Computer Science - Curriculum and Instructional Resource Review Committee (CS-CIRRC) Rubric Worksheet

Evaluator Guidance:

This worksheet is to be used in conjunction with the accompanying CS-CIRRC Rubric. Evaluators should use this worksheet to score the material based on the detailed criteria listed below. The CS-CIRRC Rubric has detailed information regarding the 0-4 scoring metric. Specific evidence located in the material and reasoning for the given score is to be logged on this worksheet. Please provide one score per criteria.

0 = Not Present | 1 = Limited | 2 = Developing | 3 = Meets | 4 = Exceeds *Please see rubric for details on scoring metric

Category 1a: Aligned to NVACS for Comp Science Criteria	Evidence (reference the location in materials)	Reasoning	Score (0-4)
1. Material supports **all** students in building understanding of AND using grade-level appropriate concepts from **Algorithms and Programming in the NVACS for Computer Science** that aid student sense-making, student questions, and/or inquiry design. • ***Algorithms***: Students evaluate and select algorithms based on performance, reusability, and ease of implementation. Knowledge of common algorithms improves how people develop software, secure data, and store information. • ***Control***: Students consider tradeoffs related to implementation, readability, and program performance when selecting and combining control structures. • ***Modularity***: Students design complex programs as systems of interacting modules, each with a specific role, coordinating for a common overall purpose. These modules can be procedures within a program; combinations of data and procedures or independent, but interrelated, programs. Modules allow for better management of complex tasks. • ***Program Development***: Students collaborate in diverse teams to develop programs with broad impact through careful review and by drawing on the strengths of members in different roles. Design decisions often involve tradeoffs. The development of			

Category 1a: Aligned to NVACS for Comp Science Criteria	Evidence (reference the location in materials)	Reasoning	Score (0-4)
complex programs is aided by resources such as libraries and tools to edit and manage parts of the program. Systematic analysis is critical for identifying the effects of lingering bugs. • ***Variables***: Students use data structures to manage program complexity. Programmers choose data structures based on functionality, storage, and performance tradeoffs.			
2. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from **Computing Systems in the NVACS for Computer Science**. • ***Devices:*** Students engage in opportunities to learn features and applications of common computing devices. As they progress, students learn about connected systems and how interaction between humans and devices influences design decisions. • ***Hardware and Software***: Students use hardware and software to communicate and process information in digital form. In early grades, students learn how systems use both hardware and software to represent and process information. As they progress, students gain a deeper understanding of the interaction between hardware and software at multiple levels within computing systems. • ***Troubleshooting:*** Students engage in hardware and software to communicate and process information in digital form. In early grades, students learn how systems use both hardware and software to represent and process information. As they progress, students gain a deeper understanding of the interaction between hardware and software at multiple levels within computing systems.			

Category 1a: Aligned to NVACS for Comp Science Criteria	Evidence (reference the location in materials)	Reasoning	Score (0-4)
3. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from **Data and Analysis in the NVACS for Computer Science**. • ***Collection, Visualization, and Transformation:*** Students collect data using both computational and non-computational tools and processes. In early grades, students learn how data about themselves and their world is collected and used. As they progress, students learn the effects of collecting data with computational and automated tools. • ***Inference and Models:*** Data science is one example where computer science serves many fields. Computer science and science use data to make inferences, theories, or predictions based upon data collected from users or simulations. In early grades, students learn about the use of data to make simple predictions. As they progress, students learn how models and simulations can be used to examine theories and understand systems and how predictions and inferences are affected by more complex and larger data sets. • ***Storage:*** Data can be composed of multiple data elements that relate to one another. For example, population data may contain information about age, gender, and height. Students make choices about how data elements are organized and where data is stored. These choices affect cost, speed, reliability, accessibility, privacy, and integrity.			

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4. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from **Impacts of Computing in the NVACS for Computer Science.** • ***Culture:*** Students engage in the design and use of computing technologies and artifacts and how they can improve, worsen, or maintain inequitable access to information and opportunities. • ***Safety, Law, and Ethics***: Students engage in how laws govern many aspects of computing, such as privacy, data, property, information, and identity. These laws can have beneficial and harmful effects, such as expediting or delaying advancements in computing and protecting or infringing upon people's rights. International differences in laws and ethics have implications for computing. • ***Social Interactions***: Students engage in exploring and evaluating the many aspects of society, especially involving careers, that have been affected by the degree of communication afforded by computing. The increased connectivity between people in different cultures and in different career fields has changed the nature and content of many careers.			

