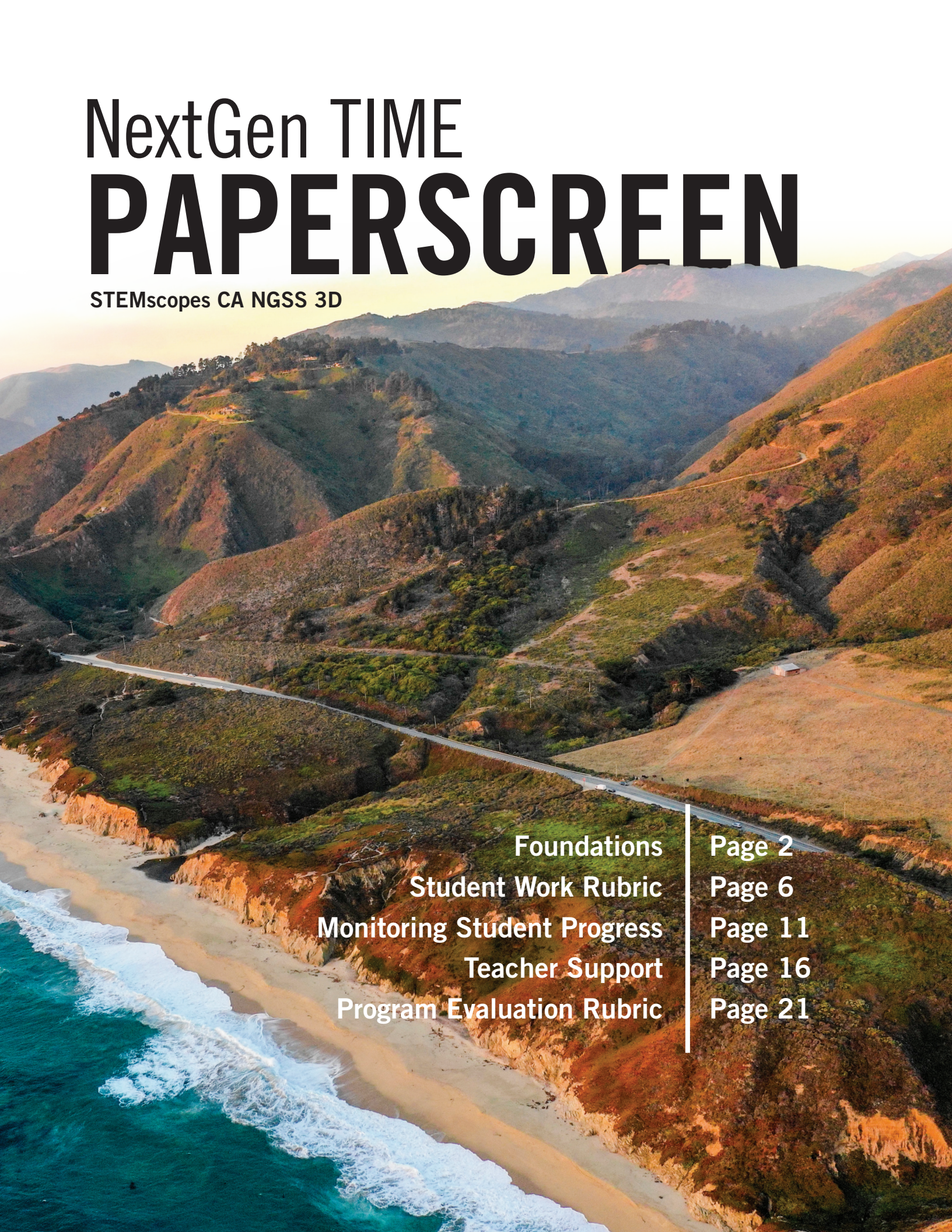
NextGen TIME
PAPERSCREEN

STEMscopes CA NGSS 3D



Foundations.

F1. Presence of Phenomena/Problem. The materials include phenomena/problems that

- have the potential to drive student learning.
- have the potential to connect across the dimensions.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D was written and designed after the CA Framework. Each segment is organized as the Framework intended, with a cluster of PE's, guiding questions, and a storyline. The defining phenomena element of each segment is the anchoring phenomenon event and driving question; the defining phenomena element of each scope is the investigative phenomenon and the everyday phenomenon in the lessons. Over the course of a segment, students anchor their learning in the Mission Log so at the end of the segment they can develop an Action Plan to apply the anchoring phenomenon to real-world problems. Understanding the phenomena comes through the hands-on investigations of each scope, where students experience everyday phenomena that are tied to the investigative phenomena. The investigative phenomena of each scope underpin the three-dimensional learning. This layered lesson design thus gives students many opportunities to use, combine, and question the DCIs, SEPs, CCCs, and EPCs sparking inquiry, and ultimately driving student learning by integrating their own background experiences, passions, and awareness of contemporary issues with the use of daily phenomena elicited from your students.

What to Look at...	What to Observe...
I. Anchoring phenomenon (see: a segment of your choice > Home) A. Anchoring Phenomena Event B. Teacher Guide (see: Mission Log) C. Teacher Guide (see: Action Plan)	I. The anchoring phenomenon event provides a shared experience for students. The teachers will use questioning strategies to guide students to the driving question (Anchoring Phenomena Event and Mission Log) and application (Action Plan) of the three dimensions learned across the segment's scopes.
II. Scopes of the Segment (see: list of scopes included inside of the given segment > Home)	II. Segments are composed of 2-5 scopes; scopes are taught sequentially to build student understanding and comprehension of the three dimensions.
III. Investigative Phenomenon (see: a scope of your choice within the given segment > Engage > Investigative Phenomena)	III. Each scope centers on an investigative phenomenon; these investigative phenomena enable students to tie their new learnings back to the anchoring phenomenon and make progress on their Action Plans by connecting the three dimensions across lesson activities.
IV. Everyday Phenomena (see: a scope of your choice within the given segment > Engage > Hook and > Explore > Each explore	IV. Each hands-on activity uses everyday phenomena to connect to the Investigative Phenomena of the scope.

F2. Presence of Three Dimensions. The materials include the three dimensions, such that

- the DCIs, SEPs, and CCCs are present and have the potential to be the focus of student learning.
- when engineering design is a learning focus, it is integrated with the appropriate dimensions (i.e., engineering is not isolated).

SUMMARY RESPONSE

The three dimensions were used as the basis for STEMscopes CA NGSS 3D's lesson design. Through authentic learning experiences wrapped within the 5E + intervention and acceleration learning model, each scope uses an integrated approach to teaching and applying the DCIs, SEPs, and CCCs. Accordingly, holistic application of the three dimensions across the scope's scaffolded lesson activities is the cornerstone to solving the investigative phenomenon with the end-of-scope claim-evidence-reasoning assessment. 3D callouts are embedded throughout lesson materials to explicitly denote the use of the three dimensions. With performance expectations that carry an ETS(s), integrated Engineering Solution activities are provided to challenge students with the engineering design process and use of the three dimensions.

What to Look at...	What to Observe...
I. Three-Dimensional Focus (see: home screen, see: Home > Standards Alignment)	I. The DCIs, SEPs, and CCCs used in each scope are discussed in the Three-Dimensional Focus. These give insight into the lesson activities' design, purpose, and boundaries as well as guiding the focus of student learning. The standards alignment element expands on the three dimensions covered in every scope.
II. Investigative Phenomenon (see: Engage > Investigative Phenomena)	II. The Investigative Phenomenon is the central focus of student learning in each scope; the end-of-scope CER allows teachers to assess student use and understanding of the Investigative Phenomenon in terms of understanding the three dimensions.
III. 3D callouts (see: an Explore lesson activity of any scope (e.g., 5th Grade, Ecosystems, Explore 1: Activity – Zoo Tour)	III. Specific callouts to the three dimensions can be found throughout Explore lesson activities to facilitate teacher explanation of the use of the DCIs, SEPS, and CCCs.
IV. Engineering Solution (see: an Explore Engineering Solution in scopes with ETS(s) (e.g., 5th Grade, Ecosystems, Engineering Solution: The Burmese Python Challenge)	IV. While not all scopes have an Engineering Solution, those that do (the scope's PE has an ETS(s) attached) integrate the engineering design process into the three dimensions so that it is not taught in isolation of the DCIs, SEPs, and CCCs.

F3. Presence of Environmental Principles and Concepts (EP&Cs)

- instructional content that incorporates the California EP&Cs.
- opportunities for students to examine the interactions and interdependence of human societies and natural systems.
- opportunities for students to develop and/or implement solutions to real-world environmental problems

SUMMARY RESPONSE

California EP&Cs are incorporated into STEMscopes CA NGSS 3D Explore labs alongside the 3D callouts for the SEPs and CCCs. Each EP&C callout allows students to interact with and examine how humanity lives interdependently with natural systems. As students explore the investigative phenomena in each scope, the EP&C can be used to guide creative and critical student thinking in order to use three-dimensional understanding as well as environmentally-conscious design solutions to solve real-world problems.

What to Look at...	What to Observe...
I. EPC Alignment (see: Teacher Toolbox > 3D Supports > California Alignment Documents > Elementary Environmental Principles and Concepts Alignment for a list of the scopes that have EPC standards attached to them)	I. In the toolbox you can see all the scopes that are attached to Environmental Principles and Concepts.
II. Pacing Guides (see: Teacher Toolbox (Elementary or Secondary) > Pacing Guide)	II. STEMscopes CA NGSS 3D Pacing Guides show each EPC callout that is built in each Explore lab.
III. Three-Dimensional Focus (see: any scope with EPC alignment > Home > Standards Alignment)	III. The three-dimensional focus and EPC are explained in detail, including how they are used in the Explore lab.
IV. Disciplinary Core Idea Progression (see: any scope with EPC alignment > Home > Standards Alignment)	IV. The progression of the DCIs within a given scope can be seen in this document, highlighting the clear and logical sequence of DCIs across a segment's scopes.
V. EPC callouts (see: any scope with EPC alignment > Engage lesson activity elements)	V. These callouts support teachers in effective integration of the EPCs in order to help students explicitly understand their use and meaning when learning the standards.
VI. EEI Lessons (see: any scope with EPC alignment > Acceleration > Extensions > EEI Lesson Link	VI. STEMscopes reached an agreement to link the EEI lessons indicated in the CA Curriculum Framework within our scopes. These link teachers to free lessons provided by the state.

F4. Presence of Logical Sequence. Materials demonstrate appropriate sequencing of three dimensions when

- they include a targeted set of DCIs, SEPs, and CCCs within a sequence;
- the sequence is clear and logical across the DCIs;
- the sequence does not include distracting ideas; and
- the SEPs and CCCs are potentially sufficient and appropriate for students to figure out the phenomena or problems.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D adheres to the 2016 Science Framework for California Public Schools. Accordingly, our segments' structure, pacing, and order reflect those of the CA NGSS. Each segment is composed of 2-5 lessons, or scopes, that form a coherent sequence for studying and applying the segment's anchoring phenomena to real-world problems via the three dimensions. Scopes are scaffolded through the 5E + intervention and acceleration model to build on prior knowledge and increase in complexity/rigor over the course of the lesson. Lesson elements continuously refer back to the scope's investigative phenomenon in order to interweave meaningful use of the three dimensions. Distracting concepts are not presented in order to ensure that lesson activities are tightly aligned to the scope's three dimensions; however, elaboration activities (found in each scope's Elaborate) provide opportunities to expand students' understanding of the three dimensions across different learning modalities and content areas.

What to Look at...	What to Observe...
VII. Pacing Guides (see: Teacher Toolbox (Elementary or Secondary) > Pacing Guide)	VII. STEMscopes CA NGSS 3D Pacing Guides show each segment, its constituent scopes, and the PEs associated with each.
VIII. Three-Dimensional Focus (see: any scope > Home > Standards Alignment)	VIII. The three dimensions used in each scope to analyze, explain, and apply the investigative phenomenon to real-world problems are found here.
IX. Disciplinary Core Idea Progression (see: any scope > Home > Standards Alignment)	IX. The progression of the DCIs within a given scope can be seen in this document, highlighting the clear and logical sequence of DCIs across a segment's scopes.
X. SEP and CCC callouts (see: any scope > Engage lesson activity elements)	X. These callouts support teachers in effective integration of the SEPs and CCCs in order to help students explicitly understand their use and meaning in terms of addressing the scope's investigative phenomenon.

Student Work Rubric.

SW1. Phenomena/Problems. Materials provide phenomena/problems that

- engage students as directly as possible in authentic and relevant experiences.
- are matched to targeted learning goals across the three dimensions.
- can be figured out/solved using scientifically accurate understandings and abilities.
- make connections beyond and to their daily lives, including their homes, neighborhoods, communities, and/or cultures.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D phenomena are sourced used a variety of criteria, including relevant current events, student interest survey results, practicing teacher interviews, and ability to integrate with specific PEs / three-dimensional concepts. For example, in MS Earth & Space Segment 2: The History of Planet Earth, the anchoring phenomena (What clues can tell us about a planet's past and help us predict its future?) is supported by three investigative phenomena found in each of the segment's constituent scopes (e.g., How can the same species of fossil be found on different continents?). Through the scopes' 5E + intervention and acceleration lesson activities, students are able to three-dimensionally explore and comprehend the investigative phenomena through hands-on activities, connections to home and personal life, literacy, cross-content differentiation, and digital simulations/videos. Throughout these activities, students will explore daily phenomena to further their understanding of the investigative phenomena. This variety of activities both gives students choices in how they confront the issues presented in the phenomena and enables them to develop unique perspectives on how to answer it and how it applies to the central, anchoring phenomena. The facilitated approaches to addressing phenomena within STEMscopes CA NGSS 3D is fact-checked and validity-checked by content experts who hold PhDs in their fields, to ensure the use of scientifically accurate understandings and abilities. Throughout the program, students are consistently challenged to make connections to their daily lives.

What to Look at...	What to Observe...
I. Anchoring Phenomena (see: any segment > Home) A. Teacher Guide (see: Mission Log) B. Teacher Guide (see: Action Plan)	I. Anchoring Phenomena provide the backdrop and guidance for an entire segment's three-dimensional learning and are constantly referred back to through the use of the Mission Log and Action Plan. By this means, students have the opportunity to authentically apply 3D learnings to solving the anchoring phenomena as they explore each scope within the segment.
II. Investigative Phenomena (see: any scope > Home)	II. Investigative Phenomena support understanding of the anchoring phenomena by giving rise to three-dimensional learning experiences.
III. Daily Phenomena (see: any scope > Explores)	III. Daily Phenomena are found in each Explore activity and relate the investigative phenomena to students' daily lives with firsthand, hands-on exploration.
IV. Science Today (see: any scope > Elaborate > Science Today)	IV. Students interact with media (photo, video or article) provided by the Associated Press to further connect their learning to the world around them by seeing relevant real-world connections to the content they are learning.

SW2. Three-Dimensional Conceptual Framework. Materials include learning experiences that help students to build scientifically accurate understandings and abilities through opportunities for students to

- link prior knowledge to negotiated new understanding and abilities.
- use reasoning to connect grade-appropriate SEP, DCI, and CCC elements and EPCs
- ask and answer questions that link learning over time.
- negotiate new understandings and abilities by comparing their ideas, their peers' ideas, and ideas encountered in the learning experience(s).
- apply their understandings and abilities in a variety of ways.

SUMMARY RESPONSE

Using a holistic approach to three-dimensional instruction, STEMscopes CA NGSS 3D offers lesson materials that bring together all three dimensions in each activity. Use of the three dimensions is noted both explicitly and implicitly in the teacher facilitation points. This supports teachers by communicating the importance of each dimension in its use of students' understanding of the functions of phenomena. Thanks to a nested lesson design approach, STEMscopes CA NGSS 3D links learning over time using layered phenomena—anchoring, investigative, and daily phenomena—within a coherent lesson model (the 5E + intervention and acceleration). Students apply the three-dimensional understandings gleaned from exposure to each layer of phenomena and associated exploratory activities (from daily to the anchoring phenomena) in order to connect the DCIs, SEPs, and CCCs in a holistic real-world performance (the Action Plan and claim-evidence-reasoning assessment). Students are invited to further develop their three-dimensional understandings as they relate to each phenomenon through the Elaborate—a multimodal learning experience that bridges the content areas—portion of each scope. Along the way, teachers facilitate scientific discourse, sharing of ideas among peers, and infusion of personal experiences in order to negotiate new understandings and abilities. STEMscopes NGSS 3D was written to align the EP & Cs for each grade level as well.

What to Look at...	What to Observe...
I. Segment Teacher Guide (see: any segment > Teacher Guide)	I. The "top-level" is the Segment Teacher Guide that guides the three-dimensional learning and connections across the entire segment. Within this guide is the Action Plan (the student-developed "answer" to the anchoring phenomenon).
II. CCC and SEP Inventory of Skills (see: any segment > Home > CCC and SEP Inventory of Skills)	II. Teachers can monitor student development of the CCCs and SEPs using the rubric-based CCC and SEP Inventory of Skills to observe learning over time within a segment.
III. Elaborate activities (see: any scope > Elaborate)	III. Each scope's Elaborate activities enable students to apply understandings and abilities in a variety of ways, and exercise some choice over how the scope is approached. Teachers have access to literacy, math, digital simulations, career connections, and more here.
IV. Facilitation points – scientific discourse (see: any scope > Explore)	IV. Embedded facilitation points in Explore activities (introduce Daily Phenomena) help spark scientific discourse from teacher to student and student to student.
V. CER (see: any scope > Evaluate > Claim-Evidence-Reasoning)	V. Each scope culminates in a CER to evaluate student understanding of applying the three dimensions to the investigative phenomena. The teacher can use this data to ask and answer questions that connect learning over time (across the scope) and between scopes to relate new material to prior experiences and learning.

SW3. Prior Knowledge. Materials leverage students' prior knowledge and experiences to motivate student learning in ways that

- make visible students' prior knowledge and experiences related to the phenomena/problems and relevant SEPs, DCIs, and CCCs and EPCs.
- revisit students' early ideas to see how they have changed (or not) as they figure out phenomena/solve problems.
- make explicit links to new ideas and practices being developed by students.

SUMMARY RESPONSE

Linking prior knowledge to new material to catalyze student learning and spark engagement are central to STEMscopes CA NGSS 3D. Using a variety of lesson materials—the Mission Log, student journal, graphic organizer, and APK— makes this approach possible for veteran and new teachers alike. Serving as living documents, each of these lesson materials allows students to revisit prior ideas and see changes in their three-dimensional thinking over time, and supports student-to-student (as well as student-to-teacher) scientific discourse. Additionally, each document serves as a repository of knowledge to support student understanding of the phenomena presented in each scope (to solve the CER / investigative phenomena) and to develop their Action Plans (to solve the segment's anchoring phenomena).

What to Look at...	What to Observe...
I. APK (see: any scope > Engage > Accessing Prior Knowledge)	I. The APK helps teachers elicit students' background knowledge in order to both understand the starting point of three-dimensional learning and identify any preconceptions that can influence the understanding of the investigative phenomena.
II. Graphic Organizer (see: any scope > Engage > Graphic Organizer)	II. Acting as a visual for the three-dimensional learning in a scope, the graphic organizer is a key tool for connecting learning over time and applying the grade-relevant DCIs, SEPs, and CCCs to comprehend both the investigative and anchoring phenomena.
III. Student Journal (see: any scope > Explore)	III. Students complete their interactive student journals either digitally or physically throughout the course of the scaffolded Explore activities. The student journal serves as a log of student reasoning, interpretation of phenomena, and three-dimensional understanding, providing data and insights to build student understanding of the investigative phenomena.
IV. Teacher Facilitation Points (see: any scope > Explore)	IV. Embedded in the Explore activities, teacher facilitation points provide checks of understanding, explicit callouts to the three dimensions, and strategies to link learning over time. Embedded EP&C callouts also provide teachers insights into how lesson activities are sculpted to direct environmentally-conscious thinking as students devise solutions and uses for natural phenomena.
V. Mission Log (see: any segment > Teacher Guide > Mission Log)	V. The mission log is the quintessential tool to make explicit links to learning over time and enable students to see how their three-dimensional understandings have developed across a segment's scope. Students add to their mission long at the close of each scope in order to further their Action Plans to address the anchoring phenomena.

SW4. Metacognitive Abilities. Materials include learning experiences for students to

- set and monitor their learning in light of the targeted learning goals.
- consider, over time, what and how they have learned across the three dimensions.
- articulate how the three dimensions helped them figure out phenomena/solve problems.

SUMMARY RESPONSE

Throughout STEMscopes CA NGSS 3D, students have opportunities to self-monitor their learning against targeted learning goals. Several of these serve as longitudinal metacognitive tools, amassing what students have learned over time so that they can see evidence of personal growth and the greater depth of their understanding of the three dimensions. Thanks to teacher facilitation points and embedded scientific discourse resources, students can communicate both orally and in writing how the three dimensions have helped them understand phenomena and create solutions to real-world problems.

What to Look at...	What to Observe...
I. Mission Log (see: any segment > Teacher Guide > Mission Log)	I. Students use the Mission Log over the course of each segment to amass the three-dimensional learnings they have drawn from exploring the investigative phenomena in each scope of the segment. The Mission Log then serves to help students make sense of the anchoring phenomenon and create a solution to the real-world problem it presents.
II. Student Journal (see: any scope > Explore)	II. The student journal is an ongoing interactive journal that students complete as they explore each daily phenomenon through a scope's Explore activities.
III. Graphic Organizer (see: any scope > Engage > Graphic Organizer)	III. The graphic organizer, like the Mission Log, helps collect all of a scope's learnings in one place in order to help students understand the scope's investigative phenomena and address the CER.
IV. Concept Review Game (see: Explain > Concept Review Game)	IV. Students can self-assess their understanding of three-dimensional concepts, vocabulary, and application of the DCIs, SEPS, and CCCs.
V. Communicate Science (see: Explain > Communicate Science)	V. Communicate Science is a scientific discourse activity where students use written, oral, visual, and debate presentation skills to spark discussion with peers about the scope's three-dimensional learnings.
VI. CER (and Evaluate Assessments) (see: Evaluate)	VI. The Claim-Evidence-Reasoning assessment brings together all the three-dimensional learnings of a scope in a rigorous evaluation that asks students to self-reflect (using the Student Journal and Graphic Organizer) on a real-world scenario. When used to catalyze student discourse, it not only aids in metacognitive ability development but also in learning from peer interpretation and use of the three dimensions across the scope.

SW5. Equitable Learning Opportunities. Materials ensure that all students, including those from nondominant groups and with diverse learning needs, have access to the targeted learning goals and experiences, including

- appropriate reading, writing, listening, and/or speaking alternatives for students who are English language learners, have special needs, read below the grade level, or have high interest and have already met the intended learning goals.
- culturally relevant contexts and examples or supports that help students connect to the context or examples.
- opportunities to cultivate interest and confidence as scientists and engineers.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D contains a wide variety of teaching support tools, leveled math and literacy activities, intervention and acceleration resources, Spanish translations, and technology features to support diverse students and learning styles. Using the constructivist 5E + intervention and acceleration model, the pedagogical design of STEMscopes CA NGSS 3D's itself supports cultivation of student interest and confidence by sparking engagement through inquiry and hands-on investigation while gradually releasing teacher control over the lesson cycle and promoting student learning ownership. Additionally, each scope features a diverse STEM leader whose work/study exemplifies the three-dimensional learning of that scope in order to inspire students. Teachers have access to extensive facilitation and STEM best practice supports (e.g., supporting students in foster care) that help both new and veteran teachers adapt learning goals and materials to students' diverse needs.

What to Look at...	What to Observe...
I. Language Acquisition Strategies (see: scopes tab > Teacher Toolbox: Secondary > Language Acquisition Strategies)	I. Discover STEM best practices for language learning, listening, speaking, and reading.
II. Literacy tools (see: Language Acquisition Strategies (scopes tab > Teacher Toolbox: Elementary/Secondary > LIteracy)	II. From vocabulary cards to literacy instruction support guides, literacy tools include teaching materials to support ELLs throughout instruction.
III. Embedded ELD supports (see: any scope > Explore)	III. Throughout each Explore's teacher facilitation points, teachers can find "just-in-time" ELD-based mini-activities to support ELLs.
IV. Embedded Interventions (see: any scope > Explore)	IV. Embedded intervention strategies in Explore teacher facilitation points aid educators in communicating the content and making it more accessible to struggling learners.
V. Scientist Spotlight (see: any scope > Elaborate > Scientist Spotlight)	V. Scientist Spotlight uses diverse scientists and engineers from across the globe to inspire students and help them envision themselves in future STEM careers.
VI. Leveled Reading (K-8) and Math Connections (K-5) (see: any scope > Elaborate > Math Connections & Reading Science)	VI. These tools are select math and reading differentiation activities that support 3D instruction while challenging students at their own level.
VII. Intervention (see: any scope > Intervention)	VII. The standalone Intervention module can be used at any time after Engage or Explore to help struggling learners in a Tier 3 setting.
VIII. Acceleration (see: any scope > Acceleration)	VIII. Acceleration, like Intervention, is a standalone module to help advanced learners push their three-dimensional learning even further.
IX. Annotation Features (see: embedded in all online lesson elements)	**IX.** All student digital materials can be annotated (text changes, interactive highlighting, dictionary access, and note taking) to support comprehension and dialogue with the teacher and/or peers.

Monitoring Student Progress.

SP1. Monitoring Three-Dimensional Learning and EP&Cs If Applicable. Assessments are designed to

- Ensure that students use SEPs integrated with DCIs and CCCs to demonstrate their understanding of phenomena and/or design solutions to problems.
- Connect students' learning experiences to the targeted learning goals.
- Elicit observable evidence of student knowledge of and ability to use grade-level appropriate elements of the three dimensions.
- Ensure that students use EP&Cs where applicable to demonstrate their understanding of environmental phenomenon/problem solution.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D contains numerous formative and summative assessments to elicit observable evidence of students' use of the three dimensions. Written with the Evidence Statements, completion of each STEMscopes CA NGSS 3D Explore activity is the principal way a teacher can formatively assess student performance with the aim of evaluating grade level appropriate application and understanding of the DCIs, SEPS, and CCCs. The two principal summative assessments used to evaluate 3D learning are the CER (within each scope) and CAST-style interactive assessment (taken at the end of each segment). Both of these performance-based assessments provide a clear and holistic view of a student's comprehension and use of the three dimensions. Segments also contain an additional summative assessment in the form of the Action Plan that students complete at the end of all of the segment's scopes in order to solve the anchoring phenomena. Each of these can be used to inform the rubric-based skills inventory of CCC and SEPs in order to evaluate student growth over time.

What to Look at...	**What to Observe...**
I. Student Journal (formative) (see: any scope > Explore)	I. The student journal is an ongoing formative assessment that is ideal for seeing how students navigate the three dimensions and use them to comprehend daily phenomena.
II. CER (summative) (see: any scope > Evaluate > Claim-Evidence-Reasoning)	II. At the close of each scope, the CER evaluates a student's three-dimensional application and understanding of the scope's investigative phenomena.
III. 3D Interactive Assessment (summative) (see: any segment (3-12) > Assessment > 3D Interactive Assessment)	III. These CAST-style assessments use interactive videos, drag-and-drop widgets, fill-in-the-blank, and virtual labs to prepare students for the 3D demands of the CAST.
IV. Action Plan (summative) (see: any segment > Teacher Guide > Action Plan)	IV. The Action Plan is the culmination of an entire segment's 3D learning. Collecting all the three-dimensional learnings across the segment's constituent scopes, it's the ultimate hands-on, performance-based, longitudinal assessment to document and evaluate observable evidence of students' use of grade-appropriate elements of the three dimensions to make sense of and design solutions for the anchoring phenomena.

SP3. Variety of Measures. Assessments within a unit of instruction are matched to the targeted learning goals and elicit a full range of student thinking through

● use of a variety of measures (e.g., performance tasks, discussion questions, constructed response questions, project- or problem-based tasks, portfolios, justified multiple choice), and

● multiple assessment opportunities so that students can demonstrate their understanding of the same learning goals in a variety of ways.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D possesses a wide variety of measures at both the segment level and the scope level. Designed so that teachers can elect to use assessments based on student strengths to demonstrate content and skill knowledge, STEMscopes CA NGSS 3D assessments include the following: rubric-based performance tasks, CAST-style interactive simulation, video-based assessments, multiple choice quizzes, expository writing, claim-evidence-reasoning, reading/visual interpretation and reaction evaluations, game-based measures, cross-content evaluation, and problem-based tasks. Assessments can be modified using Google Drive integration and assigned over and over in order to provide students multiple opportunities to show growth toward learning goals. Meanwhile, the wide variety of assessment types allows teachers to holistically assess student mastery of the three dimensions from multiple angles over time.

What to Look at...

I. 3D Interactive Assessment (summative) (see: any segment (3-12) > Assessment > 3D Interactive Assessment)

II. Action Plan (summative) (see: any segment > Teacher Guide > Action Plan)

III. Scope Measure Variety (see: any scope > Engage, Explore, Explain, Elaborate, Evaluate, Intervention, and Acceleration)

IV. Grade Level Pre and Post Assessments (see: Assessments > Assign Assessment from Package > any grade level pre or post assessment

What to Observe...

I. These CAST-style assessments use interactive videos, drag-and-drop widgets, fill-in-the-blank, and virtual labs to prepare students for the 3D demands of the CAST.

II. The Action Plan is the culmination of an entire segment's 3D learning. Collecting all the three-dimensional learnings across the segment's constituent scopes, it's the ultimate hands-on, performance-based, longitudinal assessment to document and evaluate observable evidence of students' use of grade-appropriate elements of the three dimensions to make sense of and design solutions for the anchoring phenomena.

III. Each section of STEMscopes CA NGSS 3D scopes contains an assessment. Each type is enumerated below with its corresponding instructional element's name:

A. Accessing Prior Knowledge: performance task
B. Explore Student Journal: performance task
C. Linking Literacy: reading interpretation and reaction evaluation
D. STEMscopedia: reading interpretation and reaction evaluations & multiple choice
E. Communicate Science: performance task
F. Concept Review Game: game-based measure
G. Content Connection Video: visual interpretation and reaction evaluation
H. Math Connections (levelled): cross-content evaluation
I. Reading Connection (levelled): cross-content evaluation
J. Science Today: visual interpretation and reaction evaluation
K. CER: performance task
L. Open-ended response: expository writing
M. Multiple Choice Assessment: multiple choice assessment
N. Concept Attainment Quiz: multiple choice, fill-in-the-blank, and expository writing
O. Science Art: performance task

IV. Each grade level has a pre and post grade level test to track student progress on PEs, CCCs, and SEPs. These can be administered online and data can be analyzed, all within STEMscopes.

SP2. Student Progress Over Time. The unit of instruction includes assessments that serve a variety of purposes (e.g., pre/post, formative, summative, peer, self) to measure students' progress over time. The assessments

- provide opportunities to see growth and development in the use of the dimensions over time, and
- allow students to reflect on and monitor their sensemaking/problem solving over time.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D has a wide variety of assessment types, ranging from formative to summative, informal to formal, standards-based to rubric-based, pen-and-paper to digital. While not all assessment types should be used in a given scope, all assessment types can be used across an entire segment. Students have opportunities to retake assessments at any time thanks to digital assignability; teachers can also interface with students with comments on digitally submitted assessments. A robust assessment bank is also included to create personalized assessments for any need, such as BoY diagnostics, extra credit, or retake opportunities. STEMscopes CA NGSS 3D's grading and feedback systems enable teachers to provide prompt teacher-to-student support on any graded activity.

What to Look at...

I. Formal, Formative Assessments
   A. APK (see: any scope > Engage > Accessing Prior Knowledge)
   B. Concept Review Game (see: any scope > Explain > Concept Review Game)
   C. STEMscopedia comprehension questions (see: any scope > Explain > STEMscopedia)
   D. Math Connections (see: any scope > Elaborate > Math Connections)
   E. Reading Connections (see: any scope > Elaborate > Reading Connections)
   F. Science Today! Questions (see: any scope > Elaborate > Science Today!)
   G. Independent Practice (see: any scope > Intervention > Independent Practice)

II. Informal, Formative Assessments
   A. Teacher Facilitation Points Checks for Understanding (see: any scope > Explore)
   B. Student Journal (see: any scope > Explore)
   C. Annotation Features (see: any on-screen, digital text)

III. Formal, Summative Assessment
   A. CER (see: any scope > Evaluate > Claim-Evidence-Reasoning)
   B. OER (see: any scope > Evaluate > Open-Ended Response Assessment)
   C. Multiple Choice Assessment (see: any scope > Evaluate > Multiple Choice Assessment)
   D. Concept Attainment Quiz (see: any scope > Intervention > Concept Attainment Quiz)
   E. Interactive Assessment (see: any segment (3-12) > Assessment > 3D Interactive Assessment)
   F. Action Plan (see: any segment > Teacher Guide > Action Plan)

IV. CCC and SEP Scoring Rubrics (see: any segment or scope > Home > CCC and SEP Scoring Rubric)

What to Observe...

I. Formative assessments are designed to adapt instruction to meet students where they are, over the course of a lesson. STEMscopes CA NGSS 3D offers numerous forms of formative assessments to assess student understanding of the three dimensions throughout a scope.

II. Informal formative assessments differ from formal ones in that they are not explicitly graded; rather, these lesson elements can be used to document student misconceptions through discourse, performance, and interaction with the text in a stress-free setting.

III. Formal summative assessments are given at the end of a scope or segment to capture student growth across the scope/segment in terms of 3D learning and application. These assessments directly pertain to students' ability to negotiate the DCIs, SEPs, and CCCs in light of investigative and anchoring phenomena.

IV. Rubrics and Inventory of Skills sheets are provided for teachers to track the SEPs and CCCs throughout the bundle and year. While students interact with these concepts frequently during a scope, teachers are prompted with examples of situations when they could get good evidence of student performance.

SP4. Equitable Access. Assessments within the unit of instruction are designed to

- be free from bias (e.g., gender, racial, socioeconomic status, cultural) and
- be accessible to all students (e.g., reading level, accommodations).

SUMMARY RESPONSE

STEMscopes CA NGSS 3D ensures that no bias—gender, racial, socioeconomic, and/or cultural—is evidenced in assessments through review via focus group, soliciting crowdsourced teacher feedback, and extensive third-party content review via Rice University. Assessments are written to match grade level standards using Lexile Levels; in addition, embedded accommodations features (e.g., text size increase/decrease, high contrast screen color view mode, text-to-speech, digital dictionary access, annotations, highlighting, and editability via Google Classroom integration) are available throughout.

What to Look at...	What to Observe...
I. California Social Content Adoption Review	I. Our product was approved by the state of California and has been reviewed extensively for bias.
II. Accessibility Settings: (see: Account (top right username when logged in) > Settings)	II. Accessibility settings give students and teachers the ability to make global changes to font size, color contrast modes, text-to-speech speaking rate, and highlighting of text during text-to-speech.
III. Accessibility Features (see: any digital scope element (e.g., a Student Explore activity)	III. Accessibility features are located at the top of any digital lesson element. Digital tools enable changing text size, activating text-to-speech, using an embedded digital dictionary, highlighting text, adding annotations, and using digital tools to interact with on-screen elements (e.g., drawing, shapes, and writing).

SP5. Unit of Assessment. The materials provide self- or peer-assessments that allow students to reflect on and monitor their learning over time.

SUMMARY RESPONSE
STEMscopes CA NGSS 3D allows students to complete self- or peer-assessments in the Explain and Elaborate Tabs.

What to Look at...	**What to Observe...**
IV. Concept Review Game: (Explain)	IV. Students can take an interactive quiz and will see their grade immediately
V. Communicate Science: (Explain)	**V.** Students will be able to learn from each other by answering a driving question in a different form of speech, i.e. descriptive, informative, persuasive, debate, Socratic dialogue

Teacher Support.

TS1. Phenomenon-/Problem-Driven Three-Dimensional Learning. Teacher materials provide

• background information about the phenomena or problems included in the learning sequence and across sequences.
• an explanation of the role of phenomena or problems in driving student learning.
• rationale for why the unit phenomena or problems were selected for the targeted DCIs, SEPs, and CCC and EP&Cs.

Evidence found in F1, F2, SW1, SW2, SP1.

SUMMARY RESPONSE
STEMscopes CA NGSS 3D includes extensive teacher materials that dive into the background information of a scope's phenomena. The Teacher Guide at the segment level provides in-depth information about how the various phenomena in each segment's scope coherently connect and how they apply to solving the anchoring phenomenon via the Action Plan.

What to Look at...	What to Observe...
I. Grade Level Front Matter (see: Teacher Resources and Planning Guide Scope in any grade level > Lesson Planning Guide)	I. Teachers are walked through the intention of each segment and scope via the Front Matter for each grade level.
II. Teacher Background (see: any scope > Teacher Background)	II. The Teacher Background provides explanatory text, descriptive images, and diagrams to fully explore the nature of the scope's given phenomena. This can be used to communicate the three dimensions to the students while ensuring factually correct scientific content.
III. Teacher Guide (see; any segment > Teacher Guide)	III. Within a segment, Teacher Guides serve to explain how the anchoring phenomenon is explored via the Action Plan across the segment's scopes. Complete with embedded exemplar answers, questioning, and facilitation points, teachers can use this document to understand the rationale for selecting the anchoring phenomena for the targeted DCIs, SEPS, and CCCs.

TS2. Coherence. Teacher materials describe and provide a rationale for

- the conceptual framework and sequence of ideas, practices, and learning experiences in the learning sequences and across sequences.
- strategies for linking student experiences across lessons to ensure student sensemaking and/or problem-solving focused on phenomena or problems linked to learning across all three dimensions.
- connections to other science domains, nature of science, engineering, technology, and applications of science, math, and English language arts and EPCs (when applicable).

Evidence found in F2, F3, F4, SW2, SP2.

SUMMARY RESPONSE

Coherence in STEMscopes CA NGSS 3D is supported through the use of layered phenomena—anchoring, investigative, and daily phenomena—wrapped into the 5E + intervention and acceleration instructional model. This constructivist learning approach empowers student sense-making of the three-dimensions as control is gradually released from teacher-centered instruction to student-centered instruction. Across the scopes within a segment, students use their 3D learning to steadily develop their Action Plans, which ultimately address the anchoring phenomenon that overarches the entire segment. Throughout each scope, teachers have the opportunity to make connections across learning domains using engineering challenges, art enrichment activities, leveled reading, leveled math, technology/data literacy development, and speech/debate.

What to Look at...

I. Grade Level Resources and Planning Guides (see: Teacher Resources and Planning Guide Scope in any grade level > Lesson Planning Guide)

II. Action Plan & Teacher Guide (see: any segment > Teacher Guide > Teacher Guide & Action Plan)

III. Connections across the content areas
   - A. TUVA Data Literacy (see: select scopes (e.g., 7th Grade Integrate > Structure of Matter scope > Explore > Explore 4: TUVA – Attributes of Elements)
   - B. Engineering Solution (see: select scopes (e.g., 7th Grade Integrate > Modeling Conservation of Mass scope > Explore > Explore 3: Engineering Solution – Speed Reactions)
   - C. Communicate Science (see: any scope > Explain > Communicate Science)
   - D. Levelled Math and Reading (see: any scope > Elaborate > Math Connections & Reading Connections)
   - E. Science Art (see: any scope > Accelerate > Science Art)
   - F. Explore labs (see: Scopes with EPC standards)

What to Observe...

I. The Lesson Planning Guides walk teachers through the intention and planning behind each segment and scope.

II. The Action Plan is the culmination of an entire segment's 3D learning. Collecting all the three-dimensional learnings across the segment's constituent scopes, it's the ultimate hands-on, performance-based, longitudinal assessment to document and evaluate observable evidence of students' use of grade-appropriate elements of the three dimensions to make sense of and design solutions for the anchoring phenomena. The Teacher Guide provides the facilitation and exemplar student responses for the Mission Log. Together, these provide coherence across the scope's segments by connecting the three-dimensional learning throughout the segment.

III. Cross-curricular connection activities can be found throughout a STEMsccopes CA NGSS 3D scope. Ranging from reading on current events to debate and presentation to data literacy simulations, there are numerous opportunities with each investigative phenomena to explore the three dimensions through unique connections to other content areas. The scopes with EPCs have embedded questions and activities that embed the EPCs within the hands-on lab.

TS3. Effective Teaching. Teacher materials support the use of and provide a rationale and evidence of effectiveness for strategies that

- support students in learning through authentic and meaningful phenomena or design problems.
- support student learning across the three dimensions.
- make student thinking visible; promote reasoning, sensemaking, and problem-solving; challenge student thinking; and develop metacognitive abilities.

Evidence found in SW1, SW2, SW3, SW4, SP3.

SUMMARY RESPONSE

Teacher materials in STEMscopes CA NGSS 3D are designed to support authentic and meaningful student engagement and interaction with diverse phenomena. Teacher elements in STEMscopes CA NGSS 3D are denoted with a red "T," as opposed to student elements that are marked with a blue "S." In general, teacher elements provide support via facilitation points, intervention strategies, STEM instructional best practices, exemplar student responses, alignment information to the three dimensions, and background knowledge/setup videos. Through these elements, teachers have myriad ways to promote student reasoning, tangible problem solving, questioning of the natural world, and development of metacognitive abilities.

What to Look at...	What to Observe...
I. Segment Anchoring Phenomena Event and Driving Question (see: any segment > Anchoring Phenomena Event)	I. Found in each segment, the teacher facilitation in the Anchoring Phenomena Event helps teachers develop questioning strategies as they move students toward the Driving Question of the segment.
II. Segment Teacher Guide (see: any segment > Teacher Guide)	II. Found in each segment, the Teacher Guide provides an overview of how the student will ultimately approach the anchoring phenomenon and construct an Action Plan to make sense of the three-dimensional learning across the segment's scopes.
III. Teacher Background (see: any scope > Home > Teacher Background)	III. The Teacher Background provides in-depth readings, images, and diagrams that explain the nature of the three dimensions and investigative phenomenon in each scope.
IV. Standards Alignments (see: any scope > Home > Standards Alignment)	IV. Teachers can use the Standards Alignments to understand the interplay of the DCIs, SEPs, and CCCs in each scope; additionally, use of the Evidence Statements is explained to support visible evidence of student learning.
V. Teacher facilitation points (see: any scope > Explore)	V. Supporting each hands-on investigation are extensive Teacher Facilitation points that highlight potential student misconceptions, questioning, alignment to the three dimensions, and potential student responses. Use these to guide inquiry and challenge student thinking as they explore phenomena.
VI. Setup video (see: any scope > Explore)	VI. The Setup Video is specifically made to support the teacher in conducting hands-on investigations. Watching these videos provides background and understanding of how best to have students engage with phenomena in order to facilitate sensemaking, reasoning, and problem-solving.
VII. Embedded Intervention Supports (see: any scope > Explore)	VII. At the bottom of the facilitation points, unique Intervention Supports are provided to help special populations, make math connections, and facilitate language acquisition for ELDs.

TS4. Support for Students with Diverse Learning Needs. Teacher materials provide an array of strategies

- to support student access to the targeted learning goals, experiences, and performances.
- that help teachers differentiate instruction.

Evidence in SW5, SP4.

SUMMARY RESPONSE

With Spanish materials in K-8, a dedicated intervention/acceleration module in each lesson, embedded intervention supports, and digital accessibility features, STEMscopes CA NGSS 3D is well equipped to support students with diverse learning needs. Lessons use a blended learning approach (hands-on, digital, and literacy) to ensure a wide array of learning/teaching strategies to reach targeted learning goals. Select from numerous differentiation activities in each lesson's Elaborate section to support the diverse learning needs of your students. The teacher can find additional support for instructional strategies, development of scientific inquiry skills, and classroom organization tools in the Teacher Toolbox.

What to Look at...	**What to Observe...**
I. Embedded Intervention Supports (see: any scope > Explore)	I. At the bottom of the facilitation points, unique Intervention Supports that help special populations, make math connections, and facilitate language acquisition for ELDs are provided.
II. Intervention lesson elements (see: any scope > Intervention)	II. Support struggling learners with Tier 3 instructional resources that can be used at any time throughout the 5E lesson cycle.
III. Acceleration lesson elements (see: any scope > Acceleration)	III. Push advanced students beyond the PE and three dimensions with enrichment activities to promote creative and critical thinking.
IV. Differentiation lesson elements (see: any scope > Elaborate)	IV. Cater to each student's strengths, interests, and needs with diverse Elaborate activities.

TS5. Support to Monitor Student Progress. Materials provide support for teachers to

- monitor student learning and progress over time.
- make decisions about instruction and provide feedback to students.

Refer to SW3, SW4, SP1, SP2, SP3.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D has numerous formative and summative assessments designed to monitor student learning over time. The teacher can aggregate data for analysis, flexible grouping, and feedback using the in-house grade book. The data provided enables teachers to effectively use the 5E + intervention and acceleration lesson model by highlighting where students have conceptual errors requiring additional hands-on learning opportunities or differentiated learning experiences. Additionally, STEMscopes CA NGSS 3D student progress data can show growth over time across the three dimensions.

What to Look at...	What to Observe...
I. Formal, Formative Assessments (e.g., APK (see: any scope > Engage > Accessing Prior Knowledge))	I. Formal, formative assessments are ideal diagnostic tools going into a lesson. Use these to calibrate the lesson flow, select lesson materials throughout the 5E + intervention and acceleration lesson flow, and support three-dimensional instruction.
II. Informal, Formative Assessments (e.g., Teacher Facilitation Points Checks for Understanding (see: any scope > Explore))	II. Informal formative assessments can be used to monitor student learning throughout the learning cycle in order to adjust instruction and clarify misconceptions.
III. Formal, Summative Assessment (e.g., CER) (see: any scope > Evaluate > Claim-Evidence-Reasoning)	III. Formal summative assessments allow teachers to evaluate students' three-dimensional learning and provide feedback that encourages further growth and understanding.
IV. Growth-based Assessment (e.g., 3D growth rubrics) (see: any scope > Home > CC and SEP Scoring Rubric)	IV. Growth-based assessments allow teachers to see student longitudinal development in order to understand 3D learning areas where they are strong and areas they need to focus on as they progress over a year.
V. Assignment feedback/scoring (see: top navigation > students > assignments)	V. Teachers can aggregate and analyze formal assessment data here, while providing feedback in a student-friendly portal.
VI. Grade Level Pre and Posts Assessments (see: Assessments > Assign Assessment from Package > any grade level pre or post assessment	VI. Each grade level has a pre and post grade level test to track student progress on PEs, CCCs, and SEPs. These can be administered online and data can be analyzed for student growth, all within STEMscopes.

Program Evaluation Rubric.

PE1. Progressions of Learning. Within a program, learning experiences are more likely to help students develop a greater sophistication of understanding of the elements of SEPs, CCCs, and DCIs, and EP&Cs (when applicable) when teacher materials:

- make it clear how each of the three dimensions builds logically and progressively over the course of the program and make clear how students engage in the science and engineering practices with increasing grade-level appropriate complexity over the course of the program.
- utilize the crosscutting concepts with increasing grade-level appropriate complexity over the course of the program.
- engage in grade-level/band appropriate disciplinary core ideas.
- make clear how the performance expectations are addressed in the program.
- provide a rationale for a logical sequence/treatment of Engineering, EP&Cs, and the Nature of Science (NoS).

SUMMARY RESPONSE

Teachers can draw clear connections between the three dimensions and EP&Cs (as well as Engineering and NoS, as dictated by each PE) over the course of a scope, segment, and grade level in STEMscopes CA NGSS 3D. Thanks to callouts for all four of these elements as well as learning progression rubrics, teachers can evaluate student use and growth in each of the three dimensions as they logically/progressively unfold. Use of the SEPs, CCCs, and DCIs in each scope is designed to elicit grade-level appropriate three-dimensional thinking, discourse, and application of phenomena to real-world problems. Written with the Evidence Statements, STEMscopes CA NGSS 3D bring clarity to the use and significance of the performance expectations; this type of granular alignment signifies that STEMscopes lesson elements are designed to prompt students to show clear evidence of learning for all the constituent elements (evidence statements) of the performance expectation.

What to Look at...	**What to Observe...**
I. CCC and SEP Inventory of Skills (see: any segment > Home > CCC and SEP Inventory of Skills)	I. Teachers can monitor student development of the CCCs and SEPs using the rubric-based CCC and SEP Inventory of Skills to observe learning over time within a segment.
II. 3D and EP&C callouts (see: an Explore lesson activity of any scope (e.g., 5th Grade, Ecosystems, Explore 1: Activity – Zoo Tour)	II. 3D and CCC callouts support teachers in effective integration of the SEPs and CCCs in order to help students explicitly understand their use and meaning when addressing the scope's investigative phenomenon. EP&C callouts are included as well, when appropriate.
III. Granular Alignment to Evidence Statements to support Performance Expectations (see: any scope > Home > Standards Alignments)	III. Evidence statements are the constituent elements of the PE, used to provide visible evidence of student learning. Use of the evidence statements in lesson materials as well as grade band endpoints to support logical flow from one lesson to the next and grade-level appropriate content is highlighted here.
IV. 3D flow map (see: [download link, Jeremy will need to host the content offer at https://info.stemscopes.com/ngss3d-scope-alignment-map)	IV. This graphic illustrates a logical flow and grade-level lesson coherence for use of the three dimensions across scopes.

PE2. Unit-to-Unit Coherence. Units across a program demonstrate coherence when student materials

- are designed with an appropriate sequence and development of DCIs, CCCs, and SEPs to support students in demonstrating learning across a program as they figure out phenomena/problems.
- make explicit connections from one unit to the next across the three dimensions to connect prior learning, current learning, and future learning as they figure out phenomena/problems.
- support students in making connections across units and disciplines by helping students negotiate more sophisticated understandings and abilities.

SUMMARY RESPONSE

STEMscopes CA NGSS 3D is coherent on multiple levels both within a unit and between units. Within a unit, STEMscopes CA NGSS 3D creates a logical lesson flow/design using the 5E lesson model to gradually shift instruction from teacher-led to student-led, from demonstrative to exploratory/inquiry, and from group-based to independent. Lessons amplify their coherence further by tying the use of both everyday and investigative phenomena to the unit (segment) anchoring phenomena. This is accomplished through sequential hands-on and digital Explore activities that gradually increase a student's understanding of the three dimensions so they may negotiate increasingly sophisticated understandings and applications of phenomena. Collectively, multiple lessons form a single unit; these lessons refer back to one another in order to inform the three dimensional understandings needed to address the anchoring phenomena.

What to Look at...	**What to Observe...**
I. Pacing Guides (see: teacher toolbox > resources > pacing guide)	I. Pacing guides provide insights into how the various scopes (units) in a segment coherently interconnect to support three-dimensional understanding and application of the anchoring phenomena.
II. CCC and SEP Inventory of Skills (see: any segment > Home > CCC and SEP Inventory of Skills)	II. The inventory of skills growth rubrics are ideal for evaluating how student understanding and use of the three dimensions have progressed over the units in a segment and if they are meeting grade-level appropriate expectations.
III. Mission Log and Action Plan (see: any segment > Teacher Guide > Mission Log and Action Plan)	III. Units (scopes) are connected within the Mission Log and Action Plan that combines the three dimensional understanding of all lesson activities into a culminating real-world performance. Students progressively will add to this document across their experiences in each unit in order to negotiate increasingly more sophisticated understandings and abilities with respect to use and application of the anchoring phenomena.

PE3. Program Assessment System. Over the course of the program, teacher materials demonstrate a system of assessments that

- coordinates the variety of ways student learning is monitored to provide information to students and teachers regarding student progress for all three dimensions of the standards and toward proficiency at the identified grade-level/band performance expectations.
- includes support for teachers and other leaders to make program-level decisions based on unit, interim, and/or year-long summative assessment data.
- is driven by an assessment framework and provides a structured conceptual map of student learning along with details of how achievement of the outcomes can be measured.

SUMMARY RESPONSE

Assessments in STEMscopes CA NGSS 3D are varied, sequential in nature, and designed to enable teachers to narrowly understand where a student's misconceptions in three dimensional learning lie. Using a combination of formative and summative assessments, teachers can efficiently adjust instruction to support all learners, differentiate based on student needs, and determine when students are ready to move forward in the lesson cycle. Growth-based assessments are included in STEMscopes CA NGSS 3D to evaluate student grade-level/band performance expectations use and application, both in terms of visible evidence of learning via the evidence statement's discrete tasks and use/applications of the three dimensions. In conjunction with the STEMscopes CA NGSS 3D analytics engine, this assessment framework provides a conceptual map of student achievement, progress toward use/understanding of the three dimensions, and a means by which to adjust instruction and/or flexibly group students for differentiated instruction.

What to Look at...

I. Formal, Formative Assessments (e.g., APK) (see: any scope > Engage > Accessing Prior Knowledge)

II. Informal, Formative Assessments (e.g., Teacher Facilitation Points Checks for Understanding) (see: any scope > Explore)

III. Formal, Summative Assessment (e.g., CER) (see: any scope > Evaluate > Claim-Evidence-Reasoning)

IV. Growth-based Assessment (e.g., 3D growth rubrics) (see: any scope > Home > CCC and SEP Scoring Rubric)

V. Performance-based Assessment (e.g., Action Plan) (see: any segment > Teacher Guide > Action Plan)

VI. Assignment feedback/scoring (see: top navigation > students > assignments)

VII. Segment Assessments (see: any segment > Segment Assessment)

VIII. Grade Level Pre and Posts Assessments (see: Assessments > Assign Assessment from Package > any grade level pre or post assessment)

What to Observe...

I. Formal, formative assessments are ideal diagnostic tools going into a lesson. Use these to calibrate the lesson flow, select lesson materials throughout the 5E + intervention and acceleration lesson flow, and support three-dimensional instruction.

II. Informal formative assessments can be used to monitor student learning throughout the learning cycle in order to adjust instruction and clarify misconceptions.

III. Formal summative assessments allow teachers to evaluate students' three-dimensional learning and provide feedback that encourages further growth and understanding.

IV. Growth-based assessments allow teachers to see student longitudinal development in order to understand 3D learning areas where they are strong and areas they need to focus on as they progress over a year.

V. The Action Plan is a real-world application of the anchoring phenomena in a performance-based task. This assessment ties together all the three-dimensional understanding and abilities acquired through the exploration of phenomena in the segment's constituent scopes.

VI. Teachers can aggregate and analyze formal assessment data here, while providing feedback in a student-friendly portal.

VII. Students are assessed via a clustered item interactive assessment for all PEs within a segment. These are CAST-style interactive assessment types.

VIII. Each grade level has a pre and post grade level test to track student progress on PEs, CCCs, and SEPs. These can be administered online and data can be analyzed, all within STEMscopes.