviewed by Code.org staff as well as the individual teachers themselves. These videos will facilitate self-reflection by the teachers and will provide a medium for feedback from Code.org staff and PD facilitators. They will inform the ongoing group discussions, acting as a vehicle for updating Code.org facilitators on the experiences teachers are having delivering the courses. (Currently in development).
        - Observing classroom teaching: Code.org facilitators and local master teachers observe teachers in person. This in-class coaching strengthens the local professional learning community of teachers while providing an opportunity for novice teachers to get direct feedback from experienced teachers.
        - Videos: Watch videos that model different teaching practices and strategies, including both effective practices and less ideal practices that teachers should avoid. These videos will provide fodder for discussions around practices to strive for and practices to avoid. (Currently in development)
    - Collaborating with the learning community: Teachers will continue to refine and build their capacity by working in the learning community that has been built in the prior PD phases.
        - Asynchronous communication: Share resources and discuss implementation strategies with other teachers in the same district, other Code.org districts, master teachers and content experts, and/or the larger ECS/CSP teaching community.

        - **Synchronous communication**: Ongoing meetings (both in-person and via video conferences) with other teachers from the same district.
            - Online meetings: Periodic video conferences with discussion topics focused on pedagogical and instructional techniques with specific attention given to approaches to tailoring curriculum implementation to meet the needs of students.
            - Quarterly in-person meetings: Ongoing, in-person meetings for all teachers in a district. These meetings provide ongoing support as teachers move into new units in the curriculum.
- **Delivery**: Quarterly in person workshop days combined with a mix of synchronous and asynchronous online activities with local teachers and the broader CS10K (National Science Foundation) community.

Phase 4: Follow-up

- **Goals**: Debrief the first year of teaching the course while facilitating continued personal development for teachers of that course. Expansion of community for teachers in all phases of the PD.
- **Components**:
    - Structured reflection and discussion: Explore the challenges and successes of teaching the course for the first time.
    - Classroom practice: Revisit the specific lessons from the curriculum.
        - **Modeling teaching**: Groups of participants plan and deliver lessons from the curriculum to the rest of the participants. Facilitators observe this process.
        - **Meta-level debrief and discussion of teaching practice**: After each lesson is delivered, both the teachers and the learners reflect on and discuss the lesson. Based on observations from the lesson delivery, facilitators help guide the debrief.
        - **Assessment**: Explore the ways to conduct assessment in ECS or CSP.
    - Adding your own pieces: Experiment with and discuss the process of adding or changing pieces of the curriculum without losing the content and values central to the lesson.
    - Community building with new cohort(s): End of session community building mixer/social event open to ECS and CSP teachers from all cohorts as well as district- and school-level administrators and counselors.
- **Delivery**: In-person workshop.

Potential Pathways through PD:

Person doing ECS:	Person doing CSP:	Person doing ECS and CSP:
pre: phase 1 (ecs) summer 1: phase 2 (ecs) AY 1: phase 3 (ecs) summer 2: phase 4 (ecs)	pre: phase 1 (csp) summer 1: phase 2 (csp) AY 1: phase 3 (csp) summer 2: phase 4 (csp)	pre: phase 1 (ecs) summer 1: phase 2 (ecs) AY 1: phase 3 (ecs) phase 1 (csp) summer 2: phase 4 (ecs) phase 2 (csp) AY 2: phase 3 (csp) summer 3: phase 4 (csp)