

STATE BOARD OF EDUCATION – TOPIC SUMMARY

Topic: Instructional Materials Criteria for 2014 Science Standards (NGSS)

Date: December 11-12, 2014

Staff/Office: Kim Patterson, Jamie Ramage; ISAA Unit

Action Requested: Informational Only Adoption Later Adoption Adoption/Consent
Agenda

ISSUE BEFORE THE BOARD:

Adoption of criteria to be used in the evaluation of instructional materials aligned to the Oregon science standards (NGSS) 2013-2014.

BACKGROUND:

Criteria used in the evaluation of instructional materials are developed by stakeholders and formally adopted by the State Board of Education (ORS 337.035, OAR 581-011-0065).

Instructional Materials are adopted by the State Board of Education in a seven-year subject matter cycle that results in a six-year contract with publishers (ORS 337.090 and OAR 581-011-0070).

According to Oregon Law:

ORS 337.050 (1) "The State Board of Education shall review and adopt, for periods established by the board, a list of textbooks and other instructional materials for use by school districts."

OAR 581-011-0065 (2) "The State Board of Education shall review the criteria which will be used in the evaluation of instructional materials submitted for adoption. The Board will adopt the criteria no later than its January meeting in the adoption year."

OAR 581-011-0070 (1) "The State Board of Education shall adopt instructional materials by rule prior to October 31 each year. (2) The adoption period consists of the seven-year period following adoption of an instructional materials list by the State Board of Education in accordance with the provisions of ORS 337.050."

OAR 581-011-0071 "Pursuant to 337.120, district school boards shall adopt instructional materials for each grade and subject field for which instruction is provided by the district from the approved list except as otherwise provided by 337.141."

Following adoption by the State Board of Education, school districts make the local decision to do one of the following:

- Select and adopt Instructional Materials from the State Board-adopted list (ORS 337.050 and OAR 581-022-1640)
- Independently adopt instructional materials using the state-established criteria (OAR 581-022-622)
- Postpone adoption for up to two years (OAR 581-022-1650).

The Oregon Department of Education convened teachers and curriculum specialists with experience in the Oregon science standards (NGSS) on October 24, 2014 to develop criteria for evaluating instructional materials during the summer of 2015.

STAFF RECOMMENDATION: ODE staff recommends adoption of criteria, by reference, at the January 22, 2015, board meeting.

I. Alignment to the 2014 Science Standards (NGSS)	II. Instructional Supports	III. Monitoring Student Progress
<p>The instructional materials align with the conceptual shifts of the NGSS:</p> <p style="text-align: center;">Focus</p> <p>1. 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.</p> <p style="text-align: center;">Rigor</p> <p>2. 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.</p> <p style="text-align: center;">Coherence</p> <p>3. 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.</p> <p>a. Materials provide strong integration of science and engineering practices, disciplinary core ideas, and crosscutting concepts within and between grade levels.</p> <p>b. Learning experiences fit together coherently and</p>	<p>The instructional materials support instruction and learning for all students:</p> <p>Student Engagement</p> <p>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.</p> <p>a. The context of learning experiences, including relevant phenomena, questions, or problems, engages students in three-dimensional learning.</p> <p>b. Provides relevant firsthand experiences or models that allow students to make sense of the physical and natural world.</p> <p>c. Engages students in multiple practices that are integrated into relevant disciplinary core ideas and crosscutting concepts to support making sense of phenomena and/or designing solutions to problems through inquiry and engineering design experiences.</p> <p>d. Provides opportunities for students to connect their explanation of a phenomenon and/or their design solution to a problem to their own experience.</p> <p>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.</p> <p>12. Facilitates deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts by building upon prior knowledge and identifying and correcting misconceptions.</p> <p>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.</p> <p>Differentiated Instruction</p> <p>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 are addressed by including:</p> <p>a. Suggestions for how to promote equitable instruction by making connections to culture, home, neighborhood, and community, as appropriate.</p> <p>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.</p> <p>c. Digital and print resources that provide various levels of readability (e.g., based on the <u>CCSS three part model for measuring text complexity</u>).</p> <p>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</p>	<p>The instructional materials support monitoring student progress:</p> <p>27. 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.</p> <p>28. 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.</p> <p>29. 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.</p>

