Science Classroom Observation Tool (Based on Instructional Practice Guide)

The purpose of this tool is to determine the current state of instruction and to identify areas of focus for planning, acting, and continuously improving.

Standard Alignment: Does the lesson reflect the demand of the standards?	
The instruction meets the demand of the 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.	1 (Yes) - A phenomenon/problem aligned to the standards drives the lesson. 0 (No) - No phenomenon/problem aligned to the standards drives 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 makes explicit connections to the prior and/or upcoming lessons to help students build their understanding of phenomena in a coherent manner.	4 - Teacher makes explicit connections that support students in making their own connections that build a coherent understanding of phenomena. 3 - Teacher makes explicit connections but does not support students in making their own connections that build a coherent understanding of phenomena. 2 - Teacher makes implicit connections; students understand the current lesson's content but do not connect that to the phenomena. 1 - Teacher makes implicit connections; students do not exhibit understanding of current content or phenomena.
B. Teacher provides access to observable components of phenomena to support students' development of models, explanations, and/or arguments that demonstrate current understanding of the science disciplinary core ideas (DCIs).	4 - Experiences that can be observed are used in the lesson; students make their thinking about the content (DCIs) visible. 3 - Experiences that can be observed are used in the lesson; students are asked to make their thinking about the content (DCIs) visible but struggle to do so. 2 - Experiences that can be observed are used in the lesson, but students are not asked to make their thinking about the content visible. 1 - Experiences that can be observed are NOT used in the lesson.
C. Teacher models and supports students in engaging in the science and engineering practices (SEPs) to gather, make sense of, and/or critique evidence to figure out phenomena.	4 - Teacher models and frequently supports students' use of the science and engineering practices (SEPs). 3 - Teacher models but infrequently supports students' use of the science and engineering practices (SEPs). 2 - Teacher does not model but supports students' attempts to use the science and engineering practices (SEPs). 1 - Teacher does not model or support students' use of the science and engineering practices (SEPs).
D. Teacher facilitates opportunities to reason through the lens of the crosscutting concept(s) (CCCs) to make sense of phenomena.	4 - Teacher facilitates whole-class discussions in which students make sense of phenomena through the lens of one or more CCCs. 3 - Teacher facilitates opportunities that support individual students in making sense of phenomena through the lens of one or more CCCs. 2 - Teacher probes students but discussion/task does not support students in making sense of phenomena through the lens of one or more CCCs. 1 - Teacher does not probe students or facilitate any discussion.
E. Teacher tracks and elevates changes in student thinking in a way that supports whole-class sensemaking of phenomena.	4 - Teacher tracks and elevates changes in student thinking in a way that supports whole-class sensemaking of phenomena. 3 - Teacher tracks changes in student thinking but does not elevate in a way that supports whole-class sensemaking of phenomena. 2 - Teacher tracks current student thinking and elevates only "correct" responses in the classroom. 1 - Teacher does not track student thinking, and/or teacher tracks completion of tasks only (without evaluating student thinking).

[1] NSTA. (n.d.). *NGSS Tools*. NGSS@NSTA. https://ngss.nsta.org/ngss-tools.aspx.

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.	4 - Most students	3 - Some students	2 - Few students	1 - No students	NO - Not observed
E. Students assess and explain how their ideas about the phenomena change throughout the lesson.	4 - Most students	3 - Some students	2 - Few students	1 - No students	NO - Not observed
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
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: