Nebraska Instructional Materials Collaborative Science Observation Rubric

This tool allows instructional leaders to provide content-specific feedback to classroom teachers throughout cycles of observation. The core actions within describe the standards-alignment and grade-appropriateness of content, teacher actions, and the depth of student ownership and engagement. Instructional leaders can use the tool to inform the district's vision of excellent science instruction and identify areas of strength and growth. This tool is not meant to be evaluative in nature nor should it replace an established system or framework for the assessment of educator effectiveness. For more information about the selection and implementation of high-quality instructional materials, please visit nematerialsmatter.org.

Standard Alignment: Does the lesson reflect the demands of the standards?	
Instruction meets the demand of the standard or pairing of standard(s).	The instruction meets the expectations as written in the standard(s) - Core Actions 1, 2, and 3 **4 –** Fully meets **3 –** Mostly meets **2 –** Partially meets **1 –** Does not meet

Core Action 1: Does the lesson reflect the phenomena-driven, three-dimensional (disciplinary core ideas, science and engineering practices, and crosscutting concepts) vision of the standards?	
A. A phenomenon or problem (intended to help students make sense of the world or solve problems) aligned to standard(s) drives the lesson.	**4 —** A phenomenon/problem aligned to the standards drives the lesson and is explicitly connected to student culture/experience/community. **3 —** A phenomenon/problem aligned to the standards drives the lesson. **2 —** A phenomenon/problem is present but is used as an example and does not drive the lesson. **1 —** No phenomenon/problem aligned to the standards is used in the lesson.
B. Materials and/or tasks integrate grade-band appropriate elements of the three dimensions of the standard(s) (i.e., DCIs, SEPs, and CCCs).[1]	**4 —** The materials and/or tasks integrate grade-band appropriate elements of all three dimensions of the standards. **3 —** The materials and/or tasks integrate grade-band appropriate elements of only two dimensions of the standards. **2 —** The materials and/or tasks integrate grade-band appropriate elements of only one dimension of the standards. **1 —** The materials and/or tasks DO NOT integrate grade-band appropriate elements of any of the three dimensions of the standards.

Core Action 2: Does the teacher employ instructional practices that integrate the three dimensions of the standards and support students in figuring out phenomena?	
A. Teacher provides opportunities for students to make connections with prior and new knowledge in order to build explanatory ideas that support figuring out phenomena and designing solutions.	**4 —** Teacher uses tasks and/or questions that support students in constructing an explanation of instructional phenomena by connecting science content knowledge gained in the classroom AND through lived experiences. **3 —** Teacher uses tasks and/or questions that allows students to connect instructional phenomena to science content knowledge gained in the classroom. **2 —** Teacher uses tasks and/or questions that allow students to make thinking around science content visible but does not support connections to instructional phenomena. **1 —** Teacher does not use tasks and/or questions that allow students to make thinking visible around science content or instructional phenomena.
B. Teacher provides opportunities for students to observe phenomena and supports students in making current explanatory ideas visible to self, peers, and the teacher throughout the instructional unit.	**4 —** Teacher uses observable phenomena in the lesson in a way that explicitly connects to student culture and/or community and tasks/questions allow students to make current explanatory ideas visible in a variety of ways. **3 —** Teacher uses observable phenomena in the lesson but does not relate to student culture/community; tasks/questions require students to make current explanatory ideas visible in one way. **2 —** Teacher does not make phenomena observable or incorporate tasks/questions that allow students to make current explanatory ideas visible. **1 —** Teacher does not utilize phenomena as a driver in the lesson.
C. All students, including children living in poverty, English learners, and children with disabilities, consistently receive supportive feedback that affirms their abilities and potential as mathematicians.	**4 —** The teacher consistently provides feedback that affirms the abilities and potential of a variety of individual students and includes precision and nuance unique to the student's work. **3 —** The teacher consistently provides feedback that affirms the abilities and potential of a variety of individual students and extends beyond stating answers are right or wrong. **2 —** The teacher provides feedback that affirms the abilities and potential of a limited set of individual students and extends beyond simply stating answers are right or wrong. **1 —** The teacher does not provide feedback that affirms the abilities and potential of individual students beyond stating answers are right or wrong.
D. Teacher provides explicit opportunities for students to reason with key science ideas using crosscutting concepts to support making sense of phenomena.	**4 —** Tasks/questions explicitly require students to consider one or more crosscutting concepts and how they impact their explanations of instructional phenomena. **3 —** Tasks/questions explicitly require students to consider one or more crosscutting concepts but do not require students to make connections back to their explanation of instructional phenomena. **2 —** Tasks/questions provide implicit opportunities for students to consider one or more crosscutting concepts. **1 —** Tasks/questions don't provide opportunities for students to consider one or more crosscutting concepts.

E. Teacher surfaces current explanatory ideas from students and provides opportunities for students to share, consider, respond to each other's ideas.	**4 —** Teacher leads discussions in a way that allows individual students to discuss their current explanatory ideas with the whole class and ask questions that direct students to question the ideas presented and reflect on changes in their own ideas or questions that surface. **3 —** Teacher leads discussions in a way that surfaces the explanatory ideas of some students and engages in opportunities for probing and challenging individual student ideas by the teacher. **2 —** Teacher leads discussions that connect to science content but do not surface explanatory ideas of students. **1 —** Teacher does not lead discussions and/or only asks questions centered on accuracy.
F. Students from historically marginalized communities consistently receive supportive feedback that affirms their abilities and potential as scientists.	**4 —** The teacher consistently provides feedback that affirms the abilities and potential of a variety of individual students and includes precision and nuance unique to students' work. **3 —** The teacher consistently provides feedback that affirms the abilities and potential of a variety of individual students and extends beyond stating answers are right or wrong. **2 —** The teacher provides feedback that affirms the abilities and potential of a limited set of individual students and extends beyond simply stating answers are right or wrong. **1 —** The teacher does not provide feedback that affirms the abilities and potential of individual students beyond stating answers are right or wrong.

Core Action 3: Does the lesson provide opportunities for ALL students to figure out phenomena by using the three dimensions?

A. Students are motivated by the phenomenon/problem to ask questions or predict how and why something happens or works.	**4 –** Most students **3 –** Some students **2 –** Few students **1 –** No students **NO –** Not observed
B. Students are able to connect the phenomena and/or the lesson activities to their personal experiences, culture, and/or community.	**4 –** Most students **3 –** Some students **2 –** Few students **1 –** No students **NO –** Not observed
C. Students share their understanding of elements of the disciplinary core ideas (DCIs) and/or crosscutting concepts (CCCs) in order to clarify, deepen, and/or extend thinking around phenomena.	**4 –** Most students **3 –** Some students **2 –** Few students **1 –** No students **NO –** Not observed
D. Students use the science and engineering practices (SEPs) to gather, make sense of, and/or critique evidence in order to explain science concepts and figure out phenomena. E. Students assess and explain how their ideas about the phenomena change throughout the lesson. F. Students consider next steps for figuring out how and why the phenomena happens or works.	**4 –** Most students **3 –** Some students **2 –** Few students **1 –** No students **NO –** Not observed **4 –** Most students **3 –** Some students **2 –** Few students **1 –** No students **NO –** Not observed **4 –** Most students **3 –** Some students **2 –** Few students **1 –** No students **NO –** Not observed

Student Mastery: Did students master or move toward mastery of the content of the lesson?

Students are moving toward a strong grasp of the content of the lesson.	**4 –** Most students **3 –** Some students **2 –** Few students **1 –** No students

Observation Notes

Classroom/Teacher/Objective/Standard(s)	

Content/Task(s)	**Teacher/Student Evidence**
Note: If any uncorrected mathematical errors are made during the context of the lesson (instruction, materials, or classroom displays), note them here.	
3 Summary Bullet Points:	