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STEM Synergy & Keep Indiana Learning - Science Resource Analysis

Quick Reference Guide

This tool has been developed for K-12 educators to use when conducting an initial analysis of science related instructional resources. This tool was developed from the content provided in the NGSS Lesson Screener which is designed to be used to quickly evaluate a coherent set of science instructional activities and assessments that may extend over several class periods or days. This tool should not be used to fully vet resources and its use is not sufficient to claim that the lessons are fully designed for the NGSS. The NGSS Lesson Screener and/or the EQuIP Rubric for Science should be used to conduct a complete evaluation of NGSS design for lessons and units and the Primary Evaluation of Essential Criteria (PEEC) should be used for evaluating full curricula or instructional materials programs.

Criterion	Criterion Question 1	Criterion Question 2	Does the resource meet the criterion?
A. Explaining Phenomena or Designing Solutions	Does the lesson focus on supporting students to make sense of a phenomenon or design solutions to a problem?	<i>Is there evidence that either student problem-solving or sense-making of phenomena drives the lesson?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
B. Three Dimensions	Does the lesson help students develop and use multiple grade-appropriate elements of the science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs) which are deliberately selected to aid student sense-making of phenomena or designing of solutions?	<i>Is it clear how the student learning will develop or apply a specific element in a way that distinguishes it from other grade bands?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
C. Integrating the Three Dimensions for Instruction and Assessment	Does the lesson require student performances that <u>integrate</u> elements of the SEPs, CCCs, and DCIs to make sense of phenomena or design solutions to problems, and the lesson elicits student artifacts that show direct, observable evidence of three-dimensional learning?	<i>Does the lesson use the three dimensions together to explain a phenomenon or design a solution to a problem?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
D. Relevance and Authenticity	Does the lesson motivate student sense-making or problem solving by taking advantage of student questions and prior experiences in the context of the students' home, neighborhood, and community as appropriate?	<i>While examining the lesson through the "lens" of student engagement, is there clear evidence that the lesson supports connections to students' lives?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
E. Student Ideas	Does the lesson provide opportunities for students to express, clarify, justify, interpret, and represent their ideas (i.e., making thinking visible) and to respond to peer and teacher feedback?	<i>Does the lesson include opportunities for all students to communicate their ideas and for the depth to which student ideas are made visible?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
F. Building on Students' Prior Knowledge	Does the lesson identify and build on students' prior learning in all three dimensions in a way that is explicit to both the teacher and students?	<i>Does the lesson build on students' prior learning in each of the three dimensions?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No

Click [here](#) for information on the NGSS developed resources used to create this quick reference guide and to learn more about the NGSS criterion.



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NGSS Claims & Guiding Questions to Ask Publishers & Vendors

Claim Category	Claim Defined	How this claim may look or sound	Guiding Questions to Ask the Publisher/Vendor
Buzzword	Words that represent critical aspects of science education, and could be part of quality claims, but because they are used so frequently and in so many contexts, their meaning has become obscured.	Students will learn with inquiry based/NGSS/ phenomena/3D/research based instruction.	Can you explain your definition of ____ (the buzzword)? What specific examples can you show me of how your materials would meet this claim?
Authority	Intentionally connects the development of materials to people or organizations that either have or are perceived to have a connection to the NGSS. <i>*NOTE: It is not who has developed the materials that matters it's the quality of the materials themselves.</i>	NGSS authors are our content experts. The advisory committee for our product included ____ who was on the NGSS writing team.	What is the specific relevant expertise of the person that is referenced? What role did they play in the development of the materials?
By Association	Is indirect and implicit, encouraging someone to make an inference about the association the material has with the NGSS.	Similar logo or use of logo colors as the NGSS Using "Next Generation" in material titles	Since this is not an explicit claim, there may not be anything to verify, but it is important to be aware of the effects of packaging. Pay special attention to the more subtle claims being made including colors, logos, etc. <i>*Suggestion: Do not be misled by packing that resembles the NGSS.</i>
Alignment or Correlation	Based on an analysis that compares what is covered in instruction materials, to what is covered by the standards, and is often what is being referred to when a set of materials is said to be aligned to the NGSS. <i>*NOTE: The quality of this claim lies both and what is meant by alignment or correlation, and what assumptions are made based on alignment.</i>	Standard checklists Correlation charts The science and engineering practices are integrated throughout the curriculum.	Does the claim include a description of correlation with all three dimensions? Is there information at the grade appropriate level for each of the dimensions? Does the student learning reference to the materials match the learning that is claimed? <i>*Suggestion: Spot check several of the claim connections to the standards to verify to what degree the materials address the part of the standard claimed.</i>
Designed for the NGSS	Echos language from NGSS documents to describe how different the NGSS is from previous sets of standards, therefore requiring instructional materials to be crafted for the NGSS. <i>*NOTE: This is often seen as a showcase of an analysis of the materials and the NGSS EQUIP tools.</i>	When evaluating on the EQUIP rubric our materials get a high score. Fulfills 100% of the NGSS.	How were these materials designed specifically for the NGSS? <i>*Suggestion: if the claim includes the EQUIP rubric, ensure a copy of the completed rubric is provided.</i>

Click [here](#) for information on quality claims and to access the NGSS resources used to develop this tool.