I. Alignment to the 2014 Science Standards (NGSS)	II. Instructional Supports	III. Monitoring Student Progress
<p>help students develop proficiency on a targeted set of three-dimensional performance expectations.</p> <p>c. Learning experiences progress in a relevant and engaging manner, building upon ideas, practices, and concepts developed in previous learning experiences.</p> <p>d. Science and engineering practices, disciplinary core ideas, and crosscutting concepts build coherent learning progressions across grades K-5 including application of knowledge and skills learned in prior grades.</p> <p>e. Where appropriate, disciplinary core ideas from different science disciplines are used together to explain phenomena.</p> <p>f. Where appropriate, crosscutting concepts are used in the explanation of phenomena from a variety of science disciplines in addition to other content areas.</p> <p>g. Where appropriate, science and engineering practices are integrated with other content area practices.</p> <p>4. Provides learning opportunities directly connected to the grade level performance expectations to develop and use specific grade-appropriate elements of the science and engineering practices, disciplinary core ideas, and crosscutting concepts that are integrated to develop and support students’ sense-making of phenomena and/or design solutions to problems.</p> <p>5. Learning opportunities include instructional strategies that facilitate three-dimensional learning.</p> <p>6. Integrates the interdependence of science, engineering, and technology as well as the influence of engineering, technology, and science on society and the natural world as significant elements in learning experiences (see NGSS Appendix J).</p> <p>7. Integrates understandings about the nature of science</p>	<p>crosscutting concepts.</p> <p>e. Technology and digital media to support, extend, and enhance learning experiences.</p> <p>f. Materials in multiple language formats.</p> <p>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.</p> <p>16. Includes grade-level appropriate informational text (e.g., digital and print resources) that supports conceptual understanding of the disciplinary core ideas.</p> <p>17. 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.</p> <p>18. 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.</p> <p>Instructional Materials</p> <p>19. Digital and print materials are consistently formatted, visually focused, and uncluttered for efficient use.</p> <p>20. Provide virtual labs, simulations, and video-based learning experiences.</p> <p>21. Allow teachers to access, revise, and print from digital sources (e.g., readings, labs, assessments, rubrics).</p> <p>22. Supplies and equipment, when provided, are high quality (e.g., durable, dependable) and organized for efficient use.</p> <p>23. Provide thorough lists that identify by learning experience all consumable and non-consumable materials aligned for both instruction and assessment.</p> <p>24. Use scientifically accurate and grade-appropriate scientific information, vocabulary, phenomena, models, and representations to support students’ three-dimensional learning.</p> <p>25. Adhere to safety laws, rules, and regulations and emphasize the importance of safety in science.</p> <p>26. Make available ongoing and embedded professional development for implementation and continued use of the instructional materials.</p>	<p>30. 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.</p> <p>31. Assesses student proficiency using methods, vocabulary, representations, models, and examples that are accessible and unbiased for all students.</p> <p>32. Digital assessments are easy to manipulate and customize, are linked to Common Core State Standards, and have large problem banks.</p> <p>33. Digital assessment platform allows teachers to easily access student work and provide feedback.</p> <p>34. Provides teachers with a range of data to inform instruction that can interface with multiple electronic grade book platforms.</p> <p>35. Provides print and</p>

Category 1: 2014 Science Standards (NGSS) – Grades K-5		DRAFT NOT FOR DISTRIBUTION	
I. Alignment to the 2014 Science Standards (NGSS)	II. Instructional Supports	III. Monitoring Student Progress	
<p>as significant elements in learning experiences (see NGSS Appendix H).</p> <p>8. Instructional sequence consistently provides multiple opportunities and adequate time for student learning.</p> <p>9. Uses diverse instructional strategies in a logical progression of instruction that provide clear purposes for learning experiences (e.g., elicit preconceptions, teach new knowledge, build skills and abilities, connect to prior knowledge).</p> <p>10. Provides relevant grade-appropriate connection(s) to the Common Core State Standards (CCSS) in Mathematics and English Language Arts & Literacy and the Oregon English Language Proficiency Standards.</p>		<p>digital assessments that are platform- and device-independent.</p>	

***For the definition of the three NGSS intertwined dimensions of disciplinary core ideas, practices, and crosscutting concepts, see National Research Council. (2011). [A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. \(pages 30-33\)](#)**

Oregon Definition of Instructional Material:

Units/lessons and materials that make up the major instructional vehicle for a given course of study as described in [OAR 581-011-0050](#).

Rating Scale for Each Criterion:

- 4: Exceeds the criteria
- 3: Adheres to the criteria
- 2: Sometimes adheres to the criteria
- 1: Occasionally adheres to the criteria
- 0: Rarely adheres to the criteria

These criteria are based on the Educators Evaluating the Quality of Instructional Products (EQuIP) Science Rubric which was developed for units/lessons (Achieve: Version 2 – published September 2014) and were modified for instructional materials by the Oregon Department of Education and the Oregon Science Instructional Materials Criteria Development Committee (October 2014).

Overall Rating for the Instructional material:

- E: Exemplar - meets all the “must have” criteria (**) and most of the other criteria in the remaining dimensions (mainly 3-4’s).
- E/I: Exemplar *if* Improved - meets all the “must have” criteria (**) , needs some improvement in remaining dimensions (mainly 2-3’s).
- R: Needs Revision – Does not meet all “must have” criteria (**) and requires significant revision in one or more dimensions (mainly 1-2’s).
- N: Not Recommended - does not meet the criteria in the dimensions (mainly 0-2’s).
- N/R: Not ready to review – use rubric criteria to revise and organize instructional material then resubmit for a quality review.

I. Alignment to the 2014 Science Standards (NGSS)

II. Instructional Supports

III. Monitoring Student Progress

The instructional materials align with the conceptual shifts of the NGSS:

Focus

1. 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.

Rigor

2. 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.

Coherence

3. Learning experiences form a coherent learning progression in which students build 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.
 - a. Materials provide strong integration of science and engineering practices, disciplinary core ideas, and crosscutting concepts across physical science, life science and earth and space science within each grade and across grade levels.

Within each unit and course:
 - b. Learning experiences fit together coherently and help students develop proficiency on a targeted set of three-dimensional performance expectations.
 - c. Each learning experience links to prior knowledge and skills

The instructional materials support instruction and learning for all students:

Student Engagement

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.
 - a. The context of learning experiences, including relevant phenomena, questions, or problems, engages students in three-dimensional learning.
 - b. Provides relevant firsthand experiences or models that allow students to make sense of the physical and natural world.
 - c. Engages students in multiple practices that are integrated into relevant disciplinary core ideas and crosscutting concepts to support making sense of phenomena and/or designing solutions to problems through inquiry and engineering design experiences.
 - d. Provides opportunities for students to connect their explanation of a phenomenon and/or their design solution to a problem to their own experience.
 - 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.
12. Facilitates deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts by building upon prior knowledge and identifying and correcting misconceptions.
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.

Differentiated Instruction

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 are addressed by including:
 - a. Suggestions for how to promote equitable instruction by making connections to culture, home, neighborhood, and community, as appropriate.
 - 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

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.
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.
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.

I. Alignment to the 2014 Science Standards (NGSS)

- providing a basis for engagement.
- d. Materials focus on the application of authentic and content-appropriate knowledge, skills, and reasoning.
- Across courses and throughout grades 6-8:**
- e. Science and engineering practices, disciplinary core ideas, and crosscutting concepts build coherent learning progressions within each grade and across grade levels.
- f. Where appropriate, multiple disciplinary core ideas are used together to explain phenomena.
- g. Where appropriate, crosscutting concepts are used in the explanation of phenomena from a variety of disciplines.
- 4. Provides learning opportunities directly connected to the grade level performance expectations to develop and use specific grade-appropriate elements of the science and engineering practices, disciplinary core ideas, and crosscutting concepts that are integrated to develop and support students’ sense-making of phenomena and/or design solutions to problems.
- 5. Learning opportunities include instructional strategies that facilitate three-dimensional learning.
- 6. Integrates the interdependence of science, engineering, and technology as well as the influence of engineering, technology, and science on society and the natural world as significant elements in learning experiences (see [NGSS Appendix J](#)).
- 7. Integrates understandings about the nature of science as significant elements in learning experiences (see [NGSS Appendix H](#)).
- 8. Instructional sequence consistently provides multiple opportunities and adequate time for student learning.
- 9. Uses diverse instructional strategies in a logical progression of instruction that provide clear purposes for learning experiences (e.g., elicit preconceptions, teach new knowledge, build skills and abilities, connect to prior knowledge).
- 10. Provides relevant grade-appropriate connections to the Common Core State Standards (CCSS) in Mathematics and English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects, and the [Oregon English Language Proficiency](#)

II. Instructional Supports

- content nor avoid language development for English language learners, special needs, or below grade level readers.
- c. Digital and print resources that provide various levels of readability (e.g., based on the [CCSS three part model for measuring text complexity](#)).
- 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.
- e. Technology and digital media to support, extend, and enhance learning experiences.
- f. Materials in multiple language formats.
- 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.
- 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.
- 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.
- Instructional Materials**
- 18. Digital and print materials are consistently formatted, visually focused, and uncluttered for efficient use.
- 19. Provide virtual labs, simulations, and video-based learning experiences.
- 20. Allow teachers to access, revise, and print from digital sources (e.g., readings, labs, assessments, rubrics).
- 21. Supplies and equipment, when provided, are high quality (e.g., durable, dependable) and organized for efficient use.
- 22. Provide thorough lists that identify by learning experience all consumable and non-consumable materials aligned for both instruction and assessment.
- 23. Use scientifically accurate and grade-appropriate scientific information, vocabulary, phenomena, models, and representations to support students’ three-dimensional learning.
- 24. Adhere to safety laws, rules, and regulations and emphasize the importance of safety in science.
- 25. Make available ongoing and embedded professional development for implementation and continued use of the instructional materials.

III. Monitoring Student Progress

- 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 .
- 30. Assesses student proficiency using methods, vocabulary, representations, models, and examples that are accessible and unbiased for all students.
- 31. Digital assessments are easy to manipulate and customize, are linked to Common Core State Standards, and have large problem banks.
- 32. Digital assessment platform allows teachers to easily access student work and provide feedback.
- 33. Provides teachers with a range of data to inform instruction that can interface with multiple electronic grade book platforms.
- 34. Provides print and digital assessments that are platform- and device-independent.

Category 2: 2014 Science Standards (NGSS) – Grades 6-8		DRAFT NOT FOR DISTRIBUTION	
I. Alignment to the 2014 Science Standards (NGSS)		II. Instructional Supports	
Standards.		III. Monitoring Student Progress	

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 R: Needs Revision – Does not meet all “must have” criteria (**) and requires significant revision in one or more dimensions (mainly 1-2’s).
 N: Not Recommended - does not meet the criteria in the dimensions (mainly 0-2’s).
 N/R: Not ready to review – use rubric criteria to revise and organize instructional material then resubmit for a quality review.

These criteria are based on the Educators Evaluating the Quality of Instructional Products (EQIP) Science Rubric which was developed for units/lessons (Achieve: Version 2 – published September 2014) and were modified for instructional materials by the Oregon Department of Education and the Oregon Science Instructional Materials Criteria Development Committee (October 2014).

I. Alignment to the 2014 Science Standards (NGSS)	II. Instructional Supports	III. Monitoring Student Progress
<p>The instructional materials align with the conceptual shifts of the NGSS:</p> <p style="text-align: center;">Focus</p> <p>1. 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.</p> <p style="text-align: center;">Rigor</p> <p>2. 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.</p> <p style="text-align: center;">Coherence</p> <p>3. Learning experiences form a coherent learning progression in which students build 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.</p> <p>a. Science and engineering practices, disciplinary core ideas, and crosscutting concepts build coherent learning progressions across physical science, life science and earth and space science including application of knowledge and skills learned in prior grades.</p> <p>Within each unit and course:</p> <p>b. Learning experiences fit together coherently and help students develop proficiency on a targeted set of three-</p>	<p>The instructional materials support instruction and learning for all students:</p> <p>Student Engagement</p> <p>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.</p> <p>a. The context of learning experiences, including relevant phenomena, questions, or problems, engages students in three-dimensional learning.</p> <p>b. Provides relevant firsthand experiences or models that allow students to make sense of the physical and natural world.</p> <p>c. Engages students in multiple practices that are integrated into relevant disciplinary core ideas and crosscutting concepts to support making sense of phenomena and/or designing solutions to problems through inquiry and engineering design experiences.</p> <p>d. Provides opportunities for students to connect their explanation of a phenomenon and/or their design solution to a problem to their own experience.</p> <p>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.</p> <p>12. Facilitates deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts by building upon prior knowledge and identifying and correcting misconceptions.</p> <p>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.</p> <p>Differentiated Instruction</p> <p>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 are addressed by including:</p> <p>a. Suggestions for how to promote equitable instruction by making connections to culture, home, neighborhood, and community, as appropriate.</p> <p>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</p>	<p>The instructional materials support monitoring student progress:</p> <p>26. Elicits direct, observable evidence of three-dimensional learning by students 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.</p> <p>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.</p> <p>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.</p> <p>29. Provides multiple opportunities for students to demonstrate and</p>

