

Governors for CS + K–12 Computer Science Framework Convening Planning Worksheet

The goal of this worksheet is to help a state develop a plan for expanding access to K-12 computer science education. The template includes defining the state's goals for implementing computer science (e.g., number of schools reached), what state policies need to be addressed, sample questions to consider, and a sequence of benchmarks over the short, medium, and long term.

Questions to Consider Before Planning

1. What is the current **landscape** of K-12 computer science in your state? (See example stats at code.org/promote)
2. What are the **challenges** to implementing computer science education? What are the strengths of your state's CS education efforts? Are there any that could facilitate continued expansion?
3. Who are the **stakeholders** that need to be involved in implementing computer science education? What organizations are already working in the state?
4. How will your state **communicate** its vision and goals for computer science, such as reflected in this planning document?

Some Questions to Consider While Planning Benchmarks

1. Will this policy goal be met through **legislation or regulation**?
2. Along what approximate **timeline** will the benchmarks be met?
3. How will issues of **equity and diversity** be addressed within this goal?

Benchmarks		
Require or Have a Specific Plan that All Secondary Schools Offer Computer Science with an Appropriate Implementation Timeline <ul style="list-style-type: none"> • What high-quality courses and/or curriculum are available in your state? How will you determine quality? (See provider list: code.org/educate/curriculum/3rd-party) • What approach is needed for achieving this policy goal in rural areas? • How can state-level course codes simplify adoption? • Where will the teachers come from? How will they be certified or prepared? (See also: <i>Implement Clear Certification Pathways for Computer Science Teachers</i>) 		
<p>Short Term</p> <p><i>Examples (delete and replace with actual benchmarks):</i></p> <ul style="list-style-type: none"> • Regional hubs/providers for professional development are identified • A statewide train-the-trainer summit is held • Pilot workshops are held in key regions 	<p>Medium Term</p> <p><i>Examples (delete and replace with actual benchmarks):</i></p> <ul style="list-style-type: none"> • 100% of districts are participating in professional development offered by regional hubs • 50% of high schools have at least one teacher 	<p>Long Term</p> <p><i>Examples (delete and replace with actual benchmarks):</i></p> <ul style="list-style-type: none"> • All high schools have access to at least one teacher that is able to teach a high-quality computer science course. • All high schools offer a complete pathway of courses

	<i>who has been to professional development.</i>	<i>including introductory and advanced courses.</i> <i>Schools may fulfill the goal by offering online classes.</i> <ul style="list-style-type: none"> • <i>All high schools have high-quality in-person or online courses offered in their schools.</i>
Allocate Funding for Rigorous Computer Science Teacher Professional Learning and Course Support <ul style="list-style-type: none"> • Where will the money come from? • What current mechanisms or models for funding and distributing funds exist that can be applied to CS? • How will you ensure equitable distribution (in terms of underserved students in urban and rural areas)? • What will be the eligible uses for the funding? • How is Perkins funding currently allocated and how can it be more inclusive of computer science? (e.g., dual-coding of academic and CTE CS courses) • How will ESSA Title II funding be used? 		
Short Term	Medium Term	Long Term <i>Examples (delete and replace with actual benchmarks):</i> <ul style="list-style-type: none"> • <i>The State has a dedicated funding stream to continue to prepare K-12 computer science teachers both to expand access to computer science and address teacher attrition.</i> • <i>The State has a set-aside % for K-12 computer science from existing funding.</i> • <i>Computer science is an eligible use and is getting an adequate level of funding.</i>
Define Computer Science and Establish Rigorous K-12 Computer Science Standards <ul style="list-style-type: none"> • How can the K-12 CS Framework and existing standards from other states and organizations be used as an input? • Where will the standards be located? (e.g., science, technology, computer science) • What area of the state education authority will lead the development of the standards? What area(s) will lead implementation? • How will you select writers to represent a variety of stakeholders (e.g. industry, higher ed, both CTE and non-CTE teachers)? • How dependent will standards in later grades be on earlier ones? Do later standards require mastery of previous standards? 		

