Curriculum Developer CRCS Self-Assessment Tool

The **Kapor Curricular CRCS Self-Assessment Tool** was created for curriculum designers with the aim of supporting internal self-assessment of instructional materials. Instructional materials can include activity instructions, lesson plans, formative or summative assessments, instructional unit teacher guides, full course textbooks, and other student materials. Users of the tool can generate informal guidance to help identify strengths as well as opportunities to increase the culturally responsive and sustaining design features of their instructional materials.

Background

This tool derives from the Kapor Center's Culturally Responsive-Sustaining CS Education Framework (CRCS Framework), which provides a definition of culturally responsive and sustaining computer science (CS) classroom pedagogy and articulates core components necessary for implementing that pedagogy. The CRCS Framework is a part of the Kapor Center's Equitable Computer Science Curriculum Initiative, which is dedicated to eliminating barriers that exist in K–12 CS education and pathways for marginalized students in careers in computing, and fields related to CS, science, technology, engineering, and mathematics (STEM). EquitableCS - Kapor Center

To translate the CRCS Framework into a tool for STEM curricula, the Kapor Center collaborated with WestEd's NextGenScience, which supports the implementation of science and engineering standards through systems change, including the evaluation of curriculum materials and the development of evaluation tools. The Kapor Center and NextGenScience adapted the Core Components (CC) and Courses of Action (CA) from the CRCS Framework to create reflection questions relevant to computer science/STEM curriculum materials.

Applying the Tool

1) **Deciding who's involved.**
The tool can be used by individuals or groups, but the tool works best when used first individually and then collaboratively to compare, reflect, and plan, allowing for more thorough evidence collection through multiple individual lenses. This can build a shared and deeper understanding of the design features of culturally responsive and sustaining instructional materials.

2) **Understanding the questions.**
Consider each of the CRCS Self-Assessment questions within the table below and reflect on where evidence may be gathered from the instructional materials to be evaluated. Links embedded within many of the rows below provide some background information about concepts and terms. For more information, see the CRCS Framework, or contact the Kapor Center to learn about available professional learning opportunities. Each question refers to a Core Component (CC) or a Course of Action (CA) from the CRCS Framework.

Curriculum Developer CRCS Self-Assessment Tool (Cont.)

3) **Evaluate the evidence.**
Consider whether the evidence is fully sufficient for a "Yes" answer. A "Yes" answer might require more evidence in longer instructional materials than in a single lesson plan. As the tool describes an ideal state for curriculum materials, **it is extremely unlikely that the answers to all questions will be "Yes."**

a. "Yes" answer: Clear and concrete examples of this component within the materials. It is also important to not read between the lines in identifying evidence related to the questions below; rather, the evidence of components needs to be explicit (i.e., a specific passage of text, task, or activity that you can point to and label in the instructional materials).

b. "Partial" answer: There is some evidence (e.g., from one lesson out of a 12-lesson instruction al unit) or emerging evidence, but not as much as you would ideally envision for the materials.

c. "None" answer: No clear, explicit, and concrete example of this component within the materials.

4) **Considering the next steps.**
For answers of "Partial" and "None," **consider what adjustments could be made** to strengthen the materials to better support all students and teachers and add this information to the last column. For answers of "Yes" provide samples of evidence and feedback demonstrating this component can

Guiding Question and Framework Component	**Sufficient Evidence?**	**Evidence / Feedback Adjustments Needed** Describe concrete examples of where this happens in the materials or describe how adjustments could be made to the materials to better reflect this component.
Awareness and Understanding of Racism Do curriculum materials include specific activities that develop awareness and understanding of the effects of past, present, and ongoing racism in the field of study (e.g., computer science), in both K–12 education and in society? (CC1)	Yes	
Language Addressing Racism Do curriculum materials include and use appropriate and accurate language and definitions to address racism? (CA1.3)		

Curriculum Developer CRCS Self-Assessment Tool (Cont.)

