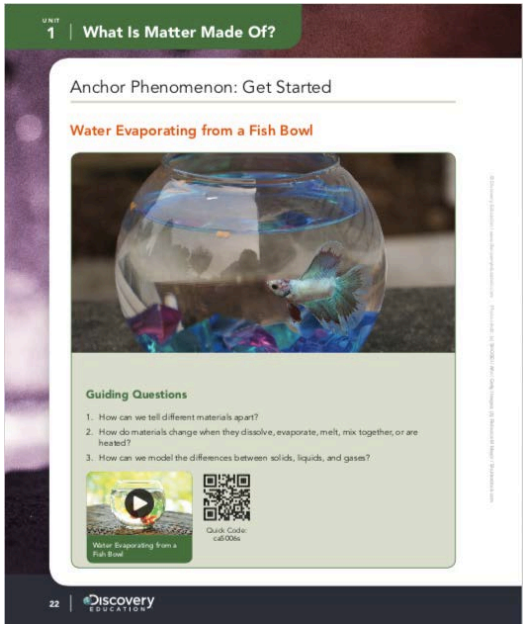
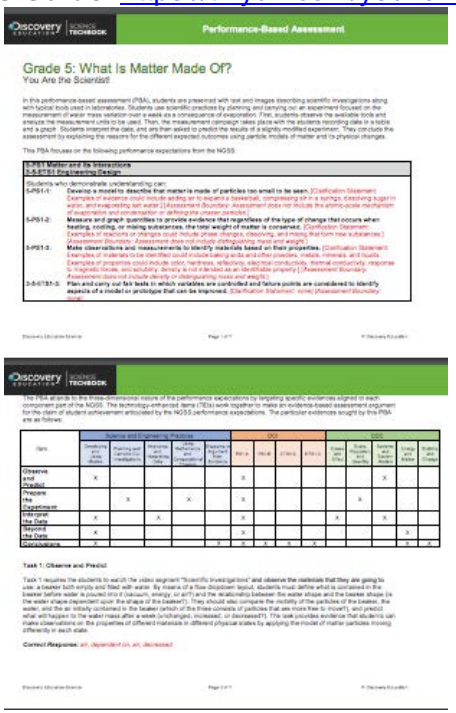
Designed for CA NGSS: Foundations

Component	Strengths	Citations
F1. Presence of Phenomena / Problems.	**The materials include phenomena/problems:** • **that have the potential to drive student learning.** • **have the potential to relate across the dimensions.** **Unit Pages**: The Unit Page provides teachers and students direct access to Anchor Phenomena for the unit, as well as Investigative Phenomena for each concept found within the unit. The Unit pages are available both in print and digital, and include additional support for teachers, in the Teacher Guide, on how to launch the anchor phenomenon with students. The anchor phenomenon provides students with real-world instances of phenomena, which serve as the context for the unit project. Students communicate their initial ideas related to the unit project, before engaging with the investigative phenomena in each concept. Investigative phenomena are carefully selected to elicit student scientific questions. As students move through the learning progression, students apply three-dimensional thinking to communicate their ideas about both the anchor phenomenon and each investigative phenomenon, with the intent of constructing explanations to their own questions.	**Grade 5: Unit 1: What Is Matter Made Of?** **Unit Page: Anchor Phenomenon** **Print:** TE Pages: Anchor Phenomenon Launch: p. 22 SE Pages: Anchor Phenomenon: p. 2-3 **Digital:** Enter Quick Code: ca5006s 

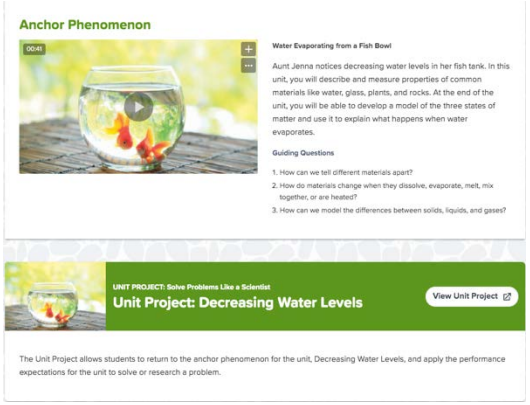
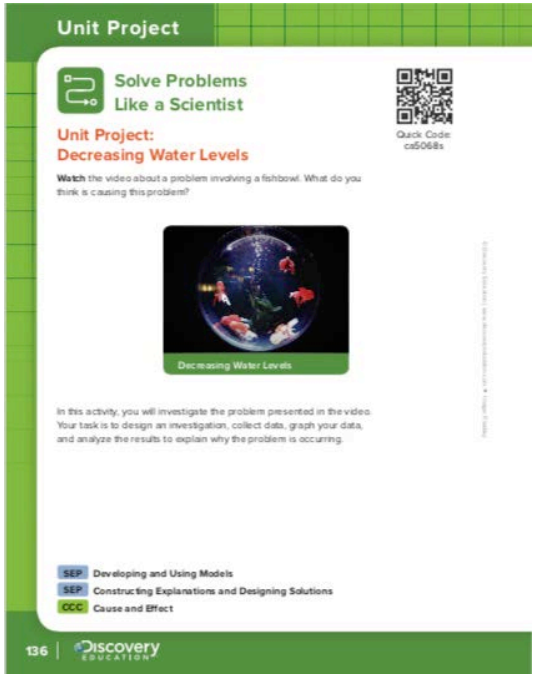
Component	Strengths	Citations
F1. Presence of Phenomena / Problems.	**Examples** **Grade 5 Unit 1** **Unit Level Alignment**: In this unit, students explore the nature of matter. They begin by thinking about real-world examples, such as water decreasing in a fish bowl over time and temperature loss in a cup of hot chocolate. Students start to describe the properties of matter using words and measurements. Throughout the unit, they explore changes to matter when adding thermal energy and describe the physical changes that occur. Students view videos, images, and simulations, and conduct hands-on investigations. They analyze models and develop their own model of matter. At the conclusion of the unit, the student return to the question of water loss in a fish bowl and conduct an investigation to study how water volume in the bowl is lost. **Investigative Phenomenon Examples**: 5th Grade: Unit 1 Concept 1: Describing Matter in Words and Numbers: Students will learn that matter can be described and identified in a variety of ways. Concept 2: Changes to Matter: Students will learn that matter can change physically (mixing, changing temperature and state) as well as chemically (new substances formed).	**Investigative Phenomenon** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages: Activity 2 p. 38-40 SE Pages: Activity 2 p. 10-11 **Digital:** Enter Quick Code: ca5011s 

