Oregon Instructional Materials Evaluation Toolkit (OR-IMET) for Alignment in Science, Grades 6-8

In alignment with Oregon educational goals, including the 40-40-20 initiative, evidence of best practices of equitable inclusion are embedded in the OR-IMET. The Oregon Science IMET is designed to help educators determine whether instructional materials will assist students and educators to see and understand the conceptual shift necessary for high-level science education. The Shifts of the Next Generation Science Standards (NGSS) in Appendix A are at the heart of the new vision for science education.

1. **Focus:** Instructional materials should focus on the limited number of Disciplinary Core Ideas (DCI) at appropriate grade band in the Next Generation Science Standards (NGSS), not numerous disconnected factoids and details. Students engage with meaningful phenomena and problems that can be explained or solved through the application of Science and Engineering Practices (SEP) and Crosscutting Concepts (CCC).
2. **Rigor:** Instructional materials should support robust, culturally responsive instruction for each of the three dimensions to allow for conceptual understanding, procedural skills, and applications of the NGSS.
3. **Coherence**: Instructional materials should provide strong links among the three dimensions of the NGSS within and between each unit, grade level, and grade span for a unified learning experience. The materials should form a progression in which students actively engage in Science and Engineering Practices (SEP) and apply Crosscutting Concepts (CCC) to continually build on and revise their knowledge and abilities in each field's core ideas over multiple years.

The OR-IMET draws directly from the following documents:

- Framework of K12 Science Education (http://www.nap.edu/catalog/13165/a-framework-for-k-12-science-education-practices-crosscutting-concepts)
- Next Generation Science Standards (http://www.nextgenscience.org)
- NGSS EQUIP Rubric for lessons and units (http://www.nextgenscience.org/equip-rubric-science-released)
- NGSS Primary Evaluation of Essential Criteria for Alignment (Draft Version, May 2015) (http://www.nextgenscience.org/ngss-peec-alignment)
- Taking Science to School (http://www.nap.edu/catalog/11625/taking-science-to-school-learning-and-teaching-science-in-grades)

When to Use the OR-Science IMET

This tool is designed to evaluate how closely aligned instructional materials are to the Shifts and the major features of the NGSS. It also provides suggestions of additional indicators to consider in the materials evaluation and purchasing process. The OR-IMET can be used to highlight specific, concrete flaws in alignment. Even where materials and tools currently in use fail to meet one or more of these criteria, the pattern of failure is likely to be informative. Districts can use the evaluation to create a thoughtful plan to modify or combine existing resources in such a way that students' actual learning experiences approach the focus, coherence, and rigor of Oregon's State Science Standards. Additionally, those developing new materials can use this tool as guidance for creating aligned curricula. The OR-IMET is intended to be used when:

1. **Purchasing materials;**
2. **Evaluating materials currently in use; or**
3. **Developing district materials.**

Who Uses the OR-Science IMET

Evaluating instructional materials requires both subject-matter and pedagogical expertise. Evaluators should be well versed in the Standards (www.nextgenscience.org) for all grades in which materials are being evaluated. This includes understanding of A Framework for K-12 Science Education, the Supporting and Additional work, how the content fits into the progressions in the Standards (Appendix E), and the expectations of the Standards with respect to three-dimensional learning. Evaluators also should be familiar with the substantial Conceptual Shifts (Appendix A) at the heart of the Next Generation Science Standards.

Please note this tool was designed for evaluating comprehensive curricula (including any supplemental or ancillary materials), but it was not designed for the evaluation of standalone supplemental materials.

	SECTION I: Alignment to the 2014 Science Standards (NGSS)			
Criterion 1: FOCUS Materials focus on in-depth learning of the NGSS disciplinary core ideas while engaging students in the scientific and engineering practices and connecting to crosscutting concepts in the context of authentic and content-appropriate science, and facilitate students developing a deeper understanding and application of scientific knowledge and the ability to think and reason scientifically while investigating complex ideas and solving problems. **4: Meets all criteria (8 points)** **3: Adheres to the criteria (6-7 points, no zeros)** **2: Sometimes adheres to the criteria (4-5 points)** **1: Occasionally adheres to the criteria (1-3 points)** **0: Does not meet the criteria** **Final Comments and Suggestions for Improvement:**	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	1a. In each 6-8 grade level, both student and educator materials, when used as designed, provide opportunities to develop and use specific elements of the practice(s) to make sense of phenomena and to design solutions to problems. *The Framework for K12 Science Education (NRC 2012): pp. 41 – 48 and the Science and Engineering Practices progressions identified in Appendix F.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Review a lesson or a unit to determine if the science and engineering practices are used to make sense of phenomena and to design solutions to problems. For each grade-level, select at least one performance expectation within each of the four major domains: physical science, life sciences, earth and space sciences, and engineering, technology and applications of science. (e.g. For Integrated Instructional Materials: **MS(6)-PS**3-3, **MS(6)-LS**1-1, **MS(6)-ESS**2-4, **MS(6-8)-ETS**1-3; For Content Specific Instructional Materials: **MS(8)-PS**4-2, **MS(7)-LS**2-5, **MS(6)-ESS**3-5, **MS(6-8)-ETS**1-4) *Grade levels are identified in bold according to the adopted MS sequence for Oregon.* **Questions to ask:** At each grade-level being reviewed, are the science and engineering practices explicit to the educator within the performance expectation(s) being addressed? Are the grade-appropriate science and engineering practices interwoven throughout the materials to build upon students' proficiency? Do the materials engage students to assist them in making sense of phenomena and provide opportunities to design solutions to problems?	0 1 2	
	1b. In each 6-8 grade level, both student and educator materials, when used as designed, provide opportunities to develop and use specific elements of the crosscutting concept(s) to make sense of phenomena and to design solutions to problems. *The Framework for K12 Science Education (NRC 2012): pp. 84 – 101 and the Crosscutting Concepts progressions identified in Appendix G.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* *****Choose different performance expectations than previously reviewed.***	Review a lesson or a unit to determine if the crosscutting concepts are used to make sense of phenomena and to design solutions to problems. For each grade-level, select at least one performance expectation** within each of the four major domains: physical science, life sciences, earth and space sciences, and engineering, technology and applications of science. (e.g. For Integrated Instructional Materials: **MS(7)-PS**1-3, **MS(7)-LS**2-4, **MS(7)-ESS**2-2, **MS(6-8)-ETS**1-1; For Content Specific Instructional Materials: **MS(8)-LS**3-1, **MS(7)-ESS**3-2, **MS(6)-PS**3-3, **MS(6-8)-ETS**1-2) *Grade levels are identified in bold **(6), (7) and (8)** according to the adopted MS sequence for Oregon.* **Questions to ask:** At each grade-level being reviewed, are the crosscutting concepts explicit to the educator within the performance expectation(s) being addressed? Are the grade-appropriate crosscutting concepts interwoven throughout the materials to build students' proficiency? Do the materials engage students to assist them in making sense of phenomena and provide opportunities to design solutions to problems?	0 1 2	

	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	1c. In each 6-8 grade level, both student and educator materials, when used as designed, provide opportunities to develop and use specific elements of the disciplinary core idea(s) to make sense of phenomena and to design solutions to problems. *The Framework for K12 Science Education (NRC 2012:) pp. 103 – 214 and the Disciplinary Core Ideas progressions identified in Appendix E.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* ***Choose different performance expectations than previously reviewed.**	Review a lesson or a unit to determine if the disciplinary core ideas are used to make sense of phenomena and to design solutions to problems. For each grade-level, select at least one performance expectation** within each of the four major domains: physical science, life sciences, earth and space sciences, and engineering, technology and applications of science. (e.g. For Integrated Instructional Materials: **MS(8)-PS**3-2, **MS(8)-LS**4-4, **MS()-ESS**3-4, **MS(6-8)-ETS**1-1; For Content Specific Instructional Materials: **MS(8)-ESS**3-4, **MS(7)-PS**1-3, **MS(6)-LS**1-5, **MS(6-8)-ETS**1-4) *Grade levels are identified in bold **(6), (7) and (8)** according to the adopted MS sequence for Oregon.* **Questions to ask:** At each grade-level being reviewed, are the disciplinary core ideas explicit to the educator within the performance expectation(s) being addressed? Are the grade-level appropriate disciplinary core ideas interwoven throughout the materials to build students' proficiency? Do the materials engage students to assist them in making sense of phenomena and provide opportunities to design solutions to problems?	0 1 2	
	1d. In each 6-8 grade level, in student and educator materials, when used as designed the three-dimensions work together to support students to make sense of phenomena and to design solutions to problems. *The Framework for K12 Science Education (NRC 2012): pp. 217 – 240.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	In each grade-level being evaluated, select a least one entire unit not previously examined, consider the amount of time spent on the three-dimensional learning components. When used as designed, the amount of time devoted to the integration of the performance expectations to make sense of phenomena and to design solutions to problems is at least 70%. **Questions to ask:** Are the science and engineering practices, crosscutting concepts and disciplinary core ideas interwoven throughout the materials to provide contextualization to further students' understanding of the world around them? Do the materials provide opportunities for engagement and application to make sense of phenomena and to design solutions to problems? Are the performance expectations presented in isolation of one another or are the performance expectations bundled together for deeper scientific understanding?	0 1 2	