Category 3: 2014 Science Standards (NGSS) – Grades 9-12

DRAFT NOT FOR DISTRIBUTION

<p>I. Alignment to the 2014 Science Standards (NGSS)</p>	<p>II. Instructional Supports</p>	<p>III. Monitoring Student Progress</p>
<p>dimensional performance expectations.</p> <p>c. Each learning experience links to previous learning experiences and provides a need to engage in the current learning experience.</p> <p>d. Materials focus on the application of authentic and content-appropriate knowledge, skills, and reasoning.</p> <p>Across courses and throughout grades 9-12:</p> <p>e. Science and engineering practices, disciplinary core ideas, and crosscutting concepts build coherent learning progressions within each grade and across grade levels.</p> <p>f. Where appropriate, disciplinary core ideas from different disciplines are used together to explain phenomena.</p> <p>g. Where appropriate, crosscutting concepts are used in the explanation of phenomena from a variety of disciplines.</p> <p>4. Provides learning opportunities directly connected to the grade level performance expectations to develop and use specific grade-appropriate elements of the science and engineering practices, disciplinary core ideas, and crosscutting concepts that are integrated to develop and support students’ sense-making of phenomena and/or design solutions to problems.</p> <p>5. Learning opportunities include instructional strategies that facilitate three-dimensional learning.</p> <p>6. Integrates the interdependence of science, engineering, and technology as well as the influence of engineering, technology, and science on society and the natural world as significant elements in learning experiences (see NGSS Appendix J).</p> <p>7. Integrates understandings about the nature of science as significant elements in learning experiences (see NGSS Appendix H).</p> <p>8. Instructional sequence consistently provides multiple opportunities and adequate time for student learning.</p> <p>9. Uses diverse instructional strategies in a logical progression of instruction that provide clear purposes for learning experiences (e.g., elicit preconceptions, teach new knowledge, build skills and abilities, connect to prior knowledge).</p> <p>10. Provides relevant grade-appropriate connections to the</p>	<p>content nor avoid language development for English language learners, special needs, or below grade level readers.</p> <p>c. Digital and print resources that provide various levels of readability (e.g., based on the CCSS three part model for measuring text complexity).</p> <p>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.</p> <p>e. Technology and digital media to support, extend, and enhance learning experiences.</p> <p>f. Materials in multiple language formats.</p> <p>15. Provides research-based strategies to develop students’ academic language that are connected to the performance expectations (e.g., code-switching and interactive notebooks).</p> <p>16. Provides guidance for teachers throughout the unit for how learning experiences build on each other to support students developing deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts.</p> <p>17. Provides supports to help students engage in the practices as needed and gradually adjusts supports over time so that students are increasingly responsible for making sense of phenomena and/or designing solutions to problems.</p> <p>Instructional Materials</p> <p>18. Digital and print materials are consistently formatted, visually focused, and uncluttered for efficient use.</p> <p>19. Provide virtual labs, simulations, and video-based learning experiences.</p> <p>20. Allow teachers to access, revise, and print from digital sources (e.g., readings, labs, assessments, rubrics).</p> <p>21. Supplies and equipment, when provided, are high quality (e.g., durable, dependable) and organized for efficient use.</p> <p>22. Provide thorough lists that identify by learning experience all consumable and non-consumable materials aligned for both instruction and assessment.</p> <p>23. Use scientifically accurate and grade-appropriate scientific information, phenomena, and representations to support students’ three-dimensional learning.</p> <p>24. Adhere to safety laws, rules, and regulations and emphasize the importance of safety in science.</p> <p>25. Make available ongoing and embedded professional development for implementation and continued use of the instructional materials.</p>	<p>receive feedback on performance of practices connected with their understanding of disciplinary core ideas and crosscutting concepts .</p> <p>30. Assesses student proficiency using methods, vocabulary, representations, models, and examples that are accessible and unbiased for all students.</p> <p>31. Digital assessments are easy to manipulate and customize, are linked to Common Core State Standards, and have large problem banks.</p> <p>32. Digital assessment platform allows teachers to easily access student work and provide feedback.</p> <p>33. Provides teachers with a range of data to inform instruction that can interface with multiple electronic grade book platforms.</p> <p>34. Provides print and digital assessments that are platform- and device-independent.</p>

Category 3: 2014 Science Standards (NGSS) – Grades 9-12			DRAFT NOT FOR DISTRIBUTION		
I. Alignment to the 2014 Science Standards (NGSS)		II. Instructional Supports		III. Monitoring Student Progress	
Common Core State Standards (CCSS) in Mathematics and English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects, and the <u>Oregon English Language Proficiency Standards</u> .					

*For the definition of the three NGSS intertwined dimensions of disciplinary core ideas, practices, and crosscutting concepts, see National Research Council. (2011). *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*. (pages 30-33)

Oregon Definition of Instructional Material:

Units/lessons and materials that make up the major instructional vehicle for a given course of study as described in OAR 581-011-0050.

Rating Scale for Each Criterion:

Overall Rating for the Instructional material:

E: Exemplar - meets all the “must have” criteria (**) and most of the other criteria in the remaining dimensions (mainly 3-4’s).

E/I: Exemplar *if* Improved - meets all the “must have” criteria (**), needs some improvement

4	Exceeds the criteria
3	Adheres to the criteria
2	Sometimes adheres to the criteria
1	Occasionally adheres to the criteria
0	Rarely adheres to the criteria

- 4: Exceeds the criteria
- 3: Adheres to the criteria
- 2: Sometimes adheres to the criteria
- 1: Occasionally adheres to the criteria
- 0: Rarely adheres to the criteria

in remaining dimensions (mainly 2-3's).
 R: Needs Revision – Does not meet all “must have” criteria (**) and requires significant revision in one or more dimensions (mainly 1-2's).
 N: Not Recommended - does not meet the criteria in the dimensions (mainly 0-2's).
 N/R: Not ready to review – use rubric criteria to revise and organize instructional material then resubmit for a quality review.

<i>Team/Cat</i> _____	<i>Publisher</i> _____
<i>Evaluator ID</i> _____	<i>Score</i> _____
<i>Submission #</i> _____	

.Criteria for the Review and Adoption of Instructional Materials for:

Category 1, 2 and 3: Science (Next Gen Science) – Grades K-5, 6-8 and 9-12

LEGAL REQUIREMENTS SECTION

A. BASAL INSTRUCTIONAL MATERIALS CRITERIA

The submitted materials must make up an organized system of instruction that align with adopted state standards.

Does the program meet the above requirements for basal instructional materials?

_____ **Yes** _____ **No**

B. EQUITY CRITERIA

Submitted materials must provide models, selections, activities and opportunities for responses which promote respect for all people described in ORS 659.850, OAR 581-021-0045 and support program compliance standards described in OAR 581-021-0046.

Does the program meet the above requirements for equity?

_____Yes

_____No

C. National Instructional Materials Accessibility Standard (NIMAS)

Submitted materials must include assurance from the publishers agreeing to comply with the most current NIMAS specifications regarding accessible instructional materials.

Does the program meet the above requirements for NIMAS?

_____Yes

_____No

D. Digital Manufacturing Standards and Specifications (MSST Form B and M):

Submitted materials must include assurance from the publishers agreeing to comply with the most current digital manufacturing standards and specifications.

Does the program meet the above MSST requirements?

_____Yes

_____No