Short Term	Medium Term	Long Term <i>Examples (delete and replace with actual benchmarks):</i> <ul style="list-style-type: none"> • <i>The State has established discrete K-12 computer science standards for all grades.</i> • <i>The State has established K-12 computer science standards within existing mathematics and science standards.</i>
Create a State Plan for K-12 Computer Science <ul style="list-style-type: none"> • Who will create the plan? • How will the state get stakeholder input and buy-in for the plan? • How will the state plan be publicly communicated and/or be included in a state's strategy plan? 		
Short Term	Medium Term	Long Term <i>Examples (delete and replace with actual benchmarks):</i> <ul style="list-style-type: none"> • <i>The State has a public position statement approved by the Board of Education outlining the state's vision and goals for computer science.</i> • <i>The State has created a computer science page on the department of education website and posted a ten-year timeline for implementing statewide CS.</i>
Implement Clear Certification Pathways for Computer Science Teachers <ul style="list-style-type: none"> • What requirements will be necessary to certify or endorse practicing teachers or teachers who already possess licensure in another area? (e.g., professional learning, 		

<p>higher education courses in methods or content)</p> <ul style="list-style-type: none"> • How will new requirements take into account current classroom teachers who have been teaching computer science successfully via out-of-content-area exemptions? • What type of pathways or incentives are currently in place to certify teachers in other high-need subjects? • How will teachers demonstrate their knowledge (e.g., a certification exam)? 		
Short Term	Medium Term	<p>Long Term</p> <p><i>Examples (delete and replace with actual benchmarks):</i></p> <ul style="list-style-type: none"> • <i>The State adopts a CS certification exam and a plan for preparing candidates, including reimbursement for teachers who pass the exam.</i> • <i>The State will add explicit language on computer science to the state certification regulations and send a memorandum to all district certification departments.</i>
<p>Create Programs at Institutions of Higher Education to Offer Computer Science to Preservice Teachers</p> <ul style="list-style-type: none"> • How can you work with institutions of higher education to create programs (or courses) in computer science teacher preparation? • How can state funding be used to incentivize institutions of higher education to offer computer science to preservice teachers? • What current regulations governing teacher preparation programs can be revised to motivate institutions of higher education to offer CS to preservice teachers? 		
Short Term		<p>Long Term</p> <p><i>Examples (delete and replace with actual benchmarks):</i></p> <ul style="list-style-type: none"> • <i>The State has approved several preservice teacher preparation programs in computer science at institutions of higher education.</i> • <i>The State has instituted a scholarship program for preservice teachers in math or science to take computer science courses.</i>

Establish Dedicated Computer Science Positions in State and Local Education Authorities <ul style="list-style-type: none"> • How will the position be afforded enough influence to implement the changes required? • What branch of the state department of education would this position belong in or would it create a new group/team? • How would this person work across different branches/departments and engage a diverse group of external stakeholders? 		
Short Term	Medium Term	Long Term <i>Examples (delete and replace with actual benchmarks):</i> <ul style="list-style-type: none"> • <i>The State has created a computer science program specialist position who reports directly to the deputy superintendent for curriculum and instruction.</i> • <i>The State has tasked 50% of a high school specialist's time and 50% of a K-8 specialist's time with duties particular to computer science.</i>
Allow Computer Science to Satisfy a Core Graduation Requirement <ul style="list-style-type: none"> • How could computer science fit into the state's current graduation requirements? (e.g., fourth-year mathematics, flex credit, technology credit) • How will the state or school determine which computer science courses are allowed to meet the requirement? (e.g., standards) 		
Short Term	Medium Term	Long Term <i>Examples (delete and replace with actual benchmarks):</i> <ul style="list-style-type: none"> • <i>The State allows computer science to satisfy a fourth-year mathematics credit after or concurrent to completing current state math requirements.</i> • <i>The State has created a technology credit graduation requirement that can be fulfilled by computer science or engineering courses.</i> • <i>The State releases language that encourages schools to allow CS to count towards graduation and provides guidance to schools.</i>

Allow Computer Science to Satisfy an Admission Requirement at Institutions of Higher Education <ul style="list-style-type: none"> • How are admission requirements at institutions of higher education determined in the state? • How closely are admission requirements aligned with high school graduation requirements? 		
Short Term	Medium Term	Long Term <i>Examples (delete and replace with actual benchmarks):</i> <ul style="list-style-type: none"> • <i>The State, which already allows CS to count as a science credit for high school graduation, allows a computer science course to satisfy one of the science credit requirements for admission to the state higher education system.</i> • <i>The State's higher education system recommends that all students, particularly those interested in majoring in STEM fields, take computer science in high school.</i>