Evaluate Next Generation Aligned Materials Using EQuIP Rubric for Science

MIDDLE SCHOOL SCIENCE
Career & College Readiness Conferences
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To what extent have you interacted with this document?
A. I've read it thoroughly.
B. I've skimmed it for general information.
C. It's on my bookshelf.
D. Huh?

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How about this one?
A. I've read it thoroughly.
B. I've skimmed it for general information.
C. It's on my bookshelf.
D. No clue
Or this one?

A. I’ve read it thoroughly.
B. I’ve skimmed it for general information.
C. It’s on my bookshelf.
D. It’s the first time I’ve seen it.

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Developing Criteria for the Next Generation Science Standards

Outcomes

• Identify the purpose of the EQuIP Rubric for Science
• Identify the elements (expectations) of the Rubric that supports implementation of NGSS
• Evaluate a lesson using the EQuIP Rubric for Science
The EQuIP Rubric for Science provides criteria by which to measure the alignment and overall quality of lessons and units in respect to NGSS.


What is the EQuIP Rubric?

The EQuIP Rubric for Science is used to
- provide meaningful, constructive feedback to developers of lessons or units.
- review existing instructional materials to determine what revisions are needed.
- identify exemplars/models for teachers to use.
- guide collegial review and jurying processes.

What is the Purpose of EQuIP Rubric for Science?

The EQuIP Rubric for Science is used to
- lessons that include instructional activities and assessments aligned to the NGSS that may extend over a few class periods.
- units that include integrated and focused lessons aligned to the NGSS that extend over a longer period of time.

Intended Use

The rubric is designed to evaluate
- lessons that include instructional activities and assessments aligned to the NGSS that may extend over a few class periods.
- units that include integrated and focused lessons aligned to the NGSS that extend over a longer period of time.
Using what you know about NGSS, identify important considerations or criteria to consider when evaluating the alignment of a lesson or unit with NGSS.

Addressing the NGSS Shifts

Shifts in NGSS for K-12 science: Both Evolutionary and Revolutionary

1. Organized around disciplinary core ideas (explanatory ideas)
2. Central role of scientific practices
3. Coherence: building and applying ideas across time
Conceptual Shifts in the NGSS

1. K-12 science education should reflect the interconnected nature of science as it is practiced and experienced in the real world.
2. The Next Generation Science Standards are student performance expectations – NOT curriculum.
3. The science concepts build coherently from K-12.
4. The NGSS focus on deeper understanding of content as well as application of content.
5. Science and Engineering are integrated in the NGSS from K-12.
6. NGSS content is focused on preparing students for college, careers, and citizenship.
7. The NGSS and Common Core State Standards (English Language Arts and Mathematics) are Aligned.

NGSS “is designed to help realize a vision for education in the sciences and engineering in which students, over multiple years of school, actively engage in scientific and engineering practices and apply crosscutting concepts to deepen their understanding of the core ideas in these fields.”

A lesson or unit may provide opportunities for students to demonstrate performance of practices connected with their understanding of core ideas and crosscutting concepts as foundational pieces.
This three dimensional learning leads toward eventual mastery of performance expectations.

A Look at the Rubric
I. Alignment to the NGSS

The lesson or unit aligns with the conceptual shifts of the NGSS:
- Elements of the science and engineering practice(s), disciplinary core idea(s), and crosscutting concept(s), blend and work together to support students in three-dimensional learning to make sense of phenomena or design solutions.
- Provides opportunities to use specific elements of the practice(s) to make sense of phenomena or design solutions.
- Provides opportunities to construct and use specific elements of the disciplinary core idea(s) to make sense of phenomena or design solutions.
- Provides opportunities to construct and use specific elements of the crosscutting concept(s) to make sense of phenomena or design solutions.

Column I
Lessons

3 Dimensional Learning

Column I
Units

Coherence in building and applying ideas over time.

Connections with MCCS in Math and Literacy

Column 2
Instructional Supports

What are the instructional supports identified in the rubric that are a valued indicator of quality instruction for all students?
Monitoring Student Progress

Look for evidence of assessments that demonstrates:

- alignment to 3 dimensions of learning.
- observable evidence of performance.
- embedded formative assessment.
- use of rubrics and scoring guidelines.
- a variety of methods.
- accessibility to all students.

Group Review

Step 1 – Review Materials

Become familiar with the rubric, the lesson, or unit, and the practices, disciplinary core ideas, and crosscutting themes targeted in the lesson.
Review rubric and record lesson/unit title and grade.

Scan the organization of the lesson/unit to identify core ideas, practices, and crosscutting concepts.

Read key materials related to instruction, assessment and teacher guidance.

Step 2 – Apply Criteria in Column I: Alignment

Evaluate the lesson/unit using the criteria in the first columns.

Check those criteria for which clear and substantial evidence is found.

Step 3 – Apply Criteria in Columns II And III Instructional Supports and Monitoring Student Progress

Evaluate the lesson or unit using the criteria in the second and third columns.

Individually check and record each criterion on the response from for which clear and substantial evidence is found.

Identify criterion-based suggestions for improvements.
The goal is to determine agreement about quality with respect to NGSS.

Use evidence identified during the review process to discuss the alignment of the lesson to each element in Column I, II, and III.

Discuss suggestions for improvement or revisions to better align the lesson with the elements identified on the rubric.

Team Discussion

Share evaluations of lessons

Outcomes

- Identify the purpose of the EQuIP Rubric for Science
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- Evaluate a lesson using the EQuIP Rubric for Science
Resources

http://www.nap.edu/catalog.php?record_id=13165#

Developing Assessments for the Next Generation Science Standards
http://www.nap.edu/download.php?record_id=18409

NSTA
http://ngss.nsta.org/access-standards/

NAEP Released Items

TIMSS Released Items
http://nces.ed.gov/timss/educators.asp

PISA Released Items
http://nces.ed.gov/surveys/pisa/educators.asp

Exit Slip

- Write a message that describe the implications of using the NGSS EQuIP Rubric for teaching and learning in YOUR classroom.
- Tweet
- Message
- Facebook

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