	SECTION I: Alignment to the 2014 Science Standards (NGSS)			
Criterion 2: RIGOR Materials support and guide in-depth instruction in the three intertwined NGSS dimensions*, support the integration of conceptual understanding linked to explanations and empirical investigations that allow students to evaluate knowledge claims and develop procedural skills while engaging in authentic and content-appropriate scientific inquiry and engineering design learning experiences, and provide opportunities for students to engage in practice, discourse, and reflection in multiple interconnected and social contexts. **4: Meets all criteria (8 points)** **3: Adheres to the criteria (6-7 points, no zeros)** **2: Sometimes adheres to the criteria (4-5 points)** **1: Occasionally adheres to the criteria (1-3 points)** **0: Does not meet the criteria** **Final Comments and Suggestions for Improvement:**	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	2a. Materials support the development of students' conceptual understanding of the natural world through experiential investigations by providing three-dimensional opportunities to fully engage and interpret scientific explanations. *The Framework for K12 Science Education (NRC 2012): pp. 41 – 53 and Appendix F.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Select at least three authentic explorations of phenomena that provide students with the opportunity to develop conceptual understanding of disciplinary core ideas through the engagement of science and engineering practices and the application of crosscutting concepts. **Questions to ask:** Do these engagement opportunities allow learners to construction explanations using reasoning, apply creative thinking skills, and models through experiential investigations? Are learners provided opportunities to interpret and explain the important aspects of the natural world? Are learners provided with opportunities to make connections across multiple scientific contexts within the three-dimensions?	0 1 2	
	2b. Materials support the development of students' conceptual understanding of the designed world through authentic engineering practices to define and solve problems by providing three-dimensional opportunities to fully engage and apply scientific knowledge. *The Framework for K12 Science Education (NRC 2012): pp. 41 – 53, Appendix F and Appendix I.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Select at least three authentic explorations of engineering design that provide students with the opportunity to develop conceptual understanding of disciplinary core ideas through the engagement of science and engineering practices and the application of crosscutting concepts. **Questions to ask:** Do these engagement opportunities allow learners to define engineering challenges, construct solutions and optimize designs? Are learners provided opportunities to interpret and explain the important aspects of the designed world? Are learners provided with opportunities to demonstrate their understanding of science through the application of engineering practices?	0 1 2	

	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	2c. Materials include authentic and content-appropriate practices for student-generated claims with scientific evidence to make sense of phenomena and engineering design through evaluating and developing procedural skills. *The Framework for K12 Science Education (NRC 2012): Appendix F and Appendix H.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	In each grade level being evaluated, review the science and engineering practices addressed in the materials to determine the extent of student generated claims based on evidence through authentic explorations of phenomena and engineering design. **Questions to ask:** Are learners engaged in all eight science and engineering practices over the course of each grand- band in multiple contexts? Are there clear combinations of both knowledge and practice? Do the materials support students in constructing viable arguments and critiquing the arguments of others concerning grade-level performance expectations? Do the materials support students' construction of problem solving and designing solutions concerning grade-level performance expectations?	0 1 2	
	2d. Materials are designed so that educators and students spend sufficient time engaging in the science and engineering practices to better understand the nature and development of scientific knowledge in multiple interconnected and social contexts through student-generated discourse. *The Framework for K12 Science Education (NRC 2012): What it means to learn science pp. 251-255.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	In each grade level being evaluated, review the science and engineering practices addressed in the materials to determine the level of student-driven discourse through interconnected and social contexts. **Questions to ask:** Do the practices include several opportunities and methods for students to generate and use evidence to develop, refine, and apply scientific explanations to better understand the natural and designed world? Are students able to learn and demonstrate proficiency with core ideas by engaging in these knowledge-building practices to explain and make scientifically informed decisions about the world?	0 1 2	