Component	Strengths	Citations
F1. Presence of Phenomena / Problems.	Concept 3: A Model of Matter: Students will learn that matter is composed of very small particles that behave differently in solid, liquid, or gas form. **Phenomenon-Based Unit Project**: Grade 5: Unit 1: Students apply the SEPs and CCCs developed through the Unit to engage in a three-dimensional Performance-Based Project. Students investigate the hypothesis that water is evaporating over time from the fish bowl. They design an experiment using water in both control and experimental beakers to compare changes in their water levels over time. Students makes quantitative measures of mass and temperature over time than use the data to construct appropriate graphs. Using the graphed data, they explain their results.	**Phenomenon-Based Unit Project** Grade 5, Unit 1 **Print:** TE Pages: Unit 1- Unit Project: Decreasing Water Levels: p. 212-215 SE Pages: Unit 1- Unit Project: Decreasing Water Levels: p. 136-139 **Digital:** Enter Quick Code: ca5068s  UNIT 1 | What Is Matter Made Of? Unit Project STEM Solve Problems Like a Scientist Decreasing Water Levels NGSS Alignment 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. 5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 5-PS1-3 Make observations and measurements to identify materials based on their properties. 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. Instructional Focus The Unit Project allows students to return to the anchor phenomenon for the unit, Decreasing Water Levels, and apply the performance expectations for the unit to solve or research a problem. SEP Developing and Using Models SEP Constructing Explanations and Designing Solutions CCC Cause and Effect Strategy This summative assessment provides students with the opportunity to investigate and explain observations made about water levels in a fish bowl decreasing over time. Students should work in pairs to complete this activity. Material List (per group) • 2 beakers, 250 mL each • Digital scale • Water • Air thermometer • Labels for the beakers • Plastic wrap • Window with a lot of sunlight • Wax pencil or masking tape with markers * Included in materials kit (C) Consumable material DIGITAL Quick Code: ca5068s 212 | Discovery Education

Component	Strengths	Citations
F1. Presence of Phenomena / Problems.	**Performance-Based Unit Assessment**: Grade 5: Unit 1: After students have completed the activities within each concept of the unit, teachers can assign students the Performance-Based Assessment (PBA) for that unit. The accompanying Teacher's Guide outlines the NGSS performance expectations that are the focus of the PBA. In this PBA, students are presented with text and images describing the scientific method along with typical tools used in laboratories. Students go through the various steps of designing a scientific investigation by planning and carrying out an experiment focused on the measurement of water mass variation over a week as a consequence of evaporation. First, students observe the available tools and analyze the measurement units to be used. Then, the measurement campaign takes place with the students recording data in a table and a graph. Students interpret the data, and are then asked to predict the results of a slightly modified experiment. They conclude the assessment by explaining the reasons for the different expected outcomes using particle models of matter and its physical changes.	**Performance-Based Unit Assessment** Grade 5, Unit 1 **Digital:** Enter Quick Code: ca5071s **Print:** TE Pages Performance-Based Assessment P. 216 **Teacher's Guide**: https://tinyurl.com/y3dv67ct  Performance-Based Assessment Grade 5: What Is Matter Made Of? You Are the Scientist!

Component	Strengths	Citations
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 support student learning.** • **when engineering design is a learning focus, it is integrated with the appropriate dimensions (i.e., engineering is not isolated).** Each concept has a multitude of resources and materials to support learning of the DCIs, SEPs and CCCs. Specific examples of California Science Techbook assets include, but are not limited to: **Course Level Alignment**: The course level development of the Performance Expectations, including the DCIs, SEPs, and CCCs can be found in the Next Generation Science Standards and Three Dimensions at a Glance pages within the Scope & Sequence area of the print Teacher's Edition.	**Course Level Alignments**: https://tinyurl.com/ybsxacu2 **Grade 5: Course** Unit 1 **Print:** TE Pages Scope & Sequence overview p. xxxviii-xliii Three Dimensions p. 4-7 

Component	Strengths	Citations
F2. Presence of Three Dimensions.	**Unit Level Alignment**: Unit level three dimensional expectations include the Unit project, tied to the Unit Anchor Phenomenon, as well as the Summative Performance Based Assessment (PBA). In the unit project, students will demonstrate the SEPs and CCCs to apply their newly acquired DCIs for the unit to both science and engineering-based problems and scenarios. The three-dimensional PBA expects students to apply the ideas of the unit to a new storyline in order to demonstrate transfer of learning. A Teacher's Guide for the PBA outlines the evidence students demonstrate across the three dimensions. Example: Grade 5: Unit 1: What Is Matter Made Of?: Students are introduced to the Anchor Phenomenon in a video about water evaporating from a fish bowl. Through the three investigative phenomena in the unit, students explore how matter can be described and identified both qualitatively and quantitatively. They examine how matter can change both physically and chemically, and how new substances are formed. Students also learn that matter is composed of very small particles, and how those particles behave in a solid, a liquid, or a gas.	

Component	Strengths	Citations
F2. Presence of Three Dimensions.	Science and Engineering Practices and Cross Cutting Concepts are integrated as students work on the Unit Project: Decreasing Water Levels. 	**SEPs and CCCs** Grade 5, Unit 1 **Print:** TE Pages: Unit Project: Decreasing Water Levels: p. 212-215 SE Pages: Unit Project: Decreasing Water Levels: p. 136-139  **Digital:** Enter Quick Code: ca5068s

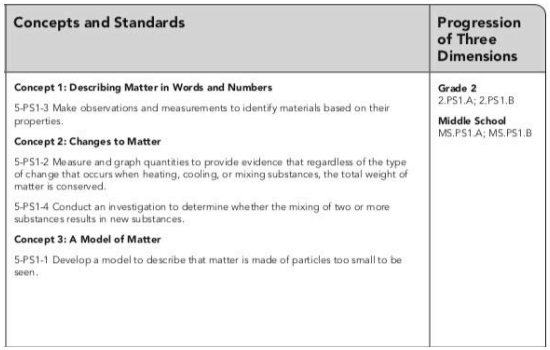
<table>
<tr><th>Component</th><th>Strengths</th><th>Citations</th></tr>
<tr>
<td>F2. Presence of Three Dimensions.</td>
<td>
Concept Level Alignment:

Three-dimensional learning objectives drive the design and sequence of the activities within each concept
Teacher support for the alignment to the SEP and CCCs is included at the activity level:

Bolded text highlights the specific dimension of the PE addressed during each activity
Instructional Focus provides details on the element level of the SEP and CCC students will demonstrate at the completion of the activity
NGSS call-outs highlight for both teachers and students the specific SEP and CCC being addressed within the activity
Strategies to set up the learning environment for students to demonstrate the SEPs and CCCs related to the concept DCIs

</td>
<td>
Grade 5, Unit 1
Digital:
Enter Quick Code: ca5006s

Concept Pages:
Within each concept, reference tagged activities in Learn and Share (Explore, Explain, and Elaborate) for additional evidence of three dimensions.

Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Concept 1.1: p 36
Concept 1.2: p 98
Concept 1.3: p 172</td><td>Concept 1.1: p 8
Concept 1.2: p 50
Concept 1.3: p 104</td></tr>
</table>

<table>
<tr><th>Concepts and Standards</th><th>Progression of Three Dimensions</th></tr>
<tr><td>Concept 1: Describing Matter in Words and Numbers
5-PS1-3 Make observations and measurements to identify materials based on their properties.
Concept 2: Changes to Matter
5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
Concept 3: A Model of Matter
5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen.</td><td>Grade 2
2.PS1.A; 2.PS1.B
Middle School
MS.PS1.A; MS.PS1.B</td></tr>
</table>

Digital:
Enter Quick Code:

Concept 1.1: ca5066s
Concept 1.2: ca5067s
Concept 1.3: ca5069s

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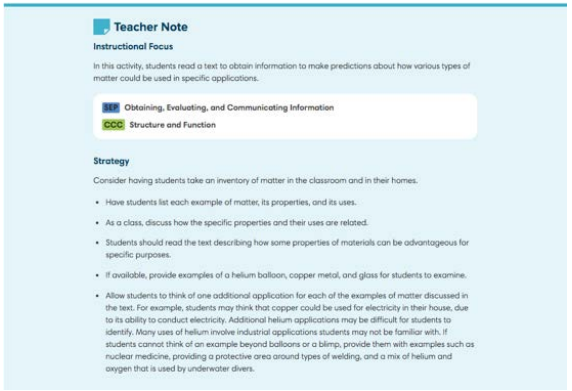
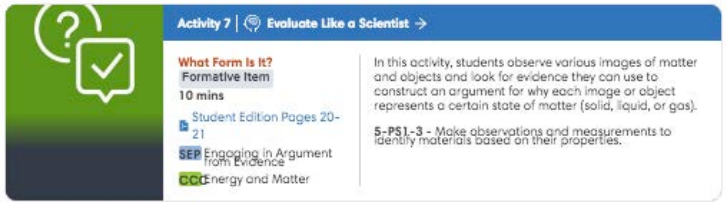
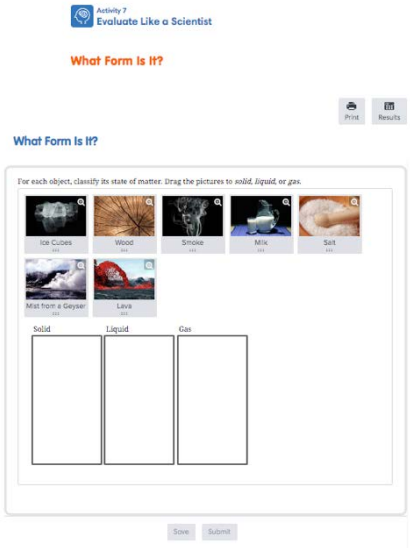
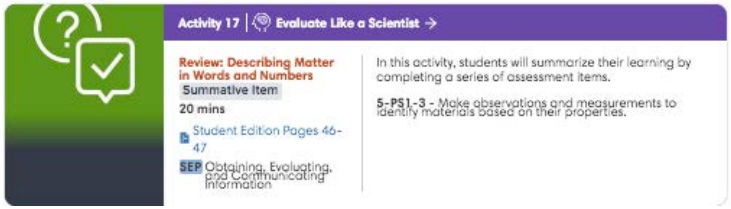
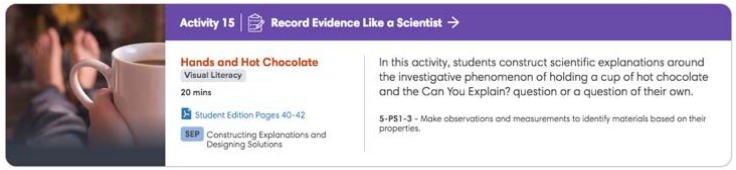
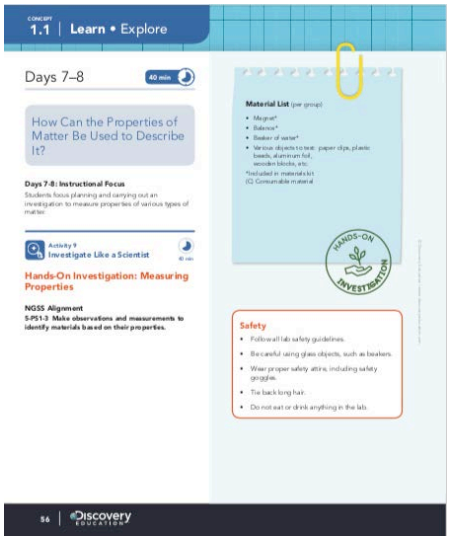
</table>

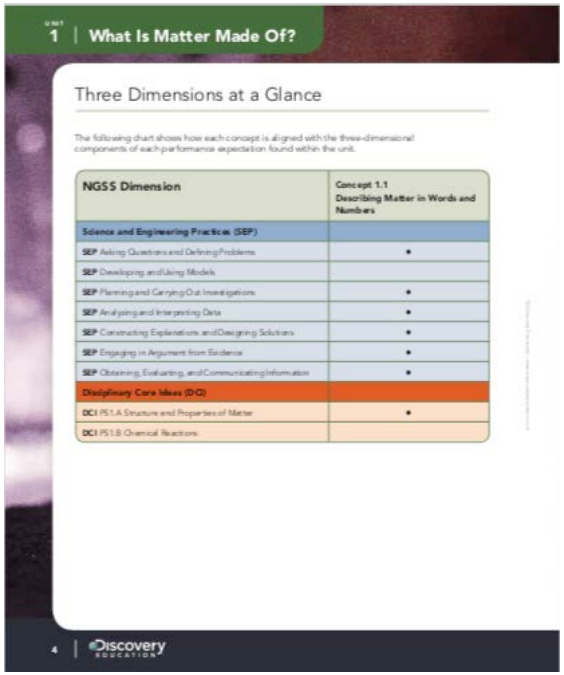
Component	Strengths	Citations
F2. Presence of Three Dimensions.	• Teacher notes for each digital activity provide the dimensions addressed along with instructional focus, strategies, misconceptions and other support at point of use. • Pathways for Learning guidance provides options for students to meet the element level of the SEP and CCC in a variety of technology settings • Teacher reflection questions encourage reflection on students' performance across the three dimensions. **Pathways to Learning** **Print:** Show students the assessment item, including the directions, pictures, and answer boxes. For each picture, ask the class to think about whether the material is a solid, liquid, or gas. Have the students vote for their choice by raising their hands, and select the response that receives the most votes. Once all seven items have been classified, click "submit." If any of the pictures were classified incorrectly, have a class discussion about it and select a new classification. **Blended:** Assign student groups to complete the assessment item at computer work stations. All students must agree on a classification for each material before an answer is selected. When they have finished, ask each group to select three more substances—one solid, one liquid, and one gas—to add to the assessment. Call on groups to present their new materials to the class, asking the class to classify them as well. **Digital:** Ask students to complete the assessment item individually or with a partner. When they have finished, ask students to use Studio to create a poster that shows a similar assessment item using pictures of three to five more substances in different states. Students may copy and paste pictures from Techbook or locate or draw their own. Have students get together with other students or teams to look at each other's posters and try to classify the substances in the new images.	**Teacher Notes:** Grade 5, Unit 1, Concept 1.1, Activity 12 https://tinyurl.com/yane7z2j  Teacher Note Instructional Focus In this activity, students read a text to obtain information to make predictions about how various types of matter could be used in specific applications. SEP Obtaining, Evaluating, and Communicating Information CCC Structure and Function Strategy Consider having students take an inventory of matter in the classroom and in their homes. • Have students list each example of matter, its properties, and its uses. • As a class, discuss how the specific properties and their uses are related. • Students should read the text describing how some properties of materials can be advantageous for specific purposes. • If available, provide examples of a helium balloon, copper metal, and glass for students to examine. • Allow students to think of one additional application for each of the examples of matter discussed in the text. For example, students may think that copper could be used for electricity in their house, due to its ability to conduct electricity. Additional helium applications may be difficult for students to identify. Many uses of helium involve industrial applications students may not be familiar with. If students cannot think of an example beyond balloons or a blimp, provide them with examples such as nuclear medicine, providing a protective area around types of welding, and a mix of helium and oxygen that is used by underwater divers. **Pathways for Learning** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages Pathways for Learning p. 52 **Teacher Reflection Questions** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages Teacher Reflection p. 40 **Teacher Reflection** • Did this activity engage the students? • Did this activity allow students to generate their own questions? • Would I introduce the concept of slowing temperature change differently next year?

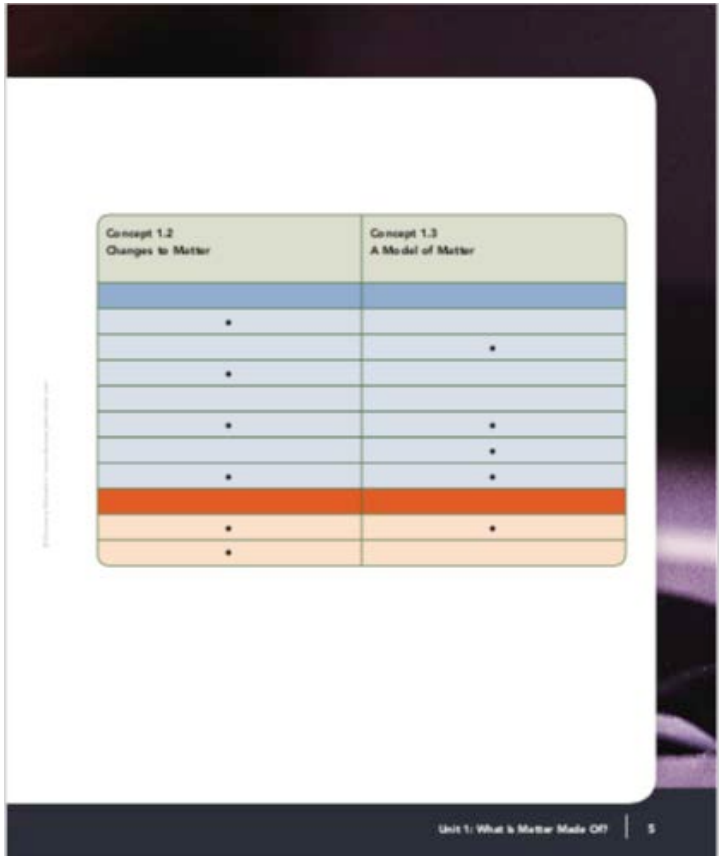
Component	Strengths	Citations
F2. Presence of Three Dimensions.	**Formative Assessment Items**: Teachers have the opportunity to gather formative assessment data related to students' progress of the three dimensions at various points within each concept. • Technology Enhanced Items (TEIs) have been embedded throughout each concept to uncover what students know and allow students to demonstrate three-dimensional proficiency of the performance expectations. Student responses feed directly to the teacher dashboard, providing instant access to data to inform instruction and drive differentiation strategies. Each TEI has built-in scaffolded feedback for students.  • Summative Concept Assessments, focused on the DCIs, are found at the end of each concept. These assessments can be assigned to students, taken by students on their own as a practice test, or printed and given to students to complete as an assessment or an assignment. The results of these assessments are provided within the teacher dashboard. Teachers are able to identify areas of strength and weakness and adjust pacing of instruction to achieve	**Formative Assessment** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages: Activity 7, What Form Is It? p: 51-52 SE Pages: Activity 7, What Form Is It? p: 20-21 **Digital:** Enter Quick Code: ca5016s 

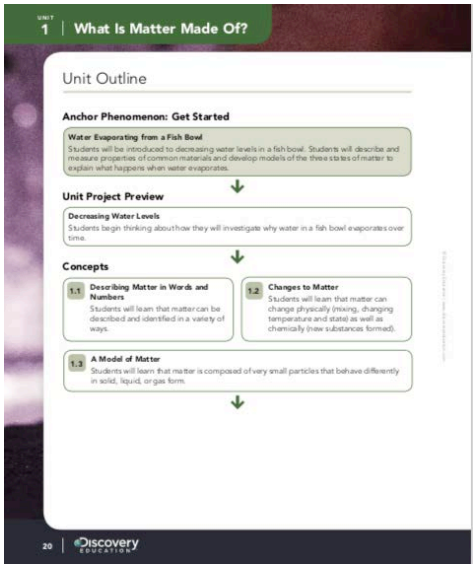
Component	Strengths	Citations
F2. Presence of Three Dimensions.	 • Record Evidence activity expects students to analyze complex text and authentic data and evaluate information to support a student-generated claim to their own questions or the Can You Explain question for the concept. As students refine their scientific explanations throughout a course, they will refine their understanding of science content as well as their understanding of the nature of science. Students and teachers can review and provide feedback to one another to increase the rigor of the response throughout a concept, unit, or course. These activities have been scaffolded across a course to support students in achieving proficiency for the grade-band expectation. 	**Summative Assessment** **Print:** TE Pages: Activity 17, Evaluate Like a Scientist p. 84-85 SE Pages: Activity 17, Evaluate Like a Scientist p. 46-47 **Digital:** Enter Quick Code: ca5026s **Digital**: Practice Assessment https://tinyurl.com/y9aqthoa **Record Evidence activity** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages: Activity 15, Record Evidence Like a Scientist p. 78-81 SE Pages: Activity 15, Record Evidence Like a Scientist p. 40-42 **Digital:** Enter Quick Code: ca5024s

Component	Strengths	Citations
F2. Presence of Three Dimensions.	• Hands-On Activities (HOAs) provide opportunities for students to demonstrate the science and engineering practices and analyze data to look for evidence of cross cutting concepts. Hands-On Activities contain student sheets that allow students to observe, predict, classify, communicate, and analyze materials and practices from science investigations.   	**Hands-On Activities** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages: Activity 9, Hands-On investigation: Measuring Properties p. 5 SE Pages: Activity 9, Hands-On investigation: Measuring Properties p. 24-27 **Digital:** Enter Quick Code: ca5018s Digital teacher notes and activity video with Teacher View On feature. 

Component	Strengths	Citations
F3. Presence of Environmental Principles & Concepts (EP&Cs)..	**The materials include (as applicable):** • **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 implement solutions to real-world environmental problems.** The Discovery Education Comprehensive Science Program includes varied resources that identify, include, and authentically align the instructional content to the California EP&Cs. EP&C Map demonstrates specific resources and activities within each course that target the California EP&Cs. **Concept Level Content**: Grade 5: Unit 2, Concept 2.3: Energy Flow in Ecosystems In this concept, students explore the **Wonder** question**,** "How can the energy animals use for body repair, growth, motion, and body warmth be traced to the sun?" Throughout the **Learn** section, students have the opportunity to investigate the characteristics of energy, including how energy flows from the sun. They construct explanations related to the **Wonder** question, include evidence of how the sun provides energy to animals, and app their understanding of energy to rice output on various plots of land.	**EP&Cs - Grade 5: Course level** **Print:** TE Pages: Unit 1, Scope & Sequence overview p. xxxviii-xliii **Digital**: EP&C Map **https://tinyurl.com/ybsxacu2** Appropriate Alignments among *Environmental Principles and Concepts (EP&Cs)* and *CA NGSS*: Grade Five *5-LS1 From Molecules to Organisms: Structures and Processes* Performance Expectations: 5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water. [Clarification Statement: Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.] Connections Between EP&Cs, CCCs, and SEPS: Principle IV: The exchange of matter between natural systems and human societies affects the long-term functioning of both. Crosscutting Concepts: Energy and Matter • Matter is transported into, out of, and within systems. (5-LS1-1) Cause and Effect • Cause and effect relationships are routinely identified, tested, and used to explain change. (5-PS1-4) Science and Engineering Practices: Engaging in Argument from Evidence • Support an argument with evidence, data, or a model. (5-LS1-1) Clarifications and Connections Between DCIs and EP&Cs: Disciplinary Core Ideas: As students learn that: LS1.C: Organization for Matter and Energy Flow in Organisms "Plants acquire their material for growth chiefly from air and water. (5-LS1-1)" Environmental Principle and Concept(s): Students should be developing an understanding: Principle IV Concept a: "that the effects of human activities on natural systems are directly related to the quantities of resources consumed and to the quantity and characteristics of the resulting byproducts." Discovery Education Science Techbook Resources: Grade 5 > Interacting Earth Systems > Protecting Earth's Resources > Beyond > Video: Healthy Ocean—Sustainable Seafood Grade 5 > From Matter to Organisms > Matter Flow in Ecosystems > Beyond > Video: Can Bacteria Be Helpful for Our World? Grade 5 > Interacting Earth Systems > Protecting Earths Resources > Wonder > Disposing of Trash Grade 5 > Interacting Earth Systems > Protecting Earth's Resources > Learn > Why Is It Important That We Protect Our Natural Resources? (Activities 4-10) **EP&C – Concept level** Grade 5, Unit 2, Concept 2.3 **Print:** TE Pages: **Learn** tab p. 159-181 SE Pages: **Learn** tab p. 114-129 **Digital:** https://tinyurl.com/yao2u52k

Component	Strengths	Citations
F4. Presence of a Logical Sequence of Learning.	**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; and the SEPs and CCCs are potentially sufficient and appropriate for students to figure out the phenomena or problems.** • **phenomenon or problems are linked to each other.** The three dimensions (SEP, DCI, CCC) are sequenced across each course and designed with scaffolds across the grade bands. **Unit Level Alignment**: Each unit in Grades K-5 aligns to the standard bundles found in the California Framework for Science. Example of building SEPs across the course: 5th Grade: Unit 1 – What Is Matter Made Of? Concept 1.1 Describing Matter in Words and Numbers • SEP Asking Questions and Defining Problems • SEP Planning and Carrying Out Investigations • SEP Analyzing and Interpreting Data • SEP Constructing Explanations and Designing Solutions • SEP Engaging in Argument from Evidence • SEP Obtaining, Evaluating, and Communicating Information	**Grade 5: Course** **Course Level Alignments**: https://tinyurl.com/ybsxacu2 **Scope and Sequence and Three Dimensions Print:** TE Pages Scope & Sequence overview p. xxxviii-xliii Three Dimensions p. 4-7 

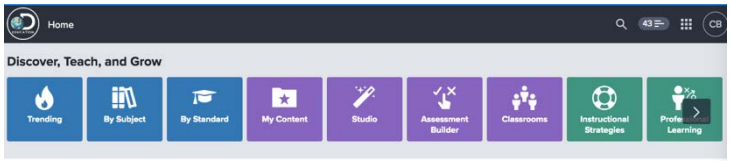
Component	Strengths	Citations
F4. Presence of a Logical Sequence of Learning.	Concept 1.2 Changes to Matter • SEP Asking Questions and Defining Problems • SEP Planning and Carrying Out Investigations • SEP Constructing Explanations and Designing Solutions • SEP Obtaining, Evaluating, and Communicating Information Concept 1.3 A Model of Matter • SEP Developing and Using Models • SEP Constructing Explanations and Designing Solutions • SEP Engaging in Argument from Evidence • SEP Obtaining, Evaluating, and Communicating Information	

Component	Strengths	Citations
F4. Presence of a Logical Sequence of Learning.	**Concept Level Sequence Examples**: Students are introduced to grade appropriate, linked phenomena, that are developmentally scaffolded and in a logical sequence to facilitate engagement in the three dimensions to drive students toward the learning goals. Unit 1: Concept 1.2: Changes in Matter: Students complete a series of activities to learn that matter can change physically, such as by mixing or changing temperature. Also they explore how matter can change chemically, such as by forming new substances. • In activity 3 (Observe Like a Scientist), students use media to obtain information about the three states of matter—solid, liquid, and gas. • In activity 5 (Investigate Like a Scientist), students conduct a hands-on investigation to determine whether the mixing of two or more substances results in new substances. • In activity 10 (Evaluate Like a Scientist), students use their observations about properties to identify characteristics of mixtures and construct explanations to describe the relationship between the parts of a mixture. 	 Within each concept, reference tagged activities in Learn and Share (Explore, Explain, and Elaborate) for additional evidence of three dimensions. **Grade 5, Unit 1, Concept 1.2** **Print:** TE Pages: Concept 1.2; Activity 3: p. 103-104; Activity 5: p. 109-114; Activity 10: p 130-131 SE Pages: Concept 1.2; Activity 3: p. 54-55; Activity 5: p. 58-62; Activity 10: p. 78-79

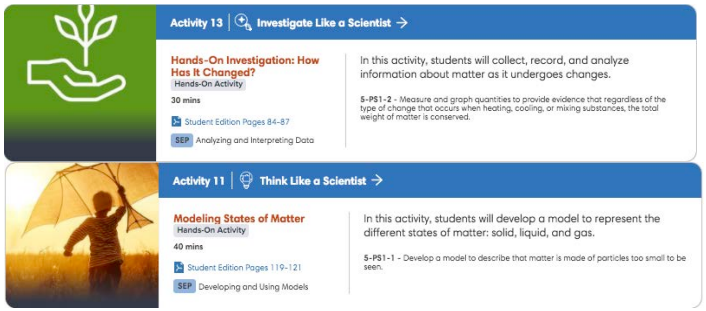
Designed for CA NGSS: Monitoring Student Progress

Component	Strengths	Citations
SP1. Quality of supports for monitoring 3D learning and EP&Cs integration.	**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 student learning experiences to the targeted learning goals.** • **elicit observable evidence of students' 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.** California Science Techbook fosters a dynamic classroom environment where students interact with printed text, digital resources, and hands-on activities, all which create three-dimensional learning experiences. Each concept in California Science Techbook purposefully layers each dimension of the NGSS, so students can authentically demonstrate the SEPs and CCCs. Student progression against all three of the dimensions can be achieved through a system of assessment opportunities.	Student Work Tagged by SEP and CCC throughout the Wonder, Learn and Share instructional activities for both Teacher and Student: **Grade 5, Unit 1** **Print:** TE Pages **Learn** tab p. 4-5 **Digital: Learn** tab: https://tinyurl.com/y9uxsyg9 **Digital:** EP&C Map https://tinyurl.com/ybsxacu2

Component	Strengths	Citations
SP1. Quality of supports for monitoring 3D learning and EP&Cs integration.	**Unit Level Alignment:** **Performance-Based Assessments (PBA)** Students demonstrate three-dimensional learning through multiple three-dimensional prompts associated with a common scenario. Teacher Guides for each PBA describe the multidimensional nature of each item and provide sample student responses. **Concept Level Alignment:** **Teacher Dashboard: Real Time Data & Differentiation** Each activity is tagged by SEP and CCC designations for both the teacher and the student to help them focus on the evidence of the dimension within the activity. Throughout the learning progression, each tab of each concept includes Technology Enhanced Items that have students connect to what they already know about the topic (Wonder), and then as they progress, to monitor what they do learn as they explore and learn through a variety of multimodal resources (Learn, Share). Students receive feedback on their knowledge, and the teacher has real-time access to this data in the Dashboard. This real-time data allows teachers to remediate, accelerate or reinforce learning as needed, in order to help students develop metacognitive abilities. Based on this real-time data, teachers can then make decisions about the needs of each student and select an appropriate instructional resource within the concept to meet the students' needs. Discovery Education Experience resources deepen the pool of assets that can be assigned to students.	**Grade 5: Unit 1: What Is Matter Made Of?** **Unit Level Performance Based Assessment** **Digital:** https://tinyurl.com/yx9q28h7 **Teacher's Guide:** https://tinyurl.com/y3dv67ct **Technology Enhanced Item examples** Concept 1.1 **Digital:** Activity 11; Evaluate Like a Scientist; Measuring Matter Enter Quick Code: ca5020s **Digital:** Activity 13; Evaluate Like a Scientist; Uses of Matter: Enter Quick Code: ca5022s **Video of Dashboard functionality:** https://tinyurl.com/y4chmhbz 

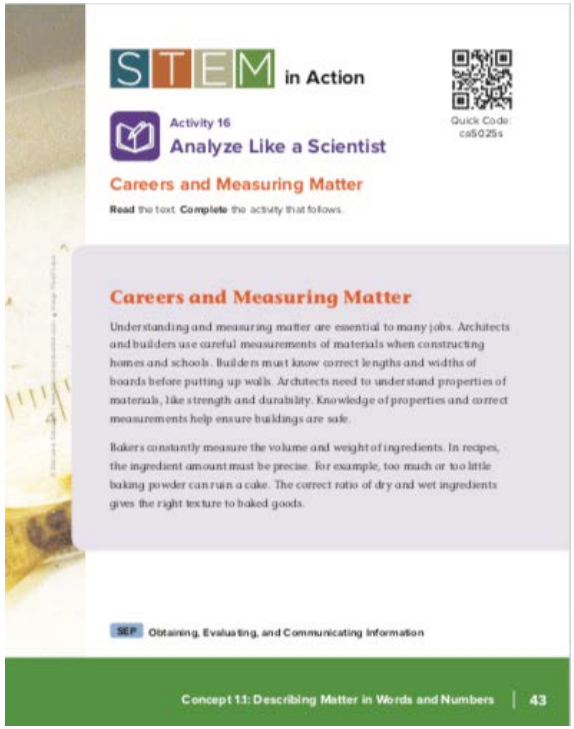
Component	Strengths	Citations
SP1. Quality of supports for monitoring 3D learning and EP&Cs integration.	In addition to the full Dashboard, teachers have a Results View for all individual Technology Enhanced items at point of use as well. **Builder Tools:** Assessment Builder and Discovery Studio give teachers flexibility to create customized assessments. 	 **Discovery Education homepage Digital:** https://app.discoveryeducation.com/learn/home

DISCOVERY EDUCATION NGSS TIME RESPONSE **Grade 5**

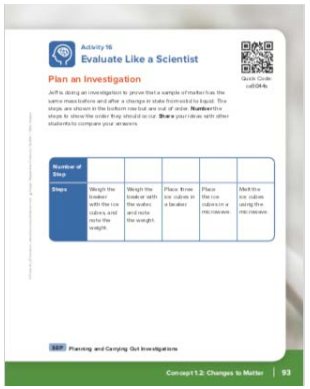
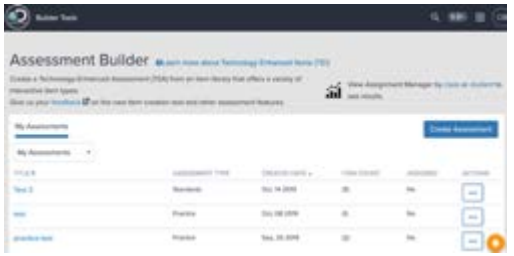
Component	Strengths	Citations
SP1. Quality of supports for monitoring 3D learning and EP&Cs integration.	**Hands-on Activities and Hands-on Investigations:** Essential to the integration of a majority of science and engineering practices, hands-on activities and labs allow students to design and conduct investigations, develop models, and use the crosscutting concepts to reflect on their learning through the analysis and conclusion questions accompanying each activity. The student investigation sheet in the digital product purposefully does not provide the procedures for the investigation to encourage students to develop their own methods and processes. Scaffolded student sheets are provided in print if students require more scaffolding with the specific SEP or CCC being addressed in the activity. 	**Hands-on Activity** Grade 5, Unit 1, Concept 1.3 **Digital:** Activity 11; Think Like a Scientist; What Is the Relationship between Changing States and How a Particle Moves? Enter Quick Code: ca5060s **Print:** TE Pages: Activity 11 p. 193-197 SE Pages: Activity 11 p. 119-121 **Hands-on Investigation** Grade 5, Unit 1, Concept 1.2 Concept 1.2 Changes to Matter **Digital**: Activity 13; Investigate Like a Scientist; Hands-On Investigation: How Has It Changed? Enter Quick Code: ca5041s **Print:** TE Pages: Activity 13 p. 137-143 SE Pages: Activity 13 p. 84-87

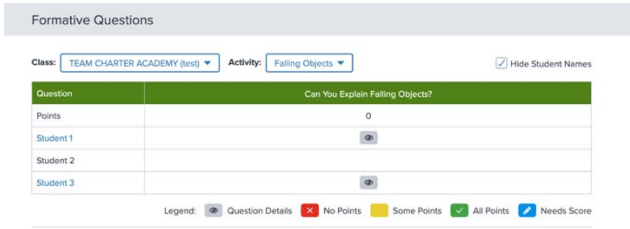
Component	Strengths	Citations
SP1. Quality of supports for monitoring 3D learning and EP&Cs integration.	**Online Interactive Models**: Students have the opportunity to manipulate various online models found in every concept to collect data and test out their ideas. The analysis of the data collected from the interactives serves as an assessment opportunity for teachers and student reflection.  	**Online Interactive** Grade 5, Unit 1, Concept 1.1 **Digital:** Activity 4; Observe Like a Scientist; What's the Matter? Enter Quick Code: ca5013s **Teacher's Guide:** https://tinyurl.com/ydxroqr8 **Print:** TE Pages: Activity 4, p. 45-45 SE Pages: Activity 4, p. 14-16 **Beyond tab – Additional Interactives and Resources** **Digital:** https://tinyurl.com/yc6jaaem

