

Science Shifts Class Visit Tool

Purpose: As schools implement The Science Shifts , this tool will be used to learn more about their implementation. We hope that it will be used in a variety of ways to support the implementation of the science shifts, including as a walkthrough tool to determine coaching and professional learning needs, **as a self-reflection tool for teachers**, and for principals to assess school-level implementation. This tool will also support systemwide cohesion and clarity around expectations for instruction. It is intended to be iterative and will be revised based on experience using the tool, and through feedback from schools, districts, and various stakeholders. During the classroom observation, examine the classroom environment and student work, including science notebooks, and speak to students to determine evidence of look-fors not directly observed in instruction and to gauge whether indicators are happening consistently.

This tool is meant to provide information about the progress of the Science Shifts and HQIM rollout, as well as give educators guidance for reflection. It is not for evaluation of individuals and cannot be used as an artifact for Advance observations or to support PPO ratings or for a teacher or principal’s personnel file. It is also not intended to provide recommendations to teachers that would contradict or conflict with any existing practices used to effectively support students with IEPs, 504s, or other support plans. All HQIM should be used in accordance with state and local requirements for supporting students.

Each item on the tool is binary. It is expected that observers will see partial evidence of many shifts during a class visit. Observers should select the indicator if most of the students, including a diverse cross-section of students, experienced that indicator.

The tool includes many indicators, no single lesson would showcase all of the indicators.

Observed Indicators: The tool is structured around three sections of indicators that align with the [NYC Vision for Science](#) and the [Science Shifts](#). The first two parts focus on the teaching practices and instructional moves aligned with the Shifts, and the third focuses on student agency and discourse that take place as a result of teacher moves.

- **Part 1 – About the Class Visit**
 - **Part 2 – Learning Progressions and Use of High Quality Instructional Materials (HQIM)**
 - **Part 3 – Instruction**
 - **Part 4 – Student Agency and Discourse**
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Classroom Visit Form

Part 1. About the Classroom Visit

Class Visitor Name			Curriculum		
Class Visit Date			Place	Total Minutes of visit	
Grade Level		Unit Title		Lesson	
Which part of the lesson did you visit/observe? - First part of the lesson (e.g., Activity launch AND Discourse-driven, structured work time) - Middle to end of the lesson (e.g., Discourse-driven, structured work time AND Activity or lesson closure)					

Part 2. Coherent Progression of Learning

Shifts alignment: SHIFT 1. BEGINNING WITH CURIOSITY; SHIFT 5. SHARED HIGH-QUALITY INSTRUCTIONAL MATERIALS
Instructions: For the section of the lesson you visited, please select the indicators that describe the Shifts you observed.

Note: For this section, it is imperative that you have access to the original lesson from the HQIM.

Section	What evidence of the Shifts do you see during the Class Visit? Select all that apply.	NOTES
1. HQIM Materials Use The adopted curriculum program is consistently used for classroom instruction, in support of three-dimensional learning. SHIFT #1, #5	☐ HQIM materials are used, without the substitution or addition of isolated science lessons or activities. ☐ HQIM lesson structure is used, including all parts of the lesson, even if some sub-activities are shortened or skipped. ☐ Facilitates HQIM activities with attention to various elements of three-dimensional learning. (check all that apply) ☐ Crosscutting concepts (how students think) ☐ Science and engineering practices (what students do) ☐ Core Ideas (what students learn) ☐ Includes an HQIM routine that provides an opportunity to (check all that apply) ☐ examine claims, ☐ evaluate supporting evidence ☐ construct explanations and evidence-based arguments. ☐ Does the class contain ELLs in need of supports? ☐ Identifies and uses the HQIM supports for ELLs ☐ Supports are used based on formative assessment of student needs ☐ Does the class contain SWDs in need of supports? ☐ Identifies and uses the HQIM supports for SWDs (while maintaining alignment with IEPs, 504s, or other support plans) (if there are SWDs, or if needed) ☐ Supports are used based on formative assessment of student needs	☐
2.Coherent Progression of Learning Tasks and activities reflect appropriate grade-level cognitive demands. Student work is used for	☐ Connection is made between the day's lesson and prior or future lessons, providing students access to the storyline of the unit. ☐ Instruction focuses on the development of the grade-band appropriate elements of the three-dimensions of learning. ☐ Crosscutting concepts (how students think) ☐ Science and engineering practices (what students do) ☐ Core Ideas (what students learn)	☐

reflection, feedback, and monitoring progress towards the achievement of learning progressions milestones for the grade band. SHIFT #1, #4, 5	☐ Lessons include time for students to reflect on the stages of development of the specific practices, core ideas, and crosscutting concepts that were addressed during the lesson. ☐ Feedback supports students in taking action that will advance them through the learning progressions for the grade band. (check all that apply) ☐ Feedback is specific ☐ Feedback is asset based, helping a student use something they have done well to advance their thinking ☐ Feedback supports students in thinking rather than providing a procedure ☐ Time is provided to students to implement this feedback to strengthen their claims or arguments.	
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Part 3. Instruction

Shift alignment: SHIFT 2: EVIDENCE-BASED RESPONSES TO COMPLEX QUESTIONS; SHIFT 3. DISCOURSE TO DEVELOP UNDERSTANDING; SHIFT 4. ASSET-BASED LEARNING

Instructions: For the relevant sections of the lesson you visited, please select the indicators that describe the Shifts you observed. Note: If you visit the first section of the lesson, please complete the **Engaging Activities** and **Structured Instructional Time for ‘Exploring and Explaining’** sections. If you visit the second part of the lesson, please complete the **Structured Instructional Time for ‘Exploring and Explaining’** and **Reflection and/or ‘Lesson Closure’** sections. Please note that a lesson may take place over multiple periods, this tool should be used according to the part of the lesson that was observed.