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5. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from **Networks and the Internet in the NVACS for Computer Science.** • ***Cybersecurity:*** Transmitting information securely across networks requires appropriate protection. In early grades, students learn how to protect their personal information. As they progress, students learn increasingly complex ways to protect information sent across networks. • ***Network Communication and Organization***: Computing devices communicate with each other across networks to share information. In early grades, students learn that computers connect them to other people, places, and things around the world. As they progress, students gain a deeper understanding of how information is sent and received across different types of networks.			
6. Material supports **all** students in building understanding AND connections using grade-level appropriate **Practices in the NVACS for Computer Science.** • ***Fostering an Inclusive Computing Culture***: Students include the unique perspective of others and reflect on one's own perspectives when designing and developing computational products; address the needs of diverse end users during the design process to produce artifacts with broad accessibility and usability; and employ self- and peer-advocacy to address bias in interactions, product design, and development methods. • ***Collaborating Around Computing***: Students Cultivate working relationships with individuals possessing diverse perspectives, skills, and personalities; create team norms,			

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expectations, and equitable workloads to increase efficiency and effectiveness; solicit and incorporate feedback from, and provide constructive feedback to, team members and other stakeholders, and evaluate and select technological tools that can be used to collaborate on a project. • ***Recognizing and Defining Computational Problems***: Students identify complex, interdisciplinary, real-world problems that can be solved computationally, decompose complex real-world problems into manageable subproblems that could integrate existing solutions or procedures; and evaluate whether it is appropriate and feasible to solve a problem computationally. • ***Developing and Using Abstractions***: Students extract common features from a set of interrelated processes or complex phenomena, evaluate existing technological functionalities and incorporate them into new designs, create modules and develop points of interaction that can apply to multiple situations and reduce complexity, and model phenomena and processes and simulate systems to understand and evaluate potential outcomes. • ***Creating Computational Artifacts***: Students plan the development of a computational artifact using an iterative process that includes reflection on and modification of the plan, taking into account key features, time and resource constraints, and user expectations; create a computational artifact for practical intent, personal expression, or to address a societal issue; modify an existing artifact to improve or customize it. • ***Testing and Refining Computational Artifacts***: Students systematically test computational artifacts by considering all scenarios and using test cases; identify and fix errors using systematic process; and			

Category 1a: Aligned to NVACS for Comp Science Criteria	Evidence (reference the location in materials)	Reasoning	Score (0-4)
evaluate and refine a computational artifact multiple times to enhance its performance, reliability, usability, and accessibility. • ***Communicating About Computing***: Students select, organize, and interpret large data sets from multiple sources to support a claim; describe, justify, and document computational processes and solutions using appropriate terminology consistent with the intended audience and purpose; articulate ideas responsibly by observing intellectual property rights and giving appropriate attribution.			

CATEGORY 1a SCORE
(SUM Category 1a - 18-24 points required to continue)

MUST MEET OR EXCEED TO MOVE ON WITH SCORING

Category 1a Points:

Category 1b**: Aligned to NVACS for** Integrated Technology - **Criteria**	**Evidence** **(reference the location in materials)**	**Reasoning**	**Score** **(0-4)**
1. Material supports **all** students in building understanding of AND using grade-level appropriate concepts from the **Empowered Learner** focus area in the **NVACS for Integrated Technology.** Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences. • Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them, and reflect on the learning process itself to improve learning outcomes. • Students build networks and customize their learning environments in ways that support the learning process. • Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways. • Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies, and are able to transfer their knowledge to explore emerging technologies.			
2. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from the **Digital Citizen** focus area in the **NVACS for Integrated Technology.** Students recognize the rights, responsibilities, and opportunities of living, learning, and working in an interconnected digital world, and they act and model in ways that are safe, legal, and ethical. • Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world. • Students engage in positive, safe, legal, and ethical behavior when using technology,			

Category 1b: **Aligned to NVACS for** Integrated Technology - **Criteria**	**Evidence** **(reference the location in materials)**	**Reasoning**	**Score** **(0-4)**
including social interactions online or when using networked devices. • Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property. • Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.			
3. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from the **Knowledge Constructor** focus area in the **NVACS for Integrated Technology.** Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others. • Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits. • Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources. • Students curate information from digital resources using a variety of tools and methods to create collection of artifacts that demonstrate meaningful connections or conclusions. • Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.			
4. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from the **Innovative Designer** focus area in the **NVACS for Integrated Technology.** Students use a variety of technologies within a design process to identify and solve			

Category 1b: **Aligned to NVACS for** Integrated Technology - **Criteria**	**Evidence** **(reference the location in materials)**	**Reasoning**	**Score** **(0-4)**
problems by creating new, useful, or imaginative solutions. • Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems. • Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks. • Students develop, test, and refine prototypes as part of a cyclical design process. • Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.			
5. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from the **Computational Thinker** focus area in the **NVACS for Integrated Technology.** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. • Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions. • Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making. • Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving. • Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.			

Category 1b: **Aligned to NVACS for** Integrated Technology - **Criteria**	**Evidence** (reference the location in materials)	**Reasoning**	**Score** (0-4)
6. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from the **Creative Communicator** focus area in the **NVACS for Integrated Technology.** Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats, and digital media appropriate to their goals. • Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication. • Students create original works or responsibly repurpose or remix digital resources into new creations. • Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations. • Students publish or present content that customizes the message and medium for their intended audiences.			
7. Material supports **all** students in building understanding AND connections using grade-level appropriate concepts from the **Global Collaborator** focus area in the **NVACS for Integrated Technology.** Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally. • Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning. • Students use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints. • Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal. • Students explore local and global issues and			

Category 1b**: Aligned to NVACS for** Integrated Technology - **Criteria**	**Evidence** **(reference the location in materials)**	**Reasoning**	**Score** **(0-4)**
use collaborative technologies to work with others to investigate solutions.			
CATEGORY 1b SCORE (SUM Category 1a - 21-28 points required to continue)	**MUST MEET OR EXCEED TO MOVE ON WITH SCORING**	**Category 1b Points:**	

Category 2: Access and Equity Criteria	Evidence (reference the location in materials)	Reasoning	Score (0-4)
1. 100% of grade level appropriate teacher supports are provided to guide teachers in making student learning relevant, ways for students to share their experiences, connections to previous experiences, draw and connect to language and culture, etc.			
2. Materials are made accessible to all students by providing four or more supports AND scaffolds consistently throughout (Supports include: differentiated reading material, language needs, etc., Scaffolds include: prompts, sentence frames, graphic organizers, anchor charts, etc.).			
3. Materials provide four or more diverse opportunities for students to represent, share, justify, and revise their thinking consistently throughout the material.			
4. Materials provide appropriate images, text, and activities which represent the diversity of our current society in a culturally responsive manner throughout 100% of the material.			
5. Curriculum and instructional materials include assurance from publishers agreeing to comply with the most current National Instructional Materials Accessibility Standard (NIMAS) specifications regarding accessible instructional materials.			
CATEGORY 2 SCORE (SUM Category 1a - 16-28 points required to continue)	**MUST MEET OR EXCEED TO MOVE ON WITH SCORING**	**Category 2 Points:**	

Category 3: Assessment Criteria	Evidence (reference the location in materials)	Reasoning	Score (0-4)
1. A coherent assessment system that includes four or more opportunities for pre-, embedded formative, summative, and self-assessment tasks to include equitable considerations for culturally and linguistically diverse students consistently throughout the material.			
2. Both formative and summative assessments use four or more task types, to include equitable considerations for culturally and linguistically diverse students consistently throughout the material.			
3. The formative and summative assessments are aligned to 100% of the NVACS for Computer Science and/or Integrated Technology (as described in Category 1).			
4. Both formative and summative assessments provide four or more opportunities for self, peer, and teacher feedback consistently throughout the material.			

CATEGORY 3 SCORE **Category 3 Points:**

(SUM Category 3 Criteria - Range 0-16 points possible)

Category 4: Teacher Instructional Resources which Support NVACS for Computer Science and/or Integrated Technology - Criteria	Evidence (reference the location in materials)	Reasoning	Score (0-4)
1. Four or more language practices are consistently utilized and embedded throughout the material to support students to develop grade-appropriate, subject-specific technical language.			
2. Four or more teacher resources include pedagogical background information (including relevant, contemporary research) to help teachers support all students throughout the instructional material.			
3. Teacher resources include four or more instructional strategies, digital tools, and/or media examples to deepen student learning consistently throughout the material.			

CATEGORY 4 SCORE **Category 4 Points:**

(SUM Category 4 Criteria - Range 0-12 points possible)

Category 5 : Inquiry Based Process aligned to the NVACs for Computer Science - Criteria	Evidence (reference the location in materials)	Reasoning	Score (0-4)
1. Instructional materials provide four or more supports and allows for students to make evidence-based claims consistently throughout the material			
2. Instructional materials provide four or more opportunities for students to identify questions in order to investigate a topic or event consistently throughout the material.			
3. Instructional materials provide four or more opportunities for students to develop a reasonable explanation on a given topic or event consistently throughout the material.			
4. Instructional materials provide four or more lessons and activities that are inquiry-based and are made accessible to all students consistently throughout the material.			

Category 5 Score **Category 5 Points:**

(SUM Category 5 Criteria - Range 0-16 points possible)

Scoring using JUST Category 1a	Scoring using BOTH Categories 1a and 1b	Overall Score
Using JUST Category 1a: **TOTAL SCORE/POINTS POSSIBLE (0-88)** **Exceeds (88)** **Meets (63-87)** **Developing (42-62)** **Limited (22-41)** **Does Not Meet (0-21)** **____ /88**	**Using BOTH Categories 1a and 1b:** **TOTAL SCORE/POINTS POSSIBLE (0-116)** **Exceeds (116)** **Meets (84-115)** **Developing (56-83)** **Limited (29-55)** **Does Not Meet (0-28)** **_____ /116**	**OVERALL SCORE: _____ pts**

Comments:_____

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