The CT Integration Framework

SECTION A. TEACHER KNOWLEDGE, PEDAGOGICAL CONTENT KNOWLEDGE, AND FACILITY WITH TOOLS TO SUPPORT STUDENT LEARNING OF CT AND CORE SUBJECTS

Teachers should demonstrate understanding of CT concepts, practices, and principles and be able to employ and modify, based on feedback during professional development and classroom observations, instructional moves that facilitate student learning and application of CT in multiple subjects. Teachers should also be able to use a range of materials—from paper to manipulatives to digital tablets and laptop computers—to facilitate student learning of CT and the subjects with which it is integrated.

Element A1. **Teacher definition** of CT and CT integration across the curriculum

Description	Examples of what it might look like when implemented effectively in your classroom	This is not a priority at the moment (1)	Beginning (2)	Approaching (3)	Achieving (4)
Teachers conceptualize *CT integration across the curriculum* as the teaching and learning of computational thinking within the scope and sequence of major elementary content areas such that learners have repeated opportunities within and across grades to use CT for problem solving *with or alongside* other subject-specific practices to achieve standards or common objectives.	• I have my own well-articulated definition for CT integration across the curriculum that is aligned with my school and district's definition and I can articulate it clearly and consistently when asked about it . • When my vision or definition of CT integration diverges from those of the administration or my school district, I am able to explain why. • There is a definition I can refer to for guidance on affecting or modifying CT-integrated instruction and for analyzing student progress and learning outcomes.				

Self-Reflection Question: Can I articulate my own vision and definition for CT integration across the curriculum? What level of integration do I feel most comfortable implementing at this moment, and what level of integration would be most practical for me to consistently implement over time (i.e., what is my goal level of integration)? What supports do I need to help me achieve my goal?

Element A2. Teacher **content knowledge of CT** concepts, practices, and perspectives

Description	Examples of what it might look like when implemented effectively in your classroom	This is not a priority at the moment (1)	Beginning (2)	Approaching (3)	Achieving (4)
Teachers are knowledgeable about the concepts, practices, and principles of CT that are developmentally appropriate for elementary-aged learners.	• I frequently model using CT concepts and practices in my daily language with students to complete routine classroom tasks. I acknowledge CT concepts and approaches when I see them practiced by my students. • I routinely demonstrate a command of CT concepts, practices, and perspectives through questioning and explanations to my students. • I can articulate a clear definition of CT concepts and practices consistently when asked about it.				

Self-Reflection Question: Do I have a strong understanding of CT concepts, practices, and principles? Do I feel confident and prepared in my ability to teach CT practices and concepts and integrate them across the curriculum? What level of integration do I feel most comfortable implementing at this moment, and what level of integration would be most practical for me to consistently implement over time (i.e., what is my goal level of integration)? What supports do I need to help me achieve my goal?

Element A3. Teacher beliefs about their **capacity to integrate CT into multiple domains**

Description	Examples of what it might look like when implemented effectively in your classroom	This is not a priority at the moment (1)	Beginning (2)	Approaching (3)	Achieving (4)

Teachers believe they are (1) knowledgeable about CT and (2) prepared and confident in their ability to teach CT practices and concepts and integrate them across the curriculum.	• My lesson plans and instructional moves reflect my knowledge of CT concepts and practices, my understanding of how those work alongside subject-area concepts and practices. • Students are iteratively introduced to concepts and practices while solving problems.				
Self-Reflection Question: Do I have a strong understanding of how subject-area (e.g., ELA, math, or science) concepts and practices connect to CT and how to facilitate that integration in my classroom? What supports do I need to help me understand how subject-areas connect to CT?					
Element A4. Teacher **pedagogical content knowledge for integrating CT in multiple subjects** (ELA, math, etc.) including the use of computers and other technologies to support student learning					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers use effective instructional strategies and moves for teaching CT and a core subject and helping students build CT skills in that subject area.	• I demonstrate a range of instructional strategies, teacher moves, and responses to students for the purposes of teaching subject-specific *and* CT concepts, practices, and perspectives. • I can articulate a clear and concise definition of CT integration and explain how and why CT concepts and practices are integrated with those of the major subjects and align to each subject's learning objectives and content standards .				
Self-Reflection Question: Do I feel confident in my capacity to differentiate instruction and modify materials to meet the needs of individuals and groups of learners as they learn to integrate CT into subject areas?					

