

Why Do I See So Many Squirrels, But I Can't Find Any Stegosauruses? EQuIP Rubric for Science Evaluation

Developer/Curriculum: CREATE for STEM at MSU

Unit Name: Why Do I See So Many Squirrels, But I Can't Find Any Stegosauruses?

Grade: 3

Date of Review: November 2019

Overall Rating (N, R, E/I, E): E

Category I: NGSS 3D Design Score (0, 1, 2, 3): 3

Category II: NGSS Instructional Supports Score (0, 1, 2, 3): 2

Category III: Monitoring NGSS Student Progress Score (0, 1, 2, 3): 3

Total Score (0–9): 8

[Click here to see scoring guidelines](#)

This review was conducted by the [Science Peer Review Panel](#) using the [EQuIP Rubric for Science](#).

Category I Criteria Ratings		Category II Criteria Ratings		Category III Criteria Ratings	
A. Explaining Phenomena/Designing Solutions	Extensive	A. Relevance and Authenticity	Extensive	A. Monitoring 3D Student Performances	Extensive
B. Three Dimensions	Extensive	B. Student Ideas	Extensive	B. Formative	Extensive
C. Integrating the Three Dimensions	Extensive	C. Building Progressions	Inadequate	C. Scoring Guidance	Adequate
D. Unit Coherence	Extensive	D. Scientific Accuracy	Extensive	D. Unbiased Tasks/Items	Adequate
E. Multiple Science Domains	Adequate	E. Differentiated Instruction	Adequate	E. Coherence Assessment System	Extensive
F. Math and ELA	Extensive	F. Teacher Support for Unit Coherence	Extensive	F. Opportunity to Learn	Adequate
		G. Scaffolded Differentiation Over Time	Adequate		

Summary Comments

Thank you for your commitment to students and their science education. NextGenScience is glad to partner with you in this continuous improvement process. It is obvious that this unit was thoughtfully crafted. The unit is strong in several areas, including coherence, NGSS design, and the student discourse and engagement of student ideas throughout the unit. The unit utilizes a strong overarching phenomenon as stated in the driving question “Why do I see so many squirrels, but I can’t find any stegosauruses?” to drive student learning and sensemaking throughout the unit. This phenomenon weaves through each learning set, serving as the foundation for each learning set level phenomenon, which were carefully crafted to layer student understanding and sensemaking throughout the unit.

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The unit has a strong NGSS design and students have extensive opportunities to develop and use grade level-appropriate elements of each of the dimensions to support their sensemaking. Discipline-based discourse is utilized throughout the unit to support student questioning, clarification, and justification of ideas. The unit is presented through a portal that was easy to navigate and offered a consistent flow throughout each learning set and lesson. Teacher support materials are easily accessible and labeled.

During revisions, the reviewers recommend paying close attention to building progressions, providing differentiated instruction, and including additional scoring guidance. It's important to provide connections between prior learning experiences and development of practices to the expected grade level learning experiences. While the progressions document provided to the reviewers offers a coherent lens of the progression of learning in Grade 3, it's crucial to provide prerequisites of learning proficiency. Differentiation could be strengthened by the addition of extension opportunities for high-interest students or those who have already met performance expectations. Scoring guidance is a critical component of assessment and feedback. The unit would be strengthened with the addition of rubrics and formative assessment guidance for quantitative measures.

The teacher materials presented provide a clear, coherent understanding of the learning pathways in this unit. However, note that the storyline document that is currently linked in the unit overview (home page) does not match the storyline presented in the unit materials reviewed. It is dated 2018–19, so there may have been revisions to the unit materials that have not been updated on the storyline document. This created some confusion with the reviewers initially, however, they focused more on the learning set roadmaps, assessments, resources, and lessons for the review.

Note that in the feedback below, black text is used for either neutral comments or evidence the criterion was met and purple text is used as evidence that the criterion was not met.

Category I. NGSS 3D Design

Score: 3

3: At least adequate evidence for all of the unit criteria in the category; extensive evidence for criteria A–C

2: At least some evidence for all unit criteria in Category I (A–F); adequate evidence for criteria A–C

1: Adequate evidence for some criteria in Category I, but inadequate/no evidence for at least one criterion A–C

0: Inadequate (or no) evidence to meet any criteria in Category I (A–F)

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I.A. Explaining Phenomena/Designing Solutions: Making sense of phenomena and/or designing solutions to a problem drive student learning.

- Student questions and prior experiences related to the phenomenon or problem motivate sense-making and/or problem solving.
- The focus of the lesson is to support students in making sense of phenomena and/or designing solutions to problems.
- When engineering is a learning focus, it is integrated with developing disciplinary core ideas from physical, life, and/or earth and space sciences.

Rating for Criterion I.A Explaining Phenomena/Designing Solutions: Extensive *(None, Inadequate, Adequate, Extensive)*

The reviewers found extensive evidence that learning is driven by students making sense of phenomena or designing solutions to a problem because students are making sense of phenomena to drive learning throughout the entire unit. Driving questions (DQ) are used in a multi-level process. The unit was designed around an overarching phenomenon, “Why do I see so many squirrels, but I can’t find any Stegosauruses?” that serves to introduce each learning set. Each learning set is based on phenomena to spark student curiosity and evoke previous knowledge.

Unit level DQ drive the learning of the entire unit; learning set-level DQ drive the learning for the “sets” within the unit. Students create their own questions within each DQ and keep them up throughout the learning process. Learning Set 1 lesson 1 sets the stage for the unit with a family interview activity that helps students access prior knowledge about squirrels, prehistoric organisms and fossils. Students develop questions for the DQ board based on the interview presentations. These questions are then leveraged in lesson 2 as the students build on each other’s ideas and make connections to their background knowledge. The DQ board/slides offer assistance to teachers in keeping these organized throughout the unit. Multiple phenomena are used to build upon each other and support students as they make sense of the phenomena. Students regularly return to the DQ, adding explanation and building on what they have learned from the learning set phenomena to explain the overarching phenomenon.

Learning Set 1 focuses on the DQ *What do squirrels need to survive?* This learning set provides the foundation for the unit and allows students to begin to make sense of the importance of the environment to an organism’s survival. Learning Set 2 focuses on the structures that squirrels have that allow them to survive, with the DQ of *How is the squirrel’s structure unique and important?* Learning Set 3 centers around the DQ *What other organisms live in the squirrel’s environment, and does the squirrel need them to survive?* This learning set dives deeper into the interactions in the squirrel’s environment and what is needed for survival. Learning Set 4 connects these ideas to those of prehistoric organisms with a DQ *How do scientists use evidence from the past and present to find out about prehistoric organisms?* This learning is elaborated on

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in Learning Set 5 where students engage in the DQ *How can we use fossils to figure out how organisms change over long periods of time?* The unit concludes with ideas about survival and extinction in Learning Set 6 with a DQ of *Why did some animals die out and some live?* Learning Set 6 also culminates in helping the students answer the unit DQ *Why do I see so many squirrels but I can't find any stegosauruses?*

The phenomena and DQs for each learning set and lesson are evident throughout the unit materials, table of contents, learning set roadmaps, lessons, and the learning set assessments.

Suggestions for Improvement

None

I.B. Three Dimensions: Builds understanding of multiple grade-appropriate elements of the science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs) that are deliberately selected to aid student sense-making of phenomena and/or designing of solutions.

- Provides opportunities to *develop and use* specific elements of the SEP(s).
- Provides opportunities to *develop and use* specific elements of the DCI(s).
- Provides opportunities to *develop and use* specific elements of the CCC(s).

Rating for Criterion I.B. Three Dimensions: **Extensive** (None, Inadequate, Adequate, Extensive)

The reviewers found extensive evidence that the materials give students opportunities to build understanding of grade-appropriate elements of the three dimensions because multiple grade-appropriate elements of the SEPs, DCIs, and CCCs were deliberately selected to engage and aid student sense-making of phenomena.

Science and Engineering Practices (SEPs): Extensive

The reviewers found extensive evidence that students have the opportunity to use or develop the SEPs in this unit because of the multiple opportunities for students to engage in all of the practices throughout the unit. The use of specific practices progresses over time throughout the unit and the practices are used in a relevant manner for the context.

Elements of each of the eight practices are evident in the unit and are utilized in relevant, grade appropriate contexts to support sensemaking of phenomena throughout the unit. Elements of seven of the eight practices are evident in at least half of the lesson sets, with elements of four of the practices being dominant in more than half of the lesson sets: **Developing and Using Models, Planning and Carrying out Investigations, Engaging in Argument from Evidence, and Obtaining, Evaluating, and Communicating Information.** Evidence includes, but is not limited to:

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Asking Questions and Defining Problems (included in Learning Sets 1 and 3) - Students engage in asking questions about the phenomena throughout the unit and were involved in *asking questions that could be investigated and predicted reasonable outcomes based on patterns such as cause-and-effect relationships*.

Developing and Using Models (included in Learning Sets 1, 2, 3, 5, and 6) - There is significant evidence of the use and development of this practice throughout the unit. Students *develop a whole class model to describe/explain the phenomena* of squirrel survival in L1.5; *collaboratively develop or revise a model based on evidence that shows the relationship among variables for frequent and regular occurring events* when they reviewed and revised a model that explained interactions between squirrels' needs and how its environment allows it to survive in L1.7 and further revise these models in L2.5 to include how the squirrel's structure is related to its survival. Students continue to revise and develop models throughout the unit and use new information about organisms living in the Jurassic period to revise their models about the Eutheria, its survival, needs, and interactions with other organisms in L5.4. In Learning set 3, students **obtain Information** about how different structures help organisms and use this information to develop and revise models to demonstrate interactions in the habitat system.

Planning and Carrying Out Investigations (included in Learning Sets 1, 2, 3 and 5) - students *make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon*. The whole class discusses their plans for taking notes on their observations of a squirrel's environment and how they survive in L1.4. Students make observations and collect data to understand how squirrels survive in L2.3 and L2.4 and use this alongside the SEP **Analyzing and Interpreting Data** to *represent the data in tables or graphical displays to reveal patterns that indicate relationships* and to *make sense of phenomena using logical reasoning, mathematics, and/or computation*. Students use line plots to understand how squirrels jump (L2.3 and 4) and timelines to think about the sequence of past events (L4.1) and to compare measurements of prehistoric organisms (L5.4). Student **use Mathematics and Computational Thinking** to help them *organize simple data sets to reveal patterns that suggest relationships* (included in Learning sets 2, 4 and 5).

Constructing Explanations and Designing Solutions (included in Learning Sets 2, 4 and 5) - Students *use evidence to construct or support explanations* for why a squirrel has structures to survive in L2.1. Students generate claims, investigate, and provide evidence to support an explanation about time periods in which the stegosaurus and Juramaia would have survived best in Learning Set 4 and analyze information about fossils to generate claims about predators of the Juramaia in Learning Set 5.

Engaging in Argument from Evidence (included in learning Sets 3, 4, 5 and 6) - Students have an opportunity to *construct and support an argument with evidence, data, and/or a model* in L3.3 when they write an email to a city representative requesting more trees be planted in a specific area of the city. They construct arguments with evidence about the best time periods for survival for the

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stegosaurus and Juramaia in Learning Set 4 and in Learning Set 5, work to construct explanations using evidence from fossils to determine how organisms have changed over time. In Learning Set 6, students culminate their learning experience to craft an “extinction story” or explanation.

Obtaining, Evaluating, and Communicating Information (included in Learning Sets 1, 2, 3, 4, and 6) - Students *read and comprehend appropriate texts and/or other media to summarize and obtain scientific ideas and describe how they are supported by evidence* in multiple learning sets. Students *obtain and combine information from books and/or other reliable media to explain phenomena* in Learning Sets 1, 3, and 5 and have the opportunity to *communicate scientific information orally and/or in written formats, including various forms of media* in the culminating activities found in Learning Set 6.

Disciplinary Core Ideas (DCIs): Extensive

The reviewers found extensive evidence that students have the opportunity to use or develop the DCIs in this unit because the DCIs are carefully planned and support students in making sense of phenomena. There are specific elements of the DCI developed throughout the course of the unit. *However, unit materials reference Performance Expectations (PEs) and not specific DCI elements. For the purpose of the review, the reviewers inferred the following DCI elements from the indicated PEs:*

From 3-LS4-1:

- LS4.A - Extensively Met
 - *Some kinds of plants and animals that once lived on Earth are no longer found anywhere*
 - *Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments*

From 3-LS4-2:

- LS4.B - *Partially* met with advantages in surviving
 - *Sometimes the differences in characteristics between individuals of the same species and provide advantages in surviving, finding mates, and reproducing.*

From 3-LS4-3:

- LS4.C - Extensively Met
 - *For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.*

From 3-LS4-4: (Students used DCIs in this PE, *however, they did not use the SEP element of this PE “claim about the merit of a solution to a problem”*)

- LS2.C - Extensively Met
 - *When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment or die.*
- LS4.D - Extensively Met
 - *Populations live in a variety of habitats, and change in those habitats affects the organisms living there.*

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From 3-LS3-1:

- LS3.A - Not met
 - *Many characteristics of organisms are inherited from their parents.*
- LS3.B - Not met
 - *Different organisms vary in how they look and function because they have different inherited information*

From 3-ESS2-1 (This PE is noted in the Learning Set 4 Overview, however it is not addressed or indicated in any of the lessons. It would be helpful to remove it from the overview because the DCI element is not being met in this unit)

- ESS2.D
 - *Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next.*

From 3-ESS2-2

- ESS2.D - Met
 - *Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over the years.*

From 3-PS2-1: (This PE is noted in the Learning Set 2 Overview; however, it is not indicated in any of the lessons. While lessons in Learning Set 1 involve some of the physical science idea, it was not the focus or core idea of the learning. It would be helpful to remove it from the overview because the DCI elements are not being met in this unit.)

- PS2.A
 - *Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion.*
 - *Objects in contact exert forces on each other.*

LS4.A and LS4.C are at the core of this unit. Students are involved in making sense of the phenomena that we see squirrels today and not stegosaurus. These ideas are developed by a careful and intentional development of ideas and learning progressions throughout the unit. While other DCIs are included within the learning progressions, they are used to support the core ideas found in the driving question of the unit. The elements of LS4.A and LS4.C are included in Learning Sets 1, 2, 3, 4, 5 and 6.

Supporting DCI elements from LS4.D are found in Learning Sets 3, 5 and 6 and smaller portions of DCI elements are used to support student sensemaking in two learning sets. ESS2.D: *climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years* is used in Learning Set 4 and LS3.A: *characteristics of organisms are inherited from their parents and other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment* is used in Learning Set 2. While portions of DCI elements are used to support student sensemaking in these learning sets, they are

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not at the core of the unit and typically have been indicated in the learning sets and overviews with grayed out font in the description and/or future units are indicated in parenthesis to note when the DCI element is met.

Crosscutting Concepts (CCCs): Extensive

The reviewers found extensive evidence that students have the opportunity to use or develop the CCCs in this unit because multiple CCC elements are being used and specific CCC elements are developed over the course of this unit.

Throughout the course of this unit, students are engaged in elements of six of the seven CCCs. While quantity of elements is not the goal, there are three specific CCC categories that are developed and become the focus of student engagement and sensemaking in the unit: **Systems and System Models**, **Structure and Function**, and **Cause and Effect**. These concepts are explicitly shared with the teacher in the “Figuring Out, Look Fors, and Evidence Statements” sections of each lesson, as well as in the “look fors” in the assessment progressions for each learning set. The authors have also color coded these to support the thinking about these concepts throughout the lesson.

Evidence includes, but is not limited to:

Systems and System Models (indicated in Learning Sets 1, 3, 5 and 6) - In learning set 1, students work to *describe the components of the environment* where the squirrel lives and *how those components interact with each other*. Students ask questions and make observations about the environment and what a squirrel needs to survive. They use this information to develop and revise models that include the connections between needs and interactions with the environment system. In Learning Set 3, students build on their understanding of the squirrel’s environment and its interactions and begin to develop an understanding that *a system (ecological system) has related parts that make up the whole system and they carry out functions together as a system*. Students investigate and build on understandings of how animals are part of an ecological system and how each animal has specific structure/function to meet their needs in that system. In Learning Sets 5 and 6, students investigate the relationships between organisms and their environment (*system components and interactions*) and how this can be used to explain the extinction of certain animals (*a system cannot function without all the parts working together to carry out the function of the whole system*).

Structure and Function (indicated in Learning Sets 2, 3, 4 and 5) - Students work to understand how the squirrel’s structure is unique and important to its survival in Learning Set 2. They elaborate on this understanding in Learning Set 3 to investigate how animals have specific structures and functions that support their interactions in an ecological system. They move into investigating how fossils can help them understand the structure and function of plants and animals in prehistoric times and how this information provides evidence in how organisms change over time in Learning Sets 4 and 5. *For most of the unit, this CCC is focused more on the K–2 element level: the shape and stability of structures of*

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natural and designed objects are related to their function(s). Knowing this is the first unit of the third grade-year, it is understandable that the grade level of the element might vary to support the needs of the learners. *The 3–5 element expands to the ideas of substructures having shapes and parts that serve functions* - students are engaged at this element level when they investigate the unique structures of the squirrel in Learning Set 2.

Cause and Effect (indicated in Learning Sets 1, 2 and 6) - Students use the lens of Cause and Effect in many ways throughout the unit, most often by *identifying the cause-and-effect relationship* in their explanations of what squirrels need to survive (Learning Set 1) and how their structure is important to their survival (Learning Set 2). The ideas of cause and effect are also used during their arguments from evidence in other learning sets. They wrap up the unit in Learning Set 6 by using *cause and effect relationships to explain change* - the extinction of the stegosaurus.

Scale, Proportion, and Quantity (indicated in Learning Sets 4 and 5) - Students are engaged in thinking about how *natural objects and/or observable phenomena exist from the very small to the immensely large or from very short to very long time periods* as they investigate prehistoric organisms and using fossils as evidence for change over time periods. They use *standard units of measure to describe physical quantities of time* in Learning set 4 using a timeline to support descriptions of the relative time during which events took place in the past. *Standard units of measure are used to describe* and compare measurements of animals in the Jurassic period and this information is used to analyze and revise claims about how organisms survived and interacted with other organisms in Learning Set 5. **Stability and Change** is used alongside this CCC in these learning sets to further develop ideas that *change is measured in terms of differences over time* and that *while some systems appear stable, over long periods of time they will eventually change*.

Patterns - Students are briefly engaged in using *patterns as evidence to support an explanation* in L2.2 and L2.5 as they use patterns of the squirrel’s behavior and interactions with its environment to support claims that their structures are related to their survival. Students investigate how squirrels balance and how the squirrel’s unique ankle structure allows them to come down trees head first.

Suggestions for Improvement

SEPs

- While students are engaged in multiple SEP elements and develop in-depth skills with several SEP elements, they do not fully develop the SEP element indicated in PE 3-LS4-4: *Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change*. Students do not use evidence to argue the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. This PE is indicated in Learning Sets 3, 5, and 6. The SEP section of the PE is grayed out in some lessons and cannot be claimed as fully met. Students are engaged in making sense of how an organism’s environment can change and that the types of plants and

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animals that live there may also change, but they did not make claims regarding solutions to problems caused by these environmental changes and argue their merits. Consider adding support for student development of this element of the PE into one of the later learning sets to fully meet this PE.

- Developing and using models is a significant practice in this unit. Students begin in Learning Set 1 developing models to explain how a squirrel survives outside. Lesson 1.5 states “Explain that a model is a picture that can be used to describe an event in nature...” This statement is misleading, as a picture is only one form of a model and could lead to further misconceptions about models. Consider revising the statement to explore the idea that “a model is a tool that explains...” and these tools include diagrams, drawings, physical replicas, etc. (See NGSS [Appendix F](#) for language on this SEP.) The teacher could then explain that for their models in this lesson they will be using pictures to explain the event. Future learning sets develop the use of the physical model and additional diagrams and drawings, so allowing them to be flexible with their definition of a model would support the progression of this SEP.

DCIs

- It would be very helpful to list DCI claims as opposed to PE claims in the unit. For example, PE 3-LS4-4 is claimed in Learning Sets 3, 5, and 6. While the DCI is addressed thoroughly, the SEP is not. Consider making explicit reference to DCIs in the unit materials to support claims for student proficiency and coherence in learning progressions.

CCCs

- Based on the materials reviewed, this unit would be the first unit in a sequence of four units for Third Grade. It is therefore important for teachers to understand what students should be doing differently in third grade with the CCC elements to support student thinking and reasoning. When using a lower grade banded element (e.g., K–2 structure and functions), consider adding a statement of reasoning for the teachers to support their understanding of why the students are engaged at a lower grade band level during this portion of the learning.
- Consider adding guidance for use of the 3–5 elements of the CCCs in student explanations. For example, in Lesson 6.3, to support students in considering that the disappearance of 45 mammals in Australia coincided with the arrival of humans, class discussion could be added to help students build proficiency using the lens of Cause and Effect with the element: *Events that occur together with regularity, may or may not be a cause and effect relationship.*

I.C. Integrating the Three Dimensions: Student sense-making of phenomena and/or designing of solutions requires student performances that integrate elements of the SEPs, CCCs, and DCIs.

Rating for Criterion I.C. Integrating the Three Dimensions: Extensive
(None, Inadequate, Adequate, Extensive)

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The reviewers found extensive evidence that student performances integrate elements of the three dimensions in service of figuring out phenomena or designing solutions to problems because there are multiple opportunities for students to figure something out in a way that requires grade-appropriate elements of all three dimensions of the standards.

The three dimensions intentionally work together to help students appropriately explain the unit driving question, as well as other phenomena used in support of making sense of the driving question/phenomena. Evidence includes, but is not limited to:

- Learning Set 1 introduces students to ideas about **developing and using models** (SEP) to explain phenomena while also supporting the students in understanding how a **system** can be described in terms of its components and their interactions (CCC) while investigating the squirrel's environment and what squirrels need to survive (DCI).
- Learning Set 2 integrates elements of the SEP of **Developing and Using Models** to support student sense making with ideas around the CCC of **Structure and Function** of specific body parts (ankles, teeth, etc.) that a squirrel uses for survival (DCI).
- This understanding is deepened in Learning Set 3 when students **obtain and communicate information** (SEP) about how **structures** of different organisms (CCC) support their survival in their habitats (DCI) and students revise their **models** (SEP) to reflect **systems** of interactions (CCC) in a habitat or specific environment (DCI).
- In Learning Set 4, students use a timeline of past events (SEP) to consider how scientists use information from the past and present to find out about extinct organisms (DCI). Students use the CCC lenses of **Stability and Change** and **Scale, Proportion, and Quantity** to make sense of these ideas.
- **Scale, proportion, and quantity** (CCC) provides a lens for student sense-making in Learning Set 5 when students analyze and revise claims (SEP) about how organisms survived and interacted with other organisms using evidence from fossils (DCI).
- Students use the lenses of **systems** and **cause and effect** to explain extinction in their extinction stories in Learning Set 6. Students craft a story that explains (SEP) that the extinction event of the stegosaurus (DCI) was caused by changing environment (CCC/DCI) that made it impossible for it to meet at least one need.

Suggestions for Improvement

None

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I.D. Unit Coherence: Lessons fit together to target a set of performance expectations.

- Each lesson builds on prior lessons by addressing questions raised in those lessons, cultivating new questions that build on what students figured out, or cultivating new questions from related phenomena, problems, and prior student experiences.
- The lessons help students develop toward proficiency in a targeted set of performance expectations.

Rating for Criterion I.D. Unit Coherence: Extensive
(None, Inadequate, Adequate, Extensive)

The reviewers found extensive evidence that lessons fit together coherently to target a set of performance expectations because each lesson builds on prior lessons by addressing questions raised in those lessons, cultivating new questions that build on what students figured out, or cultivating new questions from related phenomena, problems, and prior student experiences. The lessons help students develop toward proficiency in a targeted set of performance expectations.

The lesson sets build on each other, resulting in an evolving understanding of science ideas and concepts needed to explain the phenomenon or design a solution to a problem—but this *building on* is motivated by student questions and experiences. The learning sets are designed to build towards proficiency in the identified performance expectations. The unit storyline threads the learning sets together to address the overarching phenomena related to the adaptation of organisms and change over time. Materials in the unit support this idea of coherence: unit overview, table of contents, learning set roadmaps, learning set assessments, etc.

Claims and explanations are crafted and revised throughout each learning set and then are used with the culmination lesson set. Students begin developing models to make sense of the phenomena in Learning Set 1 and continue to revise their models and thinking throughout each of the subsequent learning sets.

Suggestions for Improvement

Coherence is a strength for the unit. Updating the Storyline to reflect the lessons in each learning set would offer even more support to teachers and reduce any confusion regarding the unit storyline.

I.E. Multiple Science Domains: When appropriate, links are made across the science domains of life science, physical science and Earth and space science.

- Disciplinary core ideas from different disciplines are used together to explain phenomena.
- The usefulness of crosscutting concepts to make sense of phenomena or design solutions to problems across science domains is highlighted.

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Rating for Criterion I.E. Multiple Science Domains: Adequate *(None, Inadequate, Adequate, Extensive)*

The reviewers found adequate evidence that links are made across the science domains when appropriate because, although the unit focuses on only one domain, the phenomena driving the lessons can be fully addressed within that domain. There aren't any obvious missed opportunities to make connections across disciplines.

The unit focuses on multiple ideas within Life Science and has brief connections with Earth and Space Science and Physical Science. While there are passing references to core ideas in other disciplines, *the connections made don't fully convey how ideas from different disciplines are sometimes connected or how ideas from different domains can often be used together to explain phenomena.*

Learning Set 2 has a brief connection to PS2.A as students analyze the structures of a squirrel—why/how they can balance. They develop an investigation to physically model this phenomenon then work to compare the squirrel structures to the marmot's structures.

Learning Set 4 allows students the opportunity to obtain and combine information to describe climate and geographical features past and present—using this as data and evidence that environments long ago were different from those of today, evidence of ESS2.D.

Suggestions for Improvement

Consider how the materials could assist a teacher in understanding these connections such that they could support students in making these connections with intentionality.

I.F. Math and ELA: Provides grade-appropriate connection(s) to the Common Core State Standards in Mathematics and/or English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects.

Rating for Criterion I.F. Math and ELA: Extensive *(None, Inadequate, Adequate, Extensive)*

The reviewers found extensive evidence that the materials provide grade-appropriate connections to mathematics, English language arts (ELA), history, social studies, or technical standards because grade-appropriate mathematics and ELA-Literacy are purposefully incorporated into lessons to help students make these connections.

Mathematics connections are evident throughout the unit: Learning Set 2 uses measurement data and expects students to create line plots with this data; Learning Set 4 uses a timeline and the use of

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reading/writing large numbers within the timeline (although this is more of a Grade 4 standard and many numbers were well beyond that standard); Learning Set 5 utilizes measurement data to create graphical displays and compare sizes and measurements of animals.

There are extensive **ELA-Literacy** connections throughout the unit: Learning Sets 1 and 3 incorporate research; reading and communicating information from texts is found throughout the unit in multiple learning sets; writing through claims and explanations and within their student notebooks is also evident throughout all learning sets and Learning Set 6 culminates the unit with students writing an extinction story. Reading materials go beyond textbooks and include news articles, journal articles, infographics, and websites of scientific entities. Students have multiple opportunities for high-level verbal discourse in a variety of formats and scenarios.

Suggestions for Improvement

None

Overall Category I Score (0, 1, 2, 3): 3

Unit Scoring Guide – Category I

Criteria A–F

3: At least adequate evidence for all of the unit criteria in the category; extensive evidence for criteria A–C

2: At least some evidence for all unit criteria in Category I (A–F); adequate evidence for criteria A–C

1: Adequate evidence for some criteria in Category I, but inadequate/no evidence for at least one criterion A–C

0: Inadequate (or no) evidence to meet any criteria in Category I (A–F)

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Category II. NGSS Instructional Supports

Score: 2

Criteria A-G:

3: At least adequate evidence for all criteria in the category; extensive evidence for at least two criteria

2: Some evidence for all criteria in the category and adequate evidence for at least five criteria, including A

1: Adequate evidence for at least three criteria in the category

0: Adequate evidence for no more than two criteria in the category

II.A. Relevance and Authenticity: Engages students in authentic and meaningful scenarios that reflect the practice of science and engineering as experienced in the real world.

- Students experience phenomena or design problems as directly as possible (firsthand or through media representations).
- Includes suggestions for how to connect instruction to the students' home, neighborhood, community and/or culture as appropriate.
- Provides opportunities for students to connect their explanation of a phenomenon and/or their design solution to a problem to questions from their own experience.

Rating for Criterion II.A. Relevance and Authenticity: Extensive
(None, Inadequate, Adequate, Extensive)

The reviewers found extensive evidence that the materials engage students in authentic and meaningful scenarios that reflect the real world because students engage in the phenomena as directly as possible to generate compelling lines of inquiry that come from their experience, community, or culture.

The materials are structured in a way that values the funds of knowledge that students bring to school from their homes and communities as a launching point for learning, balanced with common (firsthand) opportunities to experience the phenomena in the classroom.

The unit provides opportunities for students to connect their own questions and prior experiences to the targeted learning. Students begin the unit with a home-connection activity regarding prior experiences with squirrels. Squirrels are a good example of an animal with which most students will have prior experience.

Additional resources are provided to support teachers and students in making sense of the phenomena in the case that their environment may not be conducive to the personal observations indicated in the lessons. Videos and other reading options have been provided to assist in alternative teaching options.

Suggestions for Improvement

None

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II.B. Student Ideas: Provides opportunities for students to express, clarify, justify, interpret, and represent their ideas and respond to peer and teacher feedback orally and/or in written form as appropriate.

Rating for Criterion II.B. Student Ideas: Extensive
(None, Inadequate, Adequate, Extensive)

The reviewers found extensive evidence that the materials provide students with opportunities to both share their ideas and thinking and respond to feedback on their ideas because student ideas drive most of the learning in the unit. Students provide support to others and through discourse elicit additional ideas that students build upon to develop a deeper understanding.

Students are given extensive opportunities throughout the unit to communicate their ideas in a variety of ways. Students use their ideas and cite shared ideas of others to build upon prior understanding. Student artifacts include elaborations (which may be written, oral, pictorial, and kinesthetic, modeling) of reasoning behind their answers, and show how students' reflective thinking changes over time. Resources to support teachers with discourse and clarifying student ideas are provided in the materials.

Students are given opportunities to use multiple modalities to demonstrate new understanding and revise thinking based on peer and teacher feedback, as well as personal reflections. Multiple lessons conclude with students recording their learning or reflecting on the lesson in their journal.

By the end of instruction, students will be able to transfer their learning to situations and ideas beyond the specified phenomena. Students all have a point of entry and have opportunities to revise thinking, and revision work is evident within their discussions, written work, models, etc.

Suggestions for Improvement

None

II.C. Building Progressions: Identifies and builds on students' prior learning in all three dimensions, including providing the following support to teachers:

- Explicitly identifying prior student learning expected for all three dimensions
- Clearly explaining how the prior learning will be built upon.

Rating for Criterion II.C. Building Progressions: Inadequate
(None, Inadequate, Adequate, Extensive)

The reviewers found inadequate evidence that the materials identify and build on students' prior learning in all three dimensions because the materials make little to no connections between expected prior learning and the learning in this unit.

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Evidence related to this criterion includes:

- The reviewers were provided with a “Progressions Document for 3rd Grade” that provides an overview of how the SEPs, DCIs, and CCCs progress across the year within this specific curriculum project. This document offers information about the progression of learning across a school year.
- The materials include a list of Performance Expectations from the k-2 grade-band, however this document does not explicitly identify prior student learning expected for all three dimensions in k-2 nor do they clearly explain how the prior learning will be built upon in the unit.

It should be noted that for the focus DCIs of the unit, LS4.A and LS4.C, that Third grade is the first time these ideas are presented in the NGSS, so there will not be “prior DCI learning” for these specific DCIs. However, there are foundational ideas in K–2 that support student learning in these DCIs within LS1.A and LS1.C.

Suggestions for Improvement

- Consider clarifying in the materials the expected level of proficiency students should have with all three dimensions for the core learning in the unit and providing suggestions for adaptation if students are above or below this level. To achieve a rating of adequate or above, materials would need to identify what learning students are expected to come in with for all three dimensions and then explain how this learning will be added to during the learning.
- Consider adding prerequisite statements regarding proficiency from K–2 in the dominant SEPs and CCCs of the unit, indicating what students would need to be sufficiently prepared for the learning experiences in this unit.

II.D. Scientific Accuracy: Uses scientifically accurate and grade-appropriate scientific information, phenomena, and representations to support students’ three-dimensional learning.

Rating for Criterion II.D. Scientific Accuracy: Extensive *(None, Inadequate, Adequate, Extensive)*

The reviewers found extensive evidence that the materials use scientifically-accurate and grade-appropriate scientific information because all science ideas included in the materials are accurate and there is support for teachers to clarify potential alternate conceptions that they (or their students) may have.

The unit’s science content is accurate and reading passages and videos all supported the science content and were directly related to the unit. Resources and references cited were all credible. Science ideas presented in support of the core unit DCI LS4.A and LS4.C were well developed and

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intentional in the development across the six learning sets.

There is strong support for teachers to clarify potential alternate conceptions that students may have. Discourse prompts provide guidance in clarifying student ideas and applying their thinking to others' ideas throughout the unit. As students develop and revise their models, teachers are offered specific "look fors" and guidance as to what students should be figuring out through each piece of the process.

Suggestions for Improvement

None

II.E. Differentiated Instruction: Provides guidance for teachers to support differentiated instruction by including:

- Appropriate reading, writing, listening, and/or speaking alternatives (e.g., translations, picture support, graphic organizers, etc.) for students who are English language learners, have special needs, or read well below the grade level.
- Extra support (e.g., phenomena, representations, tasks) for students who are struggling to meet the targeted expectations.
- Extensions for students with high interest or who have already met the performance expectations to develop deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts.

Rating for Criterion II.E. Differentiated Instruction: Adequate *(None, Inadequate, Adequate, Extensive)*

The reviewers found adequate evidence that the materials provide guidance for teachers to support differentiated instruction because supports are provided for language learners, struggling learners, or students who need support with the discourse throughout the instruction. However, lesson materials do not provide extensions for high-interest students and those that have already met performance expectations.

Embedded language support is evident in almost every lesson. Differentiation for reading support is evident in L1.6, L4.4 L5.4 readings through the support of "WeRead" texts. Options for supporting students' independent, partner, or small group reading are evident in L1.6, L3.1, and L5.4. Multiple modalities are used throughout the unit, giving multiple learning access points to students that support the sense-making. While these are not explicitly labeled as "differentiation" in the unit, the supports for sense-making are embedded in the instructional design.

This unit was designed with discipline-based discourse as a means of differentiated supported for sensemaking. However, the reviewers found little evidence of support for higher-interest students or those already meeting performance expectations, beyond Learning Set 4, which offers some potential extensions through the mathematics lens provided.

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Suggestions for Improvement

- This unit is designed to allow all students to experience the phenomena, ask their own questions, work with peers, and explain their ideas. Adding extensions for above-level or highly-engaged students into the instructional materials would allow a higher rating on this criterion.
- Because some of the lessons in Learning set 4 utilize higher level Mathematics standards, those particular lessons could be used by the teacher for differentiation. The Common Core states that in Grade 4, students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place. In L4.0, students are looking at multiples of 1,000,000 in order to complete the timeline. Lesson 4.0 involves numbers larger than normally used in Grade 4. This is an organic layer of differentiation that could easily be provided in the materials.

II.F. Teacher Support for Unit Coherence: Supports teachers in facilitating coherent student learning experiences over time by:

- Providing strategies for linking student engagement across lessons (e.g. cultivating new student questions at the end of a lesson in a way that leads to future lessons, helping students connect related problems and phenomena across lessons, etc.).
- Providing strategies for ensuring student sense-making and/or problem-solving is linked to learning in all three dimensions.

Rating for Criterion II.F. Teacher Support for Unit Coherence: **Extensive** (None, Inadequate, Adequate, Extensive)

The reviewers found extensive evidence that the materials support teachers in facilitating coherent student learning experiences over time because student sensemaking of the phenomena coupled with student questions are driving the learning throughout and across the unit.

The Sprocket portal offers an ease of management of the detailed learning set documents that assist the teacher in bridging the content from one learning set to another to make sense of the overarching phenomenon. A unit overview map is provided to give clarity to the sequence of learning sets and associated phenomena that work together to support student sensemaking of the overarching phenomenon. A table of contents is also provided to show teachers detailed descriptions, standards, and three dimensions within each lesson. A storyline document is also provided to give coherence throughout the unit. *However, the current version posted does not reflect the content in the lesson materials posted in sprocket.*

All learning sets contain a learning set roadmap, offering visual coherence of the lessons within that learning set. The phenomena and questions drive the learning across lessons. Students often cultivate new questions at the end of a lesson that lead to future investigations. Students are engaged with

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phenomena that are meaningful and relevant, that have intentional access points and supports for most students, and that can be explained or solved through the application of targeted grade-appropriate SEPs, CCCs, and DCIs as the central component of learning. In all lessons, students make progress towards elements of each dimension that help the student also make progress on the questions connected to the phenomena. Learning set assessment documents also provide a level of coherence and support toward the student progress in each learning set.

Suggestions for Improvement

None

II.G. Scaffolded differentiation over time: 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.

Rating for Criterion II.G. Scaffolded Differentiation Over Time: Adequate (None, Inadequate, Adequate, Extensive)

The reviewers found adequate evidence that the materials support teachers in helping students engage in the practices as needed and gradually adjust supports over time because there is evidence of a change in how specific SEPs are being used from the beginning to the end of the unit.

Supports are provided for all students to engage in the SEPs in ways that not only integrate the other two dimensions, but also explicitly build student understanding and proficiency in the SEPs over the course of the unit. These are evident in the “look for” statements provided in each lesson and learning set assessment guide.

Evidence of scaffolded differentiation of *Developing and Using Models* across the unit is found in LS1.5, LS1.7, LS2.2, and LS5.4. Students’ explanations and use of evidence to support claims and arguments were also strengthened and revised across the learning sets.

Suggestions for Improvement

Stronger evidence for this criterion could be found if the materials provided examples of student work related to the SEPs at critical points within the unit, allowing insight into the progression that should be visible to teachers throughout the unit.

Overall Category II Score (0, 1, 2, 3): 2

Unit Scoring Guide – Category II
Criteria A-G:

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- 3:** At least adequate evidence for all criteria in the category; extensive evidence for at least two criteria
- 2:** Some evidence for all criteria in the category and adequate evidence for at least five criteria, including A
- 1:** Adequate evidence for at least three criteria in the category
- 0:** Adequate evidence for no more than two criteria in the category

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Category III. Monitoring NGSS Student Progress

Score: **3**

Criteria A–F:

3: At least adequate evidence for all criteria in the category; extensive evidence for at least one criterion

2: Some evidence for all criteria in the category and adequate evidence for at least five criteria, including A

1: Adequate evidence for at least three criteria in the category

0: Adequate evidence for no more than two criteria in the category

III.A. Monitoring 3D student performances: Elicits direct, observable evidence of three-dimensional learning; students are using practices with core ideas and crosscutting concepts to make sense of phenomena and/or to design solutions.

Rating for Criterion III.A. Monitoring 3D Student Performances: Extensive

(None, Inadequate, Adequate, Extensive)

The reviewers found extensive evidence that the materials elicit direct, observable evidence of students using practices with core ideas and crosscutting concepts to make sense of phenomena because assessment tasks within the instructional materials focus on figuring out the phenomena and require students to use sense-making in the targeted three-dimensions.

The core of the grade-appropriate SEP elements that students are required to demonstrate is in service of students making sense of phenomena or designing solutions to problems. A substantial portion of the tasks (and a substantial portion of individual tasks) requires students to use grade-appropriate CCC elements to successfully respond to prompts and the CCC elements are routinely used in service of sense-making. The Learning Set Assessment Guides offer support in understanding what students should be figuring out along with what to look for in student responses and support for discourse. Evidence statements are provided as additional support.

Tasks are driven by well-crafted phenomena that are able to elicit rich student performances. Most scenarios are rich, based on specific, real-world, puzzling events or instances, and require grade-appropriate three-dimensional performances to address. They involve multiple modalities to present information in meaningful ways, and all information is appropriate to the grade. New information is presented as needed to keep the task sufficiently supported, engaging, and rigorous.

Suggestions for Improvement

None

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III.B. Formative: Embeds formative assessment processes throughout that evaluate student learning to inform instruction.

Rating for Criterion III.B. Formative: Extensive *(None, Inadequate, Adequate, Extensive)*

The reviewers found extensive evidence that the materials embed formative assessment processes throughout that evaluate student learning and inform instruction. There are multiple opportunities for formative assessment that are not discrete assessment opportunities alone, but rather processes of the learning.

All learning sets include a Learning Set Assessments document that provides clarity towards the formative assessment opportunities in each lesson within that learning set. These opportunities are also highlighted in each lesson format. Formative assessments are embedded as part of learning–instructional tasks, in which students are generating individual or group artifacts (discourse, models, etc.). Each lesson has information about what students should be figuring out, what to “look for” in the student work or discourse, and evidence statements to support instructional performance, which further informs the instruction in the next lesson or learning set. This information is provided both on the lesson page and in the learning set assessment documents provided in each learning set overview.

Suggestions for Improvement

None

III.C. Scoring guidance: Includes aligned rubrics and scoring guidelines that provide guidance for interpreting student performance along the three dimensions to support teachers in (a) planning instruction and (b) providing ongoing feedback to students.

Rating for Criterion III.C. Scoring Guidance: Adequate *(None, Inadequate, Adequate, Extensive)*

The reviewers found adequate evidence that the materials include aligned rubrics and scoring guidelines that help the teacher interpret student performance for all three dimensions because the final Learning Set of the unit includes scoring rubrics that provide the connection between the assessment, the targeted three-dimensional learning goals, and the learning experiences students have previously had.

Evidence related to this criterion include:

- The unit offers teachers guidance and support with student performance and sense-making through their discourse, utilizing prompts to guide teachers in clarifying and extending student ideas.

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- A scoring guidance is provided for Learning Set 6 which includes a sample scoring rubric along with an example of a student artifact that has been scored based on the rubric.
- There's no evidence of a scoring guidance provided for Learning Set 1-5 even though all of these Learning Sets include a clear set of Learning Set Formative Assessments. No guidance is provided for students and teachers to interpret student progress in these Learning Sets. Minimal guidance is provided for students and teachers to interpret student progress in these learning sets. There are few examples of student work or responses in L1.5 and L3.1 which offer guidance and support to students, teachers, and/or parents.
- The reviewers were provided with a post-unit assessment that was used as part of the research pilot process. This assessment provides a scoring rubric for the tasks involved. However, this assessment is not posted in Sprocket with the learning materials, and developers noted that the Post Unit Assessment and scoring rubric would be made available to users of the unit eventually.

Suggestions for Improvement

- Scoring guidance in all Learning Sets would ideally support teachers, students, and parents in monitoring student progress toward their ultimate learning goals.
- Similar to the scoring guidance and sample student work provided in Learning Set 6, consider including a scoring rubric and various student artifacts for Learning Set 1-5.

III.D. Unbiased tasks/items: Assesses student proficiency using methods, vocabulary, representations, and examples that are accessible and unbiased for all students.

Rating for Criterion III.D. Unbiased Task/Items: **Adequate** (None, Inadequate, Adequate, Extensive)

The reviewers found adequate evidence that the materials assess student proficiency using accessible and unbiased methods, vocabulary, representations, and examples because the material in this unit was accessible and unbiased for most students.

The materials use developmentally-appropriate text, provide tasks that do not assume all students know culturally-specific knowledge, and use a variety of modalities to collect information from students. However, the reviewers had concerns with the reading text "Money Grows Trees" found in L3.3. While the intent of the article is good, it raised concerns regarding how students might perceive their environment after reading the article. This article might draw more attention to a 'rich vs. poor' mentality and might surface more inequality of income issues than the intended purpose. There are also areas of the country that consider squirrels a nuisance rather than a sign of a thriving environment. This may be an issue that could be addressed in the teacher supports.

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Suggestions for Improvement

Consider finding an article to replace the reading text “Money Grows Trees.” The replacement might come from a different perspective about nature, city or community parks, or how these environments support our health or happiness.

III.E. Coherent Assessment system: Includes pre-, formative, summative, and self-assessment measures that assess three-dimensional learning.

Rating for Criterion III.E. Coherent Assessment System: Extensive

(None, Inadequate, Adequate, Extensive)

The reviewers found extensive evidence that the materials include pre-, formative, summative, and self-assessment measures that assess three-dimensional learning because the whole assessment system works together to measure the intended student learning across the materials.

Materials include assessments that are consistently designed to connect to learning goals and require students to apply appropriate elements of the three dimensions to make sense of the phenomenon or solve the problem.

Most or all tasks and items are multi-dimensional, there are significant tasks, and the measurement of the three dimensions proportionally matches up with the learning goals. The rationale is carefully mapped out over the course of the materials for all three dimensions, including how each task will measure student learning and provide feedback to teachers to inform instruction and students to inform learning.

The unit uses a variety of measures and provides multiple assessment opportunities so that students can demonstrate their understanding of the same learning goals in a variety of ways. Assessment includes pre-assessment, formative, summative, and self-assessment measures to assess three-dimensional learning. While traditional pre-assessment is not used in this unit, students are engaged in pre-assessment activities with the family engagement activity and the initial experience with the DQs in the first few lessons. Students self-assess through multiple reflection activities found at the end of many lessons that allow students to draw or write about their reflections in learning.

Suggestions for Improvement

- In support of the suggestions for III.C, the reviewers recommend the following:
 - Student self-assessment could be strengthened through the addition of scoring or reflection rubrics to support feedback on their progress in learning.
 - It would be helpful if additional guidance were provided for teachers to support feedback to students throughout the unit.

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III.F. Opportunity to learn: Provides multiple opportunities for students to demonstrate performance of practices connected with their understanding of disciplinary core ideas and crosscutting concepts and receive feedback

Rating for Criterion III.F. Opportunity to learn: Adequate
(None, Inadequate, Adequate, Extensive)

The reviewers found adequate evidence that the materials provide multiple opportunities for students to demonstrate performance of practices connected with their understanding of core ideas and crosscutting concepts because students engage in multiple three-dimensional performances that are opportunities for them to demonstrate learning over time. Student performance of the three dimensions is evident and students are given multiple opportunities to demonstrate their learning through the learning sets and the unit.

Evidence includes, but is not limited to:

- Each lesson and learning set provides “Look for” statements that offer guidance for oral and discourse feedback. L1.3 offers the opportunity for peer to peer feedback. In L2.3, students work collaboratively to construct an explanation and apply others’ ideas in the process. Students listen to and think about others’ ideas in several lessons, including L4.5. In L5.3 and L5.4, students apply their thinking with others’ ideas.
- While there are multiple opportunities for students to express and demonstrate their learning, the opportunities for teachers and students to be engaged in multiple modalities of feedback—written and oral feedback—in a timely fashion are not always indicated nor is specific guidance given for this feedback. Students are provided opportunities to utilize feedback from peers and others’ ideas to construct new learning, but the opportunity for teacher feedback is not often evident or explicit in the materials.

Suggestions for Improvement

Consider including support for written forms of feedback, both with peers and teachers, as well as providing some specific prompts teachers can utilize to offer feedback from the formative assessments. Student self-feedback would be strengthened by adding scoring guidance or criteria to some of the tasks, providing explicit details towards what they need to progress, and allowing them feedback on their process.

Overall Category III Score (0, 1, 2, 3): 3

Unit Scoring Guide – Category III

Criteria A–F:

3: At least adequate evidence for all criteria in the category; extensive evidence for at least one criterion

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- 2: Some evidence for all criteria in the category and adequate evidence for at least five criteria, including A
 1: Adequate evidence for at least three criteria in the category
 0: Adequate evidence for no more than two criteria in the category

Overall Score

Category I: NGSS 3D Design Score (0, 1, 2, 3): 3

Category II: NGSS Instructional Supports Score (0, 1, 2, 3): 2

Category III: Monitoring NGSS Student Progress Score (0, 1, 2, 3): 3

Total Score: 8

Overall Score (E, E/I, R, N): E

Scoring Guides for Each Category
<p>Unit Scoring Guide</p> <p>Category I (Criteria A–F): 3: At least adequate evidence for all of the unit criteria in the category; extensive evidence for criteria A–C 2: At least some evidence for all unit criteria in Category I (A–F); adequate evidence for criteria A–C 1: Adequate evidence for some criteria in Category I, but inadequate/no evidence for at least one criterion A–C 0: Inadequate (or no) evidence to meet any criteria in Category I (A–F)</p> <p>Category II (Criteria A–G): 3: At least adequate evidence for all criteria in the category; extensive evidence for at least two criteria 2: Some evidence for all criteria in the category and adequate evidence for at least five criteria, including A 1: Adequate evidence for at least three criteria in the category 0: Adequate evidence for no more than two criteria in the category</p> <p>Category III (Criteria A–F): 3: At least adequate evidence for all criteria in the category; extensive evidence for at least one criterion 2: Some evidence for all criteria in the category and adequate evidence for at least five criteria, including A 1: Adequate evidence for at least three criteria in the category 0: Adequate evidence for no more than two criteria in the category</p>

Overall Scoring Guide
<p>E: Example of high quality NGSS design—High quality design for the NGSS across all three categories of the rubric; a lesson or unit with this rating will still need adjustments for a specific classroom, but the support is there to make this possible; exemplifies most criteria across Categories I, II, & III of the rubric. (total score ~8–9)</p> <p>E/I: Example of high quality NGSS design if Improved—Adequate design for the NGSS, but would benefit from some improvement in one or more categories; most criteria have at least adequate evidence (total score ~6–7)</p> <p>R: Revision needed—Partially designed for the NGSS, but needs significant revision in one or more categories (total ~3–5)</p> <p>N: Not ready to review—Not designed for the NGSS; does not meet criteria (total 0–2)</p>