Guiding Question and Framework Component	Sufficient Evidence?	Evidence / Feedback Adjustments Needed Describe concrete examples of where this happens in the materials or describe how adjustments could be made to the materials to better reflect this component.
Anti-Racist Instructional Practices Do curriculum materials use instructional practices that are anti-racist/anti-bias? (CA1.4)		
Asset-Based Approaches Do curriculum materials prompt and support educators to: • Recognize all students' assets and strengths; and/or • Actively confront and dispel stereotypes and biases about the abilities and skills of students from historically marginalized groups? (CA2.1)		
Student Identities Do curriculum materials help students explore and learn more about their own identities as well as a variety of other identities? This includes: • Guiding teachers to honor and affirm students' intersecting identities, and/or • Ensuring that instructional activities and projects reflect a diverse variety of cultures, passions, and interests. (CA1.1, CA2.3, CA2.5)		
Inclusive Classroom Culture Do curriculum materials support educators and students in co-creating inclusive and equitable classroom cultures by: • Cultivating meaningful learning experiences for all students; • Providing teacher guidance and support for recognizing, respecting, and including the diversity of voices, backgrounds, needs, and perspectives of all students; • Providing students with choice during key curricular moments, including opportunities to choose the modality (e.g., writing, speaking, drawing) in which they engage, and/or • Frequently soliciting student feedback? (CA2.6)		

Curriculum Developer CRCS Self-Assessment Tool (Cont.)

Guiding Question and Framework Component	Sufficient Evidence?	Evidence / Feedback Adjustments Needed Describe concrete examples of where this happens in the materials or describe how adjustments could be made to the materials to better reflect this component.
Relevance Are curriculum materials' topics relevant and authentic for students such that students discuss, learn about, and potentially solve problems or issues related to their communities and/or the culture(s) to which they belong? (CC3)		
Socio-Political Contexts Do curriculum materials provide educators guidance to develop students' understandings of current and historical socio-political contexts within which the coursework is situated, including ethical, political, and societal implications (e.g., discussing the implications of inequitable access to the internet and computing devices)? (CC3)		
Student Ideas and Leadership Do curriculum materials support educators in facilitating peer-to-peer teaching and learning and empowering students to become emerging experts who lead activities? (CC4.2)		
Accessing and Communicating Learning Do assessments (formative and summative), both in teacher guidance and student-facing materials, honor and respect the diverse ways that students access, process, and communicate information? This includes: • Specifying and providing differentiation within the materials as well as supportive ways for students to access instruction and assessments to meet the needs of all learners; • Applying Universal Design for Learning principles and accessibiility (CC 4.3)		

Curriculum Developer CRCS Self-Assessment Tool (Cont.)

Guiding Question and Framework Component	Sufficient Evidence?	Evidence / Feedback Adjustments Needed Describe concrete examples of where this happens in the materials or describe how adjustments could be made to the materials to better reflect this component.
Community Assets Do curriculum materials provide prompts and guidance for educators and students to consult with families and community members, particularly those from historically marginalized groups, and incorporate their experiences and cultures as assets in the classroom? (CA5.1)		
Incorporating Families Do curriculum materials prompt and provide guidance for educators: • To engage families and communities in learning activities for their (the families') own knowledge and growth, and/or • To engage families and communities in learning activities to support student learning? (CA5.3)		
Diverse Representation Do curriculum materials prompt and support educators to incorporate a diverse variety of experts (including researchers, community members, entrepreneurs, and practitioners) into the classroom in authentic and engaging ways to intentionally allow students to interact with a variety of industry professionals and careers? This includes: • Guidance for educators to identify authentic instructional opportunities for role models and guest instructional partners from diverse identities, backgrounds, careers, and trajectories and who come from groups that are underrepresented or marginalized in the discipline; • Suggestions for educators to incorporate these experts virtually when in-person opportunities are a challenge; and/or • Guidance for educators and students for ways to interact with these experts. (CC6)		

Curriculum Developer CRCS Self-Assessment Tool (Cont.)