	SECTION I: Alignment to the 2014 Science Standards (NGSS)			
Criterion 3 & 4: COHERENCE Learning experiences form a coherent learning progression in which each K-5 student builds competencies in the performance expectations through actively engaging in science and engineering practices and applying crosscutting concepts to continually build on and revise their knowledge and skills in disciplinary core ideas. Student opportunities are directly connected to the grade-level performance expectations to develop and use specific grade-appropriate elements of three-dimensional learning that are integrated to develop and support students' sense-making of phenomena and design solutions to problems. **4: Meets all criteria (8 points)** **3: Adheres to the criteria (6-7 points, no zeros)** **2: Sometimes adheres to the criteria (4-5 points)** **1: Occasionally adheres to the criteria (1-3 points)** **0: Does not meet the criteria** **Final Comments and Suggestions for Improvement:**	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	3a. Materials provide strong integration of science and engineering practices, disciplinary core ideas, and crosscutting concepts **within each and across grade levels**. *The Framework for K12 Science Education (NRC 2012): Appendix E, Appendix F and Appendix G.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Review the learning progressions for the disciplinary core ideas, science and engineering practices, and crosscutting concepts for the grade band being reviewed. Select at least two separate disciplinary core ideas and look for an increase in complexity and sophistication that demonstrates the practices and crosscutting concepts used differently from previous grades or from the beginning of the unit. (e.g. Earth's systems, Energy, From molecules to organisms) **Questions to ask:** Do the materials provide specific scaffolds to elevate learners understanding within and across the grade band? Are the instructional sequences arranged in a logical manner, allowing students to apply disciplinary core ideas, science and engineering practices, and crosscutting concepts previously taught? Are the instructional sequences arranged in a logical manner, without requiring students to use or apply concepts before they have been introduced?	0 1 2	
	3b&c. Materials **within each unit and course** provide coherent learning experiences that help students develop proficiency on a targeted set of three-dimensional performance expectations by intentionally linking prior knowledge and skills as a basis of engagement. *The Framework for K12 Science Education (NRC 2012): Appendix E, Appendix F and Appendix G.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Select a targeted (bundled) set of a least two grade-appropriate performance expectations from each grade level that have authentic engagement which builds upon students' previous learning and allow multiple approaches for students to demonstrate proficiencies. **Questions to ask:** Are the bundled performance expectations designed with explicit descriptions of what students do when they engage in using science as a process to gather information? Are there multiple opportunities for students to demonstrate proficiencies based on the bundle (set of more than one) of performance expectations?	0 1 2	

	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	3d. Materials **within each unit and course** focus on the application of authentic and content-appropriate knowledge, skills, and reasoning. *The Framework for K12 Science Education (NRC 2012): Appendix E, Appendix F and Appendix G.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Select one authentic exploration of science and engineering for each grade level being evaluated that provides opportunity for students to apply knowledge, skills and reasoning within each unit and build upon these throughout the course. **Questions to ask:** Are the materials focused on authentic contextualization to deepen students' understanding of the world around them and engineering design? Do the materials provide coherence and rigor within each unit and throughout the course that result in student mastery and application of scientific, technological and engineering knowledge, reasoning, and skills?	0 1 2	
	4. Materials are directly connected to the appropriate grade-level performance expectations to develop and use specific science and engineering practices, disciplinary core ideas, and crosscutting concepts that are integrated to develop and support students' sense-making of phenomena and design solutions to problems. *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* *Next Generation Science Standards: 6-8 Evidence Statements.*	At each designated grade level, the performance expectations must combine a relevant practice of science and engineering, with a core disciplinary idea and crosscutting concept, appropriate for students. **Questions to ask:** Are students engaged in age-appropriate content, fully integrated with practices and crosscutting concepts to make sense of science phenomena and designing solutions to problems that might be encountered in the real world?	0 1 2	

	SECTION I: Alignment to the 2014 Science Standards (NGSS)			
Criterion 6 & 7: COHERENCE The interdependence and the influence of science, engineering and technology on society and the natural world along with the understanding of the nature of science are interconnected to the content being addressed. **4: Meets all criteria (8 points)** **3: Adheres to the criteria (6-7 points, no zeros)** **2: Sometimes adheres to the criteria (4-5 points)** **1: Occasionally adheres to the criteria (1-3 points)** **0: Does not meet the criteria** **Final Comments and Suggestions for Improvement:**	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	6a. Materials integrate the **interdependence** of science, engineering, and technology as significant elements in learning experiences. *The Framework for K12 Science Education (NRC 2012): pp. 203, 210-212 and Appendix J.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Across grades 6-8, all four performance expectations related to interdependence of science, engineering, and technology are addressed and integrated in the materials. (**MS-PS(7)**1-3, **MS-LS(6)**1-1, **MS-LS(8)**4-5, **MS-ESS(8)**1-3) **Questions to ask:** Are the four performance expectations identified in the grade band? Are the performance expectations integrated within the content being addressed to provide students with opportunities to demonstrate and build upon previous knowledge?	0 1 2	
	6b. Materials demonstrate the **influence** of engineering, technology, and science on society and the natural world as significant elements in learning experiences. *The Framework for K12 Science Education (NRC 2012): pp. 203, 212-214 and Appendix J.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Across grades 6-8, all seven performance expectations related to the influence of engineering, and technology and science on society and the natural world are addressed and integrated in the materials. (**MS-PS(7)**1-3, **MS-PS(8)**2-1, **MS-PS(8)**4-3, **MS-LS(7)**2-5, **MS-ESS(6)**3-3, **MS-ESS(8)**3-4, **MS-ETS(6-8)**1-1) **Questions to ask:** Are the seven performance expectations identified in the grade band? Are the performance expectations integrated within the content being addressed to provide students with opportunities to demonstrate and build upon previous knowledge? Are the performance expectations related to real world engineering, technology, and science within society and the natural world?	0 1 2	
	7. Materials integrate understandings about the nature of science as significant elements in learning experiences. *The Framework for K12 Science Education (NRC 2012): Appendix H.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Across grades 6-8, students are engaged in the eight understandings of the nature of science as part of the learning experience. **Questions to ask:** Are the eight understandings of the nature of science explicit in the materials at each grade level? Are the basic understandings of the nature of science fully integrated and not separated from three-dimensional learning? Are student learning outcomes appropriate for the selected performance expectation? Are students productively engaging in the nature of science for a deeper understanding of phenomena in the natural and designed world?	0 1 2	

	SECTION I: Alignment to the 2014 Science Standards (NGSS)			
Criterion 5, 8 & 9: COHERENCE Instructional sequence provides multiple approaches to achieve proficiency of the performance expectations and a logical progression of diverse instructional strategies for student learning. **4: Meets all criteria (8 points)** **3: Adheres to the criteria (6-7 points, no zeros)** **2: Sometimes adheres to the criteria (4-5 points)** **1: Occasionally adheres to the criteria (1-3 points)** **0: Does not meet the criteria** **Final Comments and Suggestions for Improvement:**	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	5. Materials provide learning opportunities that include instructional strategies to facilitate three-dimensional learning. *The Framework for K12 Science Education (NRC 2012): Appendix D with the Case Studies and Appendix K.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Across the 6-8 grades, sense-making practices and designing solutions to problems allow students to support explanations of phenomena through three-dimensional learning most of the time. **Questions to ask:** What evidence-based instructional strategies are identified throughout the materials that support three-dimensional learning? Are the students provided opportunities to demonstrate understanding of phenomena in the natural and designed world?	0 1 2	
	8. Instructional sequence consistently provides multiple opportunities and adequate time for student learning. *The Framework for K12 Science Education (NRC 2012): Appendix E.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Across the 6-8 grades, materials are designed to ensure that students are given multiple opportunities to access scientific knowledge and allowing adequate time focused on the performance expectations. **Questions to ask:** Are there explicit connections between grade levels that provide students with multiple opportunities to demonstrate and build upon scientific knowledge? Are the ideas or concepts repeated or do the materials provide students with opportunities for a progression of knowledge to learn more complex concepts? Is adequate time given to students to fully engage in the performance expectations?	0 1 2	
	9a. Materials use diverse instructional strategies that provide clear purposes for learning experiences (e.g., elicit preconceptions, teach new knowledge, build skills and abilities, and connects to prior knowledge). *The Framework for K12 Science Education (NRC 2012): Appendix A and Appendix D with the Case Studies.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Across the 6-8 grades, materials are designed to ensure that students are given meaningful opportunities to access scientific knowledge through diverse instructional strategies. **Questions to ask:** Are cultural responsiveness and growth mindset approaches evident throughout the materials? Do the materials adequately address the diverse learning styles of students (culturally and linguistically diverse learners, learners navigating poverty, students with varying academic needs, students working at, below, and above grade-level, etc.)? Are there clear links to previous knowledge and opportunities to build and apply the knowledge? Do the instructional strategies in the materials provide clear and explicit learning goals?	0 1 2	

	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	9b. Materials use instructional strategies in a logical progression that provides clear purposes for learning experiences (e.g., elicit preconceptions, teach new knowledge, build skills and abilities, and connect to prior knowledge). *The Framework for K12 Science Education (NRC 2012): Appendix D with the Case Studies.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.*	Across the 6-8 grades, materials are presented in a logical progression to ensure that students are given meaningful opportunities and clear purpose to access and apply scientific knowledge. **Questions to ask:** Are the materials arranged in a logical developmental progression for students to continually build and revise their abilities and knowledge? Do the materials adequately arrange content in increasing sophistication to support and challenge students' skills and knowledge (culturally and linguistically diverse learners, learners navigating poverty, students with varying academic needs, etc.)? Are there clear links to previous knowledge and opportunities to build and apply the knowledge?	0 1 2	

	SECTION I: Alignment to the 2014 Science Standards (NGSS)			
Criterion 3 & 10: COHERENCE Materials support and guide in-depth instruction in the three intertwined NGSS dimensions, with clear connections to the Common Core State Standards (CCSS) in Mathematics and English Language Arts & Literacy and the Oregon English Language Proficiency Standards. **4: Meets all criteria (8 points)** **3: Adheres to the criteria (6-7 points, no zeros)** **2: Sometimes adheres to the criteria (4-5 points)** **1: Occasionally adheres to the criteria (1-3 points)** **0: Does not meet the criteria** **Final Comments and Suggestions for Improvement:**	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	3e. Materials **across and throughout grades 6-8** build coherent learning progressions by integrating science and engineering practices, disciplinary core ideas, and crosscutting concepts. *The Framework for K12 Science Education (NRC 2012): pp. 33-34, Chapter 5-8 and Appendix E.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* *6-8 NGSS grade-level standards: Connections to other disciplinary core ideas at the grade band and Articulation of disciplinary core ideas across grade band.*	Review the learning progressions for the disciplinary core ideas, science and engineering practices, and crosscutting concepts of the grade band being reviewed. Select at least two separate disciplinary core ideas and look for an increase in complexity and sophistication that integrates the practices and crosscutting concepts across and throughout the grade band. **Questions to ask:** Are the integrated practices, ideas and concepts presented in a logical manner that continually allows students to build and revise their scientific knowledge and abilities? Have the grade band end points been fully addressed allowing adequate connections to three-dimensional learning? Are students provided with multiple opportunities to integrate practices, ideas and concepts to deepen their understanding of science and engineering design?	0 1 2	
	3f. Where appropriate, materials **across and throughout grades 6-8** provide multiple disciplinary core ideas and cross-cutting concepts that are used together to explain phenomena. *The Framework for K12 Science Education (NRC 2012): Appendix E, Appendix F and Appendix G.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* *6-8 NGSS grade-level standards: Connections to other disciplinary core ideas at the grade band and Articulation of disciplinary core ideas across grade band.*	Where appropriate, materials intentionally integrate crosscutting concepts that bridge science disciplines and unite core ideas through the fields of science and engineering within and across the grade band. **Questions to ask:** Is there complexity and sophistication that builds across the grade level and grade band for students to gain deeper understanding and applications of the crosscutting concepts? Are students provided opportunity to apply their knowledge of crosscutting concepts through evidence-based explanations to other, related phenomena?	0 1 2	

	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	3g. Where appropriate, materials **across and throughout grades 6-8** include science and engineering practices that are integrated with other content area practices. *The Framework for K12 Science Education (NRC 2012): Appendix F* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* *6-8 NGSS grade-level standards: Connection Boxes and the Commonalities Among Practices in Science, Mathematics, English Language Arts and English Language Proficiency (NSTA Venn and Understanding Language Venn Diagram).*	Where appropriate, materials intentionally integrate relevant science and engineering practices with other content area practices. (e.g. CCSS – mathematic practices, CCSS – ELA practices, ELP Practices) **Questions to ask:** Are the practices intentionally interconnected to other content areas in a manner that is clear for educators and accessible for students? Does the integration of the science and engineering practices engage students to deepen their understanding of scientific knowledge and engineering design? Are students engaged in discourse to make their thinking visible through the practices?	0 1 2	
	10a. Materials provide relevant grade-appropriate connection(s) to the Common Core State Standards (CCSS) in Mathematics. *The Framework for K12 Science Education (NRC 2012): Appendix L (pp. 21-27).* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* *6-8 NGSS grade-level standards: Connection Boxes, Common Core State Standards-Mathematics.*	In each grade-level being evaluated, consider the degree to which the integration of the CCSS-mathematics concepts are deliberately being addressed in the lesson/unit. When used as designed, materials explicitly connect to CCSS-mathematics multiple times in each grade-level. **Questions to ask:** At the grade-level being reviewed, are the CCSS-mathematics integrated into the lesson/unit explicit to educators and students? Are the grade-appropriate CCSS-mathematics interwoven throughout the materials? Are the materials designed to make sense of phenomena and to design solutions to problems?	0 1 2	

	Quality Indicators	How to Find the Evidence	Rating	Specific Evidence from Materials
	10b. Materials provide relevant grade-appropriate connection(s) to the Common Core State Standards (CCSS) in English Language Arts & Literacy. *The Framework for K12 Science Education (NRC 2012): Appendix M.* *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* *6-8 NGSS grade-level standards: Connection Boxes, Common Core State Standards- English Language Arts (Science & Technical Subjects).*	In each grade-level being evaluated, consider the degree which the integration of the CCSS-English language arts concepts are deliberately being addressed in the lesson/unit. When used as designed, materials explicitly connect to CCSS-English language arts multiple times in each grade-level. **Questions to ask:** At the grade level being reviewed, are the CCSS- English Language Arts & Literacy integrated into the lesson/unit explicit to educators and students? Are the grade-appropriate CCSS- English Language Arts & Literacy interwoven throughout the materials? Do the materials support scientific literacy by intentionally connecting to the science and engineering practices?	0 1 2	
	10c. Materials provide relevant grade-appropriate connection(s) to the Oregon English Language Proficiency Standards. *Next Generation Science Standards: For States, By States (NGSS Lead States 2013): 6-8 Performance Expectations.* *The Framework for English Language Proficiency Development Standards: pp. 26-30 and English Language Proficiency Standards: pp. 31- 34.*	In each grade-level being evaluated, consider the degree that the integration of the English Language Proficiency concepts are deliberately being addressed. When used as designed, materials explicitly connect to English Language Proficiency Standards multiple times in each grade-level. **Questions to ask:** At the grade level being reviewed, are the English Language Proficiency Development Standards explicit? Are the grade-appropriate English Language Proficiency Development Standards interwoven throughout the materials? Do the materials engage students by intentionally connecting to the science and engineering practices?	0 1 2	

SECTION II: Instructional Supports
Supporting Criteria

Rate each indicator in Section II according to whether it is met, partially met, or not met. Award points for each indicator as shown.

II - INDICATORS OF QUALITY: Student Engagement	**SCORE** Does not meet	Partially meets/ Not sure	Meets	**EVIDENCE**
11. Engages students in authentic and meaningful learning experiences that reflect real-world science and engineering practices in the NGSS performance expectations and are grounded in students' experiences to provide a context for making sense of phenomena and/or designing solutions to problems through the following indicators:				
a. The context of learning experiences, including relevant phenomena, questions, or problems, engages students in three-dimensional learning.	0	1	2	
b. Provides relevant firsthand experiences or models that allow students to make sense of the physical and natural world.	0	1	2	
c. Engages students in multiple practices that are integrated into relevant disciplinary core ideas and crosscutting concepts to support making sense of phenomena and designing solutions to problems through inquiry and engineering design experiences.	0	1	2	
d. Provides opportunities for students to connect their explanation of a phenomenon and/or their design solution to a problem to their own experience.	0	1	2	
e. Provides relevant applications for students to relate science to life, home, school, and various careers, and to apply their knowledge and skills as scientifically literate citizens.	0	1	2	
12a. Facilitates deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts by building upon prior knowledge.	0	1	2	
12b. Facilitates deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts by identifying and correcting misconceptions.	0	1	2	
13. Through scientific discourse in oral, visual, and/or written form, materials provide frequent opportunities for students to express, clarify, justify, interpret, represent their ideas, and respond to peer and teacher feedback.	0	1	2	
Total (points possible)				

SECTION II: Instructional Supports Key Criteria
Rate each indicator in Section II according to whether it is met, partially met, or not met. Award points for each indicator as shown.