Element A5. Teacher strategies/moves that **support collaborative problem solving**					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers use instructional strategies/moves that build student competencies in collaborative problem-solving using CT practices and concepts.	• I demonstrate a range of instructional strategies for the purposes of helping students build, practice, and refine collaborative problem-solving capacities. • I provide frequent opportunities for my students to have discussions, share reflections, and collaborate around CT while solving problems. • Students have access to classroom support materials, such as word walls, posters, or hand-outs that provide visual examples of CT concepts and practices that can be referenced in partner or whole group discussions to support collaborative problem solving efforts.				
Self-Reflection Question: What strategies for helping students engage in collaborative problem solving using CT practices and concepts am I implementing, if any?					
Element A6. Teacher strategies/moves that **address the needs and interests of academically diverse learners**					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers use instructional strategies/moves and materials that facilitate learning and engagement for students with varying instructional needs and multiple learning	• I implement a range of instructional strategies for the purposes of addressing the particular needs and interests of individual learners and groups of students, including students who struggle academically and those who are academically advanced.				

modalities, as informed by student data. Teachers employ Universal Design for Learning.	• I apply the principles of Universal Design for Learning (UDL), differentiating instruction, and providing students with accommodations and assistive technologies (AT) prescribed in students' IEPs and 504 plans during integrated CS/CT instruction. • I differentiate my instruction by creating extension/enrichment activities for students who are academically advanced during integrated CS/CT instruction.				
Self-Reflection Question: How confident am I in adapting materials to meet the instructional needs of my students and to differentiate for individuals and groups of students? What supports do I need to effectively modify materials and differentiate instruction?					
Element A7. Teacher strategies/moves that are culturally responsive and **address the needs and interests of culturally diverse learners**					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers use integrated CT instructional strategies/moves and materials that address the needs of diverse learners, supports and teaching through a lens that incorporates connections to students' lives and home cultures.	• When I integrate CT, I implement a range of instructional strategies for the purposes of addressing the particular needs and interests of individual learners and groups of students such as using the SIOP model for English learners. • I integrate CS/CT instruction through a culturally responsive and racial equity lens.				
Self-Reflection Question: Do the CT lessons and activities I implement provide my students with opportunities that reflect their individual needs and interests What supports do I need to help me achieve my goal?					

SECTION B. TEACHER SUPPORTS

Teachers should be given the time and material resources (with the support of school leadership) needed to plan for and implement school-wide CT integration.

Element B1. School **technology** infrastructure is suitable for CT integration					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**No Infrastructure (1)**	**Below Average Infrastructure (2)**	**Average Infrastructure (3)**	**Above Average Infrastructure (4)**
The presence of working and easily accessible infrastructure (e.g., broadband or wifi access), hardware (e.g., laptop computers, tablets) and support (e.g., a school-based technology specialist and IT support staff).	• My classroom has strong broadband access, sufficient hardware for my students to engage in CT integration activities, and IT support staff, either on site or off site, available to help me troubleshoot problems when needed. • My school has a plan for sharing technology resources among teachers, ensuring that all classrooms and students have access. • I regularly receive the training and support needed to help me implement new technology or digital resources in my teaching.				
Self-Reflection Question: Do I have adequate amounts of hardware, apps, and broadband access to ensure that students can engage in plugged CT-related activities? What level of implementing plugged CT activities do I feel most comfortable with at this moment, and what level of integration would be most practical for me to consistently implement over time (i.e., what is my goal level of integration)? What supports do I need to help me achieve my goal?					