Guiding Question and Framework Component	Sufficient Evidence?	Evidence / Feedback Adjustments Needed Describe concrete examples of where this happens in the materials or describe how adjustments could be made to the materials to better reflect this component.
Career Connections Do curriculum materials provide opportunities for students to explore and be exposed to a range of computing-related traditional and non-traditional career pathways, programs, and opportunities that are aligned to student interests, decenter whiteness, and reduce professional biases and inequalities? (CA6.1)		

Appendix 1. Key Terms:

Accessibility: the ability of a device, product, service, or environment to be usable by as many people as possible

Asset-Based Thinking: "seeks to unlock students' potential by focusing on their talents. Also known as strengths-based teaching, this approach contrasts with the more common deficit-based style of teaching which highlights students' inadequacies." In its simplest form assets-based approach focuses on strengths, viewing diverse cultures and traits as positive assets

Bias: prejudice in favor of or against one thing, person, or group compared with another usually in a way that is considered to be unfair. Biases may be held by an individual, groups, or institution and can have negative or positive consequences. Bias is not limited to ethnicity or race

Culture: behavior of humans that includes language, ideas, beliefs, customs, codes, institutions, tools, techniques, works of art, rituals, and ceremonies among other elements

Deficit-Based Thinking: any type of thinking or behavior that treats a student or student group as "less than" or below normal. Normal=whiteness where everything that falls outside is considered substandard or "less than". Deficit-based thinking comes across in our language and behaviors with certain student groups

Differentiation: an educational strategy that meets the diverse learning needs of students in the classroom with the goal that all students are able to successfully master content, skills, and standards of lessons

Funds of Knowledge: resource teachers should use to enhance student achievement and success. A student's funds of knowledge include academic and personal background knowledge, accumulated life experiences, skills and knowledge to navigate the world every day, and world views shaped by home and society

Curriculum Developer CRCS Self-Assessment Tool (Cont.)

Appendix 1. Key Terms:

Historically marginalized people: people groups that have been adversely affected by systems of power including those related to race, ethnicity, gender, sexual orientation, disability, socioeconomic status, and religion

Identity: the collective set of characteristics by which a person is known or can be grouped; identity characteristics can be visible and invisible (hidden)

Identity markers: categories that provide belonging for people; examples include disability, age, race, ethnicity, gender, and nationality

Intersectionality: refers to the social, economic and political ways in which identity-based systems of oppression and privilege connect, overlap and influence one another. The phrase was coined by Dr. Kimberle Crenshaw and she describes it as "a framework to trace the impact of racism, of sexism, other modes of discrimination, where they come together and create sometimes unique circumstances, obstacles, barriers for people who are subject to all of those things."

Racism: a system of dominance, power, and privilege based on racial group designations, occurring where dominant group members create or maintain structures, ideologies, values, or behavior that have the intent or effect of leaving the non-dominant group members excluded from power, esteem, status, and/or equal access to societal resources. There are four types of racism: individual (interpersonal) racism, internal racism, institutional racism, and structural racism

Racial inequity: an issue of social justice that involves racial discrimination and prejudice that affects a racial group's ability to find work, get access to healthcare, and receive an equal education

Racial justice: the act of preserving, seeking, or extending rights to people who have historically been denied their rights on the basis of race

Stereotype: is an exaggerated belief, image or distorted truth about a person or group—a generalization that allows for little or no individual differences or social variation. Stereotypes are based on images in mass media, or reputations passed on by parents, peers, and other members of society. Stereotypes can be positive or negative.

Student Agency: student agency includes the following four components: setting advantageous goals, initiating action towards those goals, reflecting on and regulating progress towards those goals, and self-efficacy

Universal Design for Learning (UDL): is a framework to guide the design of learning environments that are accessible and challenging for all. Ultimately, the goal of UDL is to support learners to become "expert learners" who are, each in their own way, purposeful and motivated, resourceful and knowledgeable, and strategic and goal driven. UDL aims to change the design of the environment rather than to change the learner.

White Supremacy: the ideology that white people and the ideas, thoughts, beliefs, and actions of white people are superior to non-white people. White supremacy is ever present in our institutional and cultural assumptions that assign value, morality, goodness, and humanity to white people while casting non-white people and communities of color as worthless, immoral, bad, and inhuman.

Curriculum Developer CRCS Self-Assessment Tool (Cont.)

Appendix 1. Key Terms:

Whiteness: itself refers to the specific dimensions of racism that serve to elevate white people over non-white people. Whiteness is conceptualized as a constellation of processes and practices rather than as a discrete entity. These processes and practices include basic rights, values, beliefs, perspectives, and experiences purported to be commonly shared by all but actually only consistently afforded to white people. Whiteness is dynamic, relational, and operating at all times and on various levels.

Appendix 2. References:

ACLU
Ed Glossary
Education Reimagined
Kapor Center Culturally Responsive-Sustaining Computer Science Education: A Framework
Learning for Justice
NEA EdJustice
Race Forward
Racial Equity Tools
Teacher Education Reinvented/NYU Steinhardt
Universal Design for Learning

Appendix 3. Resources for Further Learning:

3 Ways to Build Student Agency into Your Lessons
10 Tips for Developing Student Agency
ADA Standards for Accessible Design
An Asset-Based Approach to Education: What it is and Why it Matters
Big ideas for confronting racism in education
Creating an Identity-Safe Classroom | Edutopia
Culturally Responsive-Sustaining Education Framework (NYSED.gov)
Determining the Accessibility of K12 Digital Materials: Tools for Educators
Embedded EthiCS
Fighting Systemic Racism in K12 Education
How can educators best promote student agency?
REAL-CS Initiative
Student agency | Renaissance
Student Agency: Voice, Choice, and Making
Social Justice in Education: The Role Educational Leaders Play
Talking about Race
Teaching for Racism
Toolkit: Identity Development
Universal Design for Learning Guidelines
Unlearning: Breaking Bias
Using Collaborative Learning to Build Student Agency | Edutopia

Curriculum Developer CRCS Self-Assessment Tool (Cont.)

Appendix 3. Resources for Further Learning:

Web Accessibility Laws That Affect K-12 Schools
What is Ableism? Teachers Share 8 Things They Wish the World Understood
When Educators Understand Race and Racism | Learning for Justice

Culturally Responsive-Sustaining Education Framework (New York Department of Education)
Culturally Responsive Computing: A Theory Revisited (Scott, et al., 2015)
Culturally Relevant CS Pedagogy: From Theory to Practice (Madkins et al., 2020)
Culturally Responsive Teaching: Theory, Research, and Practice (Gay, 2000)
Culturally Responsive Teaching and the Brain (Hammond, 2014)
Culturally Sustaining Pedagogy : A Needed Change in Stance, Terminology, and Practice (Paris, 2012)
Culturally Sustaining Pedagogy: A Critical Framework for Centering Communities (Alim, Paris & Wong, 2020)
Cultivating Genius: An Equity Framework for Culturally and Historically Responsive Literacy (Muhammad, 2020)
Embedding and Sustaining Inclusive Practices in STEM (McPherson et al., 2019)
Ethics, Identity, and Political Vision: Toward a Justice-Centered Approach to Equity in Computer Science Education (Vakil, 2018)
Exploring Intersectionality in Education: The Intersection of Gender, Race, Disability, and Class (Petersen, 2006)
Good Teaching? An Examination of Culturally Relevant Pedagogy as an Equity Practice (Schmeichel, 2012)
It's About Power: A Call to Rethink and Equity in Computing Education (Vakil & Higgs, 2019)
Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color (Crenshaw, 1991)
Preparing for Culturally Relevant Teaching (Gay, 2001)
Toward Culturally Responsive Computing Education (Eglash et al., 2013)
Toward a Theory of Culturally Relevant Pedagogy (Ladson-Billings, 1995)

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