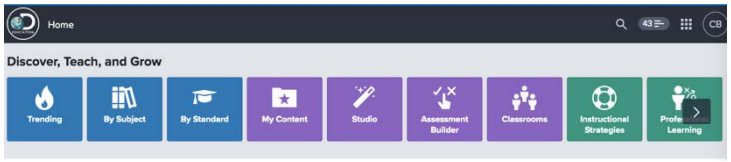
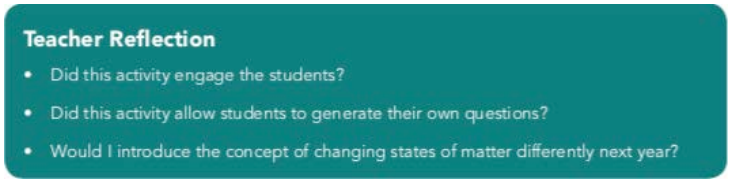
DISCOVERY EDUCATION NGSS TIME RESPONSE **Grade 5**

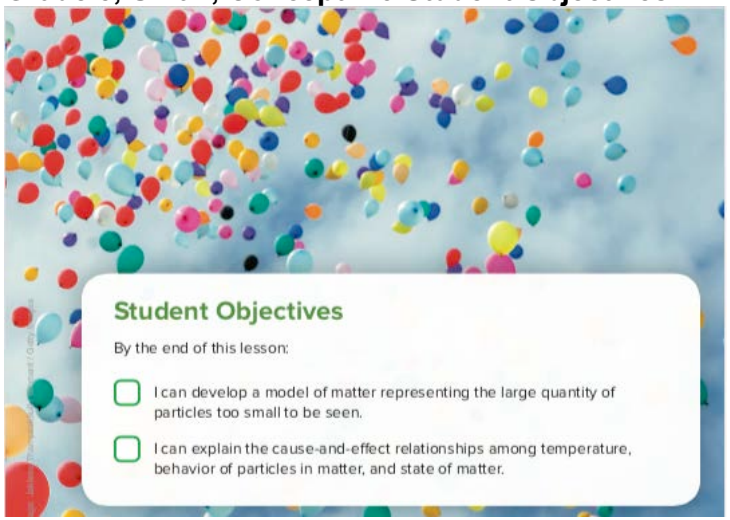
Component	Strengths	Citations
SP1. Quality of supports for monitoring 3D learning and EP&Cs integration.	**STEM in Action and Project Starters**: Options for students to further elaborate on the disciplinary core ideas through the application of various SEPs and CCCs can be found in the STEM Project Starter section under Beyond as well as in the STEM Connect resource within the Science Techbook bundle. Many of the STEM Project Starters allow students the opportunity to dive deeper into the CA EP&C and research related topics or design engineering solutions to problems related to the environment.  STEM in Action Activity 16 Analyze Like a Scientist Careers and Measuring Matter Read the text. Complete the activity that follows. Careers and Measuring Matter Understanding and measuring matter are essential to many jobs. Architects and builders use careful measurements of materials when constructing homes and schools. Builders must know correct lengths and widths of boards before putting up walls. Architects need to understand properties of materials, like strength and durability. Knowledge of properties and correct measurements help ensure buildings are safe. Bakers constantly measure the volume and weight of ingredients. In recipes, the ingredient amount must be precise. For example, too much or too little baking powder can ruin a cake. The correct ratio of dry and wet ingredients gives the right texture to baked goods. SEP Obtaining, Evaluating, and Communicating Information Concept 1.1: Describing Matter in Words and Numbers | 43	**STEM in Action** Grade 5, Unit 1, Concept 1.1 **Digital:** Activity 16; Analyze Like a Scientist; Careers and Measuring Matter Enter Quick Code: ca5025s **Print:** TE Pages: Activity 16 p. 82-83 SE Pages: Activity 16 p. 43-45 **STEM Project Starter** Grade 5, Unit 1, Concept 1.1 **Digital:** Extension 1; Project Sink or Swim https://tinyurl.com/yce93cxb

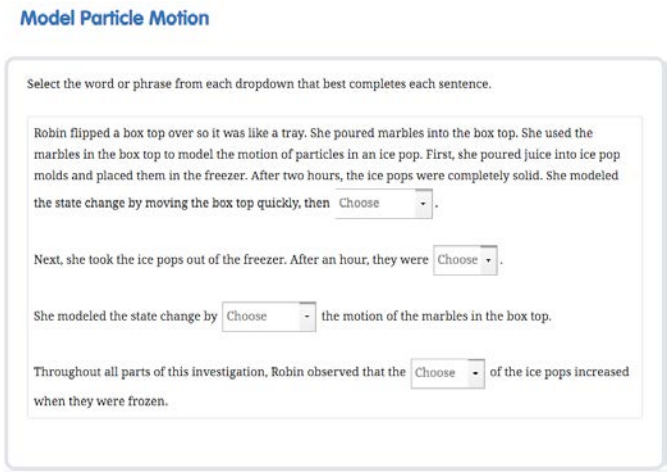
Component	Strengths	Citations
SP2. Quality of capturing student progress over time.	**Assessments are designed to:** • **ensure that students use SEPs integrated with DCIs and CCCs to demonstrate their understanding of phenomena and/or design solutions to problems.** • **connect student learning experiences to the targeted learning goals.** • **elicit observable evidence of students' 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.** California Science Techbook is an interactive, digital resource designed to provide students with multimodal content to enhance and personalize the learning experience. The entire Wonder, Learn, Share (5E) learning cycle described in previous responses utilizes digital content to construct meaningful, interactive lessons—with embedded assessment. Examples of these formative and summative types of assessments include, but are not limited to:	**Video of Dashboard functionality:** https://tinyurl.com/y4chmhbz 

Component	Strengths	Citations
SP2. Quality of capturing student progress over time.	**Multidimensional Technology Enhanced Items (TEIs)** TEIs have been embedded throughout each concept to uncover what students know and allow students to demonstrate three-dimensional proficiency of the academic standards. Student responses feed directly to the Teacher Dashboard, providing instant access to data to inform instruction. Each TEI has three distinct features: an evidence statement, instructional feedback, and scoring expectations. **Assessment Builder** Discovery Education's Assessment Builder offers a unique opportunity to effectively assess individual student performance, both on the part of the teacher and for student self-assessment. The Assessment Builder tool also provides remediation content suggestions for areas in which students may need further work. Class and individual reports serve as a mechanism to measure performance easily in all content areas, provide feedback, and inform educators how to best support individual student growth and improvement. Teachers can utilize pre-created concept and unit assessments or create their own, including standards-based assessments and teacher-created items.	**Technology Enhanced Item** Grade 5, Unit 1, Concept 1.2 **Digital:** Activity 10; Evaluate Like a Scientist; Properties of Mixtures Quick Code ca5028s **Digital:** Activity 16; Evaluate Like a Scientist; Plan an Investigation Enter Quick Code: ca5044s  **Step by Step Guide to Assessment Builder:** https://tinyurl.com/y5r2465g 

Component	Strengths	Citations
SP2. Quality of capturing student progress over time.	Because the assessment of students is an ongoing process that occurs throughout each lesson, other formative and self-assessment types are embedded throughout digital and print lessons in order to provide benchmarks that show student progress in preparation for the final measure, the summative assessment. Constructed response items, hands-on lab worksheets, and Scientific Explanation sheets include rubrics for scoring, visible to teacher and student. Online responses are compiled and displayed for teachers in a dashboard. Names can be removed from the dashboard and the response order randomized so that responses can be used for class discussion and the selection of student exemplars. The Teaching Learning Dashboard in California Science Techbook allows teachers to track student progress on assessment items, with easy-to-read color coding, also known as traffic light scoring.	**Teacher Dashboard** 

Component	Strengths	Citations
SP2. Quality of capturing student progress over time.	The Studio tool allows students to collect their evidence and progression throughout the course, as well as serve as a collaborative tool for students to share their work with their classmates and teachers. Templates within Studio, such as the scientific explanation, allow students to document their explanations over time. Students can use this evidence to reflect on their progression with the three dimensions.  **Teacher Reflection Questions:** Within critical points in the learning sequence, teachers are provided with questions that ask them to reflect on the three-dimensional learning of their students. These reflection questions are found in both the digital and print teacher resources. 	**Studio board**  **Step by Step Guide to Studio:** https://tinyurl.com/y8rt7us2 **Teacher Reflection questions** Grade 5, Unit 1, Concept 1.2 **Print:** TE Pages Activity 2 p. 102

Component	Strengths	Citations
SP3. Quality of guidance and tools that use a variety of measures.	**Assessments are matched to targeted learning goals and elicit a full range of student thinking by:** **• providing clear expectations (e.g., rubric) to students so they understand how they can demonstrate their knowledge.** **• using a variety of measures (e.g., performance tasks, discussion questions, constructed response questions, project- or problem-based tasks, portfolios, and justified multiple choice).** **• providing set(s) of tasks so that students can demonstrate their understanding of the same learning goals in multiple ways.** **Discovery Education Evidence:** Discovery Education supports students throughout their learning journey, with an end goal of students achieving proficiency in defined learning goals. Within the Discovery Education Comprehensive Science Program, varied formative and summative assessments are embedded into the Wonder, Learn, Share (5E) learning cycle for each concept, along with assessments at the unit level. **Learning Targets:** Every concept in the Student Edition begins with learning targets written in the form of “I Can” statements. These are used to articulate clear learning expectations for students.	**Evaluation Criteria (rubric)** Grade 5, Unit 1, Concept 1.3 **Digital:** Activity 14; Record Evidence Like a Scientist Enter Quick Code: ca5063s **Print:** TE Pages: Activity 14 p. 204-207 SE Pages: Activity 14 p. 126-130 **Grade 5, Unit 1, Concept 1:3 Student Objectives** 

Component	Strengths	Citations
SP3. Quality of guidance and tools that use a variety of measures.	**Various Measures:** There are a variety of measures throughout California Science Techbook that allow students to demonstrate their learning. Examples of these various assessments include, but are not limited to: **Technology Enhanced Items** (TEIs) in each concept allow students to demonstrate three-dimensional proficiency of the performance expectations. Student responses feed directly to the Teacher Dashboard, providing instant access to data to inform instruction. Each TEI has built-in scaffolded feedback for students, and a variety of TEI types that are aligned to the CAST item types are integrated across each concept.	**Technology Enhanced Item** Grade 5, Unit 1, Concept 1.3 **Digital:** Activity 7; Evaluate Like a Scientist; Modeling the Particles of Matter Code ca5056s **Digital:** Activity 10; Evaluate Like a Scientist; Model Particle Motion Enter Quick Code: ca5059s  Model Particle Motion Select the word or phrase from each dropdown that best completes each sentence. Robin flipped a box top over so it was like a tray. She poured marbles into the box top. She used the marbles in the box top to model the motion of particles in an ice pop. First, she poured juice into ice pop molds and placed them in the freezer. After two hours, the ice pops were completely solid. She modeled the state change by moving the box top quickly, then Choose . Next, she took the ice pops out of the freezer. After an hour, they were Choose . She modeled the state change by Choose the motion of the marbles in the box top. Throughout all parts of this investigation, Robin observed that the Choose of the ice pops increased when they were frozen.

<table>
<tr><th>Component</th><th>Strengths</th><th>Citations</th></tr>
<tr>
<td>SP3. Quality of guidance and tools that use a variety of measures.</td>
<td>Summative Assessments are in each concept's Share section, with their results displayed in the Teacher Dashboard. These assessments include multiple types of TEIs, including drag and drop, select all that apply, and read and highlight items, to name a few. Teachers are able to identify areas of strength and weakness on each assessment for each student and subsequently provide remediation to ensure the achievement of proficiency for all students.

Scientific Explanations:
Scientific Explanations allow students to analyze complex text and authentic data and evaluate information to support a student-generated claim. Following the Claim-Evidence- Reasoning format, students and teachers can review and provide feedback to one another to increase the rigor of the response throughout a concept, unit, or course.</td>
<td>Summative Concept Assessment
Grade 5, Unit 1, Concept 1.1
Digital: Activity 17
Enter Quick Code: ca5026s
Note: Make sure Teacher View On

Digital:
Summative Assessment:
https://tinyurl.com/y9aqthoa
Note: Make sure Teacher View On

Scientific Explanations
Grade 5, Unit 1, Concept 1.2
Digital: Activity 9, Investigate Like a Scientist, Mixing It Up
Enter Quick Code: ca5037s
Note: Make sure Teacher View On

Editable Activity for Students and Teacher's Guide:
https://tinyurl.com/yb83n79w
Note: Make sure Teacher View On

Print:
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<tr><td>Activity 9
p. 122-129</td><td>Activity 9
p. 70-77</td></tr>
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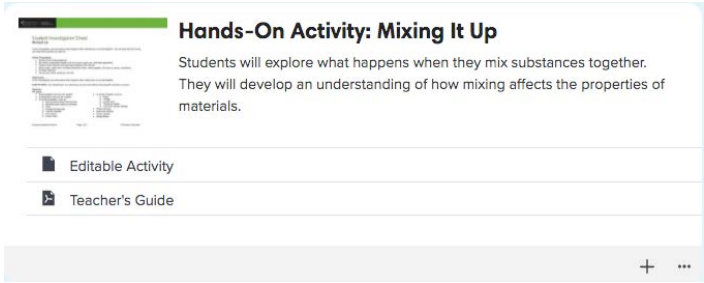
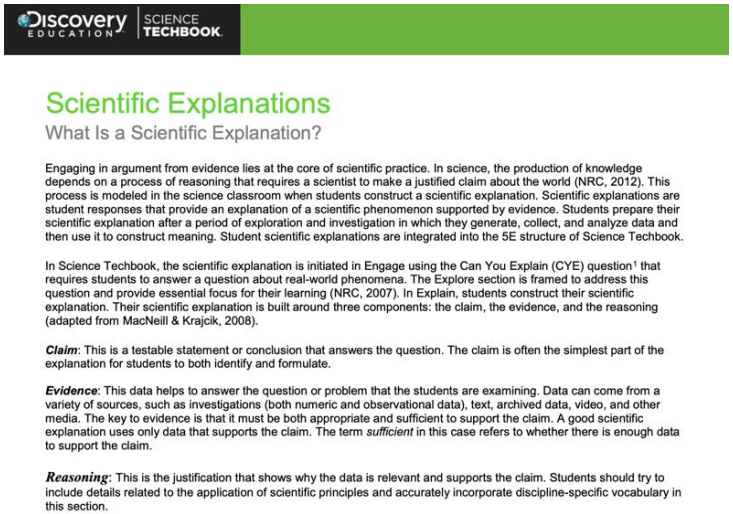
Component	Strengths	Citations
SP3. Quality of guidance and tools that use a variety of measures.		 **Scientific Explanation Teacher Rubric** https://