Section	What evidence of the Shifts do you see during the Class Visit? Select all that apply.	NOTES
1. Engaging Activities <i>The teacher helps students make connections between the day's lesson and the ongoing storyline.</i> <i>The teacher ensures students understand the purpose and expectations of the activity.</i> SHIFT #1, 4	☐ The lesson begins with a connection between previous classroom and/or life experience based learning and the phenomenon being investigated. ☐ Time and structure is provided for students to make sense of learning objectives. ☐ Time and structure is provided for students to make sense of the ways in which the science and/or engineering practices will support the development of the learning objectives. ☐ Engagement activities leverage and develop curiosity about the natural world. ☐ Opening is brief (5–10 minutes).	☐
2. Discourse–Driven Structured Instructional Time <i>A wide array of activities are designed in the curriculum program to provide multiple entry points and access for the development of practices and core ideas.</i> SHIFT #2, #3	☐ Questions provoke student thinking, not just check for correct responses. ☐ Instructional activities include “hands-on” opportunities for students to develop and/or investigate their own questions to help students understand the phenomenon. ☐ Instructional activities include the reading of complex texts to help students understand the phenomenon. ☐ Instructional activities include opportunities for students to make sense of evidence connected to the phenomenon. ☐ During student discourse, protocols are used for listening, asking questions, connecting ideas, analyzing data, revising claims and evidence, and or revising models and/or systems. ☐ Active development of science and/or engineering practices happens through (check all that apply): ☐ Asking question/defining problems ☐ Developing and Using Models ☐ Planning and Carrying Out Investigations	☐

	☐ Mathematical and Computational Thinking ☐ Analyzing and Interpreting Data ☐ Constructing Explanations or Designing Solutions ☐ Engaging in Argument from Evidence ☐ Obtaining, Evaluating and Communicating Information ☐ Crosscutting concepts are used as a lens for organizing thinking and for making connections of science ideas. (check all that apply): ☐ Patterns ☐ Cause & Effect ☐ Scale, Proportion & Quantity ☐ Systems and System Models ☐ Energy and Matter ☐ Structure and Function ☐ Stability and Change	
3. Reflections and/or Lesson Closure <i>Lesson includes summary of new ideas and their connection to the unit phenomenon, and a reflection on learning and next steps.</i> <i>SHIFT #3, #4</i>	☐ Whole class discussion summarizes the lesson’s learning, grounded in student work gathered using formative assessment tools (e.g., On-the-Fly) ☐ Lessons incorporate reflection routines (e.g., Domino Discover, Discussion of Annotations) to summarize the ideas learned and connect to the investigation question and the anchor phenomenon. ☐ The lesson closes with the gathering of lingering questions with the expectation of continuing investigating the phenomenon during upcoming lessons.	☐

Part 4. Student Agency and Discourse

Shifts alignment: SHIFT 3. DISCOURSE TO DEVELOP UNDERSTANDING; SHIFT 4. ASSET-BASED LEARNING, SHIFT 5: SHARED HIGH-QUALITY INSTRUCTIONAL MATERIALS
Instructions: For the section of the lesson you visited, please select the indicators that describe the Shifts in student agency and engagement that you observed.

Section	What evidence of the Shifts do you see during the Class Visit that clearly promotes student agency/equity and access for all students to science learning? Select all that apply.	NOTES
1. Student Agency and Engagement Protocol implementation is informed by supporting documentation in place for SWDs and ELLs, and benefits learning for all in the classroom. Protocols and routines enable ownership of the learning process. SHIFT #4	☐ When work time begins, students take initiative and begin the activity, without waiting for the teacher’s intervention. ☐ Students explain their thinking in writing or pictorially. ☐ Students engage with, represent, or express science ideas (e.g., craft a specific question, compare solutions and/or strategies, step back to think, draw a picture first, choose another tool). ☐ If initially unsuccessful, students try alternative strategies. ☐ Students revise their thinking and/or written work, or add more detail, without being prompted by the teacher. ☐ The classroom environment provides a safe space to share thinking and imperfect scientific reasoning. ☐ Differentiation strategies set by HQIM are used without bias/prejudice/labeling. ☐ Activities/tasks for the lesson build on personal experiences, abilities, cultural backgrounds, and prior knowledge that help students construct explanations or arguments, and/or propose solutions to problems. (Asset-based learning).	☐
2. Student Scientific Discourse Resources are used during instruction to engage in examination of evidence and claims through productive/ collaborative argumentation and analysis. Protocols are used to structure instructional time and allow for active participation of all group	☐ Implementation of routines allows for active participation of all while engaged in science discourse. ☐ When asked to work with a partner or group, most students work with a partner or group (instead of working mostly independently, all students have a group). ☐ Students share their claims, reasoning, or evidence, in addition to sharing answers or procedures. ☐ Students extend their verbal discourse, perhaps by using a second sentence (instead of short responses, like yes/no, agree/disagree). ☐ *Note: Students’ linguistic development should be considered. ☐ Academic vocabulary is used consistently and accurately across	☐

members. <i>Resources integrate the development of various SEPs such as, using models, constructing explanations, analyzing and interpreting data, as a pivotal part of discourse.</i> <i>SHIFT #3, #5</i>	working groups. ☐ Science language and academic vocabulary strategies are used to support all students, including MLLs, SWDs (e.g., graphic organizers, sentence strips, sentence starters). ☐ Students actively seek to listen to and learn from other students' ideas. ☐ Students refer to peer's thinking, cite other's work, integrate, or make connections to their own reasoning.	
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