Element B2.Teachers' **awareness** of leadership's vision **for and definition of CT integration and how it aligns with other district-level initiatives**					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**

The school has articulated a vision and goals for integrating CT practices across the curriculum that provides teachers with a reference point for determining objectives. The school's vision aligns with those of teachers and as well as with CS/CT district initiatives.	• I understand the vision for school-wide CT integration. I understand the school's definition of and motivation behind CT integration and how it clearly aligns with other district-wide CS/CT initiatives and either district-wide or school-wide professional development programs. • I can articulate the school definition of CT consistently when asked about it and articulate any differences that exist within my own visions and why those differences exist. • I am aware as to how the vision for CT integration aligns with other district-wide or school-wide initiatives and takes into account competing priorities.				
Self-Reflection Question: Does the leadership in my school have a clear, accessible, and widely understood definition for what CT integration across the curriculum means? Does this vision statement help me align my curriculum with any CS/CT district initiatives? What level of integration currently reflects the schoolwide vision of CT implementation at this moment? What additional information do I need about the school's and district's vision for CT integration?					
Element B3. A **workable plan for school-wide integration** of CT across subjects and grades, including established routines for communicating changes to the plan					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)The**
The plan for CT implementation describes the major activities, goals, milestones, and metrics to determine success, including identifying in-class periods or specific content areas CT integration will be implemented in. This plan accommodates the needs	• A written plan is accessible to myself and other members of the school community when needed. • The plan describes all major activities clearly and succinctly and explains how the activities complement or co-exist with other school initiatives. It also identifies metrics to determine if progress is being made towards achieving the goals. • All major stakeholders in the initiative regularly assess and discuss—using mutually established				

of individual learners and teachers, is revised periodically based on rounds of input from stakeholders and includes routines for communicating among stakeholders the activities, goals, challenges with implementation and process for addressing those challenges.	methods (e.g., via e-mail or during monthly meetings)—the initiative's progress. • Challenges and successes are frequently discussed and clearly communicated among stakeholders, and includes practices for changing plans based on discussions or to accommodate new data. • The plan includes explicitly-stated expectations around when CT can be integrated within class time, and allows for me to have autonomy to adapt activities and lesson plans to integrate CT into the content area. • The plan includes a strategy for sustainability, such as routines, increasing the amount of teachers integrating CT over time or developing CT teacher leaders that can support teacher-to-teacher coaching.				
Self-Reflection Question: Does my school provide me, other teachers, professional development providers, and support staff with opportunities to collaborate and construct a workable plan for CT integration? What supports do I need to help me achieve my goal?					
Element B4. Administration support for **collaborative planning** time and a school-based teacher teams or working for integrating CT [1]					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
School leaders provide the time and material resources (e.g., funds, equipment, and access to personal and/or professional guidance) to support the co-construction of an	• I am provided with time to meet regularly and at scheduled times with other teachers and staff in order to plan instruction for CT integration and have access to the resources I need to accomplish the goals we've set. • There are functioning teacher teams (that might include administrators and professional development providers) dedicated to generating				

[1] Applicable only in schools that elect to have working groups co-construct CT integration .

actionable plan for CT integration. There are functioning school-based teacher teams and working groups (including teachers and support staff) that meet regularly to focus on collaboration around CT integration and learning outcomes.	materials and creating pedagogy for the purposes of integrating CT with multiple subjects. • Our teams regularly incorporate feedback from other teachers, administrators, and professional development providers into our planning and processes. • The teacher teams that I am a part of produce instructional materials that integrate CT with subject area objectives.				
Self-Reflection Question: Does my school provide teachers with time and access to resources to collaboratively plan for CT integration?					
Element B5. **Effective teacher professional development programs and resources** (i.e., development activities and staff support) relating to CT integration					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
The school or district provides teachers with access to a CT integration professional development program that shows evidence of five core features of effective PD: content focus, active learning, coherence, sustained duration, and collective participation. PD focuses on strategies for building student CT competencies and instructional strategies for	• I am provided with opportunities to attend PD workshops and coaching activities that are focused on the integration of CT concepts and practices with the concepts and practices of at least one subject (e.g., math or science). • The PD engages me directly in creating and practicing teaching strategies and instructional materials and enables me to "think and learn like my students" during the activities; are aligned with the school's vision and definition for CT integration; occur regularly over the school year(s) and provide multiple opportunities to practice the same topic; and involve working teams of teachers. • PD providers (or other teachers or administrators) give me timely actionable feedback about				

attending to the needs of a diverse range of learners. PD provides teachers with feedback about their CT integration practices.	instruction and lesson and materials design for the purposes of improving CT integration pedagogy for specific individuals or groups of students.				
Self-Reflection Question: Does my professional development program build my content knowledge and pedagogical content knowledge for computational thinking *and* core subject area, and include multiple opportunities to engage with CT concepts, practices, and principles over time? Does my PD program prepare teachers to serve one another as peer coaches? What level of integration do I feel most comfortable implementing at this moment, and what level of integration would be most practical for me to consistently implement over time (i.e., what is my goal level of integration)? What support do I need to help me achieve my goal?					
Element B6. Teachers have access to **professional development resources and materials relating to CT integration** (i.e., online resources, webinars, and local community organizations) as provided by administration, or other relevant school personnel					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers are (1) aware of and have access to CT-related resources beyond the school and (2) integrate those resources into their own teaching *and* share them with other stakeholders (e.g., other teachers, a professional development provider, or administrator).	• Other school personnel, such as the STEM teacher, librarian, or IT support, have access to and provide me with a variety of teaching and learning resources, such as online applications for students to use. • My school regularly shares opportunities for me to interact with the wider local community of CS/CT educators (e.g., by attending coding or robotics workshops for teachers), collect teaching and learning resources, and introduce them to my immediate school community.				
Self-Reflection Question: What support and resources do I need to achieve my integration goals?					

SECTION C. CURRICULUM FEATURES AND LESSON/UNIT PLANNING

Teachers should be able to create new or modify existing rigorous curriculum materials to suit their needs and for the purposes of integrating a focus on CT into multiple subjects and for differentiating instruction depending on learners' needs. The curriculum should be aligned to relevant subject-area standards and CS standards and engender CT skills and subject-area content knowledge. The scope and sequence should reflect a multi-year (or multi-unit) sequence that provides learners with multiple opportunities to engage with concepts and practices and achieve the targeted learning objectives. Additionally, teachers should have access to developmentally-appropriate curriculum materials that are aligned to the school's *and the teachers'* visions for CT integration.

Element C1. **Development of teacher lesson plans** and activities					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers **revise existing** lessons, units, and materials to include a focus on CT integration across subject areas and that are aligned with state CS/CT standards as well as state content standards. Teachers **create new** lessons, activities, units and materials that integrate CT within a subject area, are aligned with state CS/CT standards.	• Activities and lessons I revise or create accurately reflect the school and district's vision for CT integration. • The activities and lesson plans allow students multiple opportunities (in a year and across grades) to apply CT concepts and practices to specific subject areas and reflect a spiral curriculum that allows students to revisit concepts and practices at multiple points and across grades to address increasingly challenging problems or to generate increasingly complex ideas and products. • The lessons and activities are structured to explicitly identify the CT concept, practice, or approach within the subject and are well-designed for the purposes of				

	enabling students to connect and apply CT *and* subject-specific concepts and skills. • The lessons and activities include opportunities for questioning, reflection, and formative strategies that enable me to assess students' application of the CT concepts, practices or approaches. • The lessons and activities I implement have a range of instructional strategies for the purposes of addressing the particular needs and interests of individual learners and groups of students.				
Self-Reflection Question: How confident am I in designing or revising and implementing my own lessons, activities and/or units for CT integration across the curriculum? Are my lessons aligned to subject-area standards *and* relevant state CS/CT standards? Do my lessons provide students with opportunities to apply CT concepts, skills and practices to both plugged and unplugged activities? What support do I need to design and implement standards- aligned curriculum?					
Element C2. **Adaptation and differentiation** of existing lesson plans to help diverse learners achieve rigorous CT and content learning outcomes					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers adapt and differentiate lessons (from material generated at the school or by an external curriculum developer) for the purposes of integrating CT into multiple subjects for diverse learners/learners with different strengths and needs. Teachers implement lesson plans and activities	• I use data from formative assessment, my own cumulative knowledge of my students, or feedback from administrators, professional development providers, or other teachers for the purposes of adapting lessons and differentiating instruction to support student CT within and across subject areas, as part of my working groups or PLC. • The lessons and activities I implement meet the instructional needs of individuals and groups of students.				

that provide students with a variety of opportunities to express their knowledge of CT concepts, including through both plugged and unplugged mediums.	• I have high expectations for all students to learn and apply CT concepts and skills.				
Self-Reflection Question: Do I use both plugged and unplugged curricular materials that meet my instructional needs, are aligned to subject-area standards and relevant CS standards, and allow for me to differentiate for individual and groups of students?					

SECTION D. COMPUTATIONAL THINKING ASSESSMENT

Teachers should have access to and use high-quality, reliable formative assessment routines (during unit implementation) and summative tests (following unit implementation, or at the end of the year) to gauge student progress with computational thinking across the curriculum and make changes to instruction as appropriate.

Element D1. **Formative assessment** practices relating to CT integration into subject area instruction					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers employ methods and routines to gather interim data and use it to make inferences about CT-related student learning in each subject and to modify instruction regularly to meet the	• Information about CT and subject-area learning for individuals and groups of students is collected regularly (e.g., via online or offline exit tickets, observation checklists, reflection activities, conferencing, or quizzes, work samples, observations) and used to modify				

needs of Individuals and groups, as needed. Teachers have routines for sharing feedback about CT-related learning with students.	instruction and materials to meet students' needs. • The data is shared among teacher teams for interpretation and making changes across subjects and classes as needed. • I have well-established routines for sharing feedback with my students about CT and subject-area concepts and practices, discussing it, and determining next steps to help students progress.				
Self-Reflection Question: Do I have clear formative assessment routines that provide students with actionable and effective feedback about their CT-related learning in subject areas? Do I have formative assessment routines that help me modify CT-related instruction and materials as needed?					
Element D2. **Summative assessment** practices relating to CT integration into subject area instruction					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**
Teachers use quality of end-of-unit or end-of-year summative tests—and methods for interpreting the results— to inform subsequent year instruction.	• I have access to and use end-of-unit or end-of-year tests or performance opportunities to determine student progress in CT and subject-area objectives and to inform instruction in the subsequent (or antecedent, depending on how teams use the data) unit or school year. • The data is shared among teacher teams for interpretation and making changes across subjects and classes as needed.				
Self-Reflection Question: Do I have clear summative assessment routines that I can use to inform subsequent instruction and CT integration activities? Do I have formative assessment routines that help me modify CT-related instruction and materials as needed? What support do I need to help me achieve my goal?					

SECTION E. STUDENT OUTCOMES

Effectively integrating CT across the curriculum should result in students' improved ability to apply CT practices and concepts to frame and solve problems and create original products using computers in all major elementary school subjects; improvements in self-efficacy and self-regulation with applying CT; and expanded beliefs about the usefulness of using CT for a range of activities in all subjects.

Element E1. Student **CT learning outcomes** in one or multiple subjects

Description	Examples of what it might look like when implemented effectively in your classroom	This is not a priority at the moment (1)	Beginning (2)	Approaching (3)	Achieving (4)
Students demonstrate ability to explain and apply *concepts* such as abstraction, algorithms, programming, data, and networks and *practices* such as analysis, decomposition, and prototyping *in any one or multiple subject areas.*	• Students are able to apply a range of CT concepts and practices *within* subject-specific concepts and practices to solve problems or generate ideas or products in one or multiple subjects. • When asked, my students are able to identify in their work and clearly articulate, either verbally or written, the CT concepts, practices and approaches they used to solve problems, generate ideas, or complete activities.				

Self-Reflection Question: To what extent are students able to recognize and articulate the CT practices they used to solve problems and create original products in both plugged and unplugged activities?

Element E2. Student **beliefs about their ability to use CT** as a problem-solving method in multiple subjects

Description	Examples of what it might look like when implemented effectively in your classroom	No Students Have Confidence (1)	Some Students Have Confidence (2)	Most Students Have Confidence (3)	All Students Have Confidence (4)

Students believe they are capable of using CT as a problem-solving or creative method.	• Students are confident in their knowledge of and their ability to apply CT concepts and practices to solve problems or generate ideas or products in one or multiple subjects.				
Self-Reflection Question: Do my students feel confident about their ability to use CT concepts and practices effectively in multiple subject areas? How can my instructional moves and routines increase students' confidence? What additional support do I need to build students' confidence?					
Element E3. Student **beliefs about the value and utility of CT** practices and concepts in multiple subjects					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**No Students (1)**	**Some Students (2)**	**Most Students (3)**	**All Students (4)**
Students feel that CT is meaningful and useful.	• When asked, students explain the value and meaningfulness of CT as a set of tools for solving problems and generating ideas or products in one or multiple subjects.				
Self-Reflection Question: Can students explain the value and meaningfulness of CT as a set of tools for solving problems and generating ideas or products in one or multiple subjects?					

SECTION F. FAMILIES AND THE SCHOOL COMMUNITY

School leaders and teachers should help students' families learn about the value of integrating computational thinking across the elementary curriculum and, when possible, help them engage in activities that include aspects of CT.

Element F1. Teachers' efforts to **educate students' families** about CT and CT integration					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**Never (1)**	**One or Two times a year (2)**	**One or two times a grading period (3)**	**Once a month or more (4)**
I create opportunities for my students' families to learn about CT and to understand how I am integrating CT across the curriculum within my classroom .	• Over the course of the school year I provide students' parents or guardians with opportunities to learn about CT and how t I am applying CT skills across the curriculum in their classrooms, such as sending home parent letters or discussing CT integration during parent-teacher meetings . • I clearly articulate to students' parents or guardians my vision for CT integration across the curriculum and articulate how their students will apply CT in alignment with other content standards for *problem framing and problem solving using a computer* or as a creative activity for generating ideas and products. • I regularly share with my students' parents or guardians samples of classwork, through plugged or unplugged activities.				
Self-Reflection Question: Do I provide multiple opportunities for my students' families to learn how CT is being integrated across the curriculum? What are some ways I can share examples of students' work and progress in how they are applying CT skills with their families? What support do I need to engage families?					

Element F2. School-wide efforts to **educate students' families** about CT and CT integration					
Description	**Examples of what it might look like when implemented effectively in your school**	**Never (1)**	**Once a Year (2)**	**A few times a year (3)**	**Three or more times year (4)**
The school creates opportunities for students' families to learn about and use CT concepts and practices, as well as to learn about the value of integrating CT across the curriculum.	• My school clearly communicates to students' parents or guardians the school's vision for CT integration and that the effort to integrate CT across the curriculum is valuable, and recognize that CT is a valuable set of skills for their children to learn and practice. • My school clearly articulates to students' parents or guardians that CT is a set of concepts, practices, and perspectives *for problem framing and problem solving using a computer* or as a creative activity for generating ideas and products. • Over the course of the school year, my school holds events (e.g., workshops or attending class with students) to give families opportunities to become familiar with and use CT concepts and practices in multiple subject areas. • Students' parents or guardians have had multiple opportunities provided by the school to learn and apply CT skills, such as hosting school-wide coding events .				
Self-Reflection Question: Does my school host events, family nights, or other opportunities for the families in our community to learn about how CT is being integrated across the curriculum? What else can the school do to engage families?					
Element F3. School-wide effort to **foster a culture and environment** that supports CT integration across all subjects					
Description	**Examples of what it might look like when implemented effectively in your classroom**	**This is not a priority at the moment (1)**	**Beginning (2)**	**Approaching (3)**	**Achieving (4)**

The school creates an environment and school culture that reflects the vision for CT integration, provides access to CT classroom materials and resources for all teachers, and emphasizes CT integration as a priority.	• All classes across all grade levels and content areas have access to CT-focused classroom aid materials, such as posters, and are not just displayed in core content area classes, and there is a school-wide use of CT vocabulary. • CT integration is a priority for my school. Most staff in my school think it is important to integrate CT into other subject areas. Most staff in the school take responsibility for integrating CT into other subject areas.				
Self-Reflection Question: Does my school emphasize CT integration as a priority and provide a range of opportunities for integration across all subjects?					