II - INDICATORS OF QUALITY: Differentiated Instruction	SCORE Does not meet	 Partially meets/ Not sure	 Meets	EVIDENCE
14. Provides guidance for teachers to support differentiated and culturally responsive (i.e., purposefully represents diverse cultures, linguistic backgrounds, learning styles, and interests) instruction in the classroom so that every student's needs addressed by including:				
a. Suggestions for how to promote equitable instruction by making connections to culture, home, neighborhood, and community, as appropriate.	0	1	2	
b. Appropriate scaffolding, Interventions, and supports, including integrated and appropriate reading, writing, listening, and speaking alternatives (e.g., translations, picture support, graphic organizers) that neither sacrifice science content nor avoid language development for English language learners, special needs, or below grade level readers.	0	1	2	
c. Digital and print resources that provide various levels of readability (e.g., based on the CCSS three part model for measuring text complexity).	0	1	2	
d. Modifications and extensions for all students, including those performing above their grade level, to develop deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts.	0	1	2	
e. Technology and digital media to support, extend, and enhance learning experiences.	0	1	2	
f. Materials in multiple language formats.	0	1	2	
15. Includes grade-level appropriate academic and content-specific vocabulary in the context of the learning experience that is accessible, introduced, reinforced, reviewed and augmented with visual representations when appropriate.	0	1	2	
Total (points possible)				

SECTION II: Instructional Supports
Supporting Criteria

Rate each indicator in Section II according to whether it is met, partially met, or not met. Award points for each indicator as shown.

II - INDICATORS OF QUALITY: Extensions & Educator Supports	SCORE Does not meet	Partially meets/ Not sure	Meets	EVIDENCE
16. Provides guidance for teachers throughout the unit for how learning experiences build on each other to support students in developing deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts.	0	1	2	
17. Provides scaffolded supports for teachers to facilitate learning of the practices so that students are increasingly responsible for making sense of phenomena and/or designing solutions to problems.	0	1	2	
18. Provide digital and print materials are consistently formatted, visually focused, and uncluttered for efficient use.	0	1	2	
19. Provide virtual labs, simulations, and video-based learning experiences.	0	1	2	
20. Allow teachers to access, revise, and print from digital sources (e.g., readings, labs, assessments, rubrics).	0	1	2	
21. Supplies and equipment, when provided, are high quality (e.g., durable, dependable) and organized for efficient use.	0	1	2	
22. Provide thorough lists that identify by learning experience all consumable and non-consumable materials aligned for both instruction and assessment.	0	1	2	
23. Use scientifically accurate and grade-appropriate scientific information, vocabulary, phenomena, models, and representations to support students' three-dimensional learning.	0	1	2	
24. Adhere to safety laws, rules, and regulations and emphasize the importance of safety in science.	0	1	2	
25. Make available ongoing and embedded professional development for implementation and continued use of the instructional materials.	0	1	2	
Total (points possible)				

SECTION III: Monitoring Student Progress
Supporting Criteria

Rate each indicator in Section III according to whether it is met, partially met, or not met. Award points for each indicator as shown.

III - INDICATORS OF QUALITY: Monitoring Student Progress	SCORE Does not meet	Partially meets/ Not sure	Meets	EVIDENCE
The instructional materials support monitoring student progress:				
26. Elicits direct, observable evidence of three-dimensional learning using practices with core ideas and crosscutting concepts to make sense of phenomena and/or to design solutions that have been covered adequately in the instructional materials.	0	1	2	
27. Includes editable and aligned rubrics, scoring guidelines, and exemplars that provide guidance for assessing student performance along all three NGSS dimensions to support teachers in (a) planning instruction and (b) providing ongoing feedback to students.	0	1	2	
28. Uses varied modes (selected, constructed, project-based, extended response, and performance tasks) of instruction-embedded pre-, formative, summative, peer, and self-assessment measures of three-dimensional learning.	0	1	2	
29. Provides multiple opportunities for students to demonstrate and receive feedback on performance of practices connected with their understanding of disciplinary core ideas and crosscutting concepts.	0	1	2	
30. Assesses student proficiency using methods, vocabulary, representations, models, and examples that are accessible and unbiased for all students.	0	1	2	
31. Digital assessments are easy to manipulate and customize, are linked to Common Core State Standards, and have large problem banks.	0	1	2	
32. Digital assessment platform allows teachers to easily access student work and provide feedback.	0	1	2	
33. Provides teachers with a range of data to inform instruction that can interface with multiple electronic grade book platforms.	0	1	2	
34. Provides print and digital assessments that are platform- and device-independent.	0	1	2	
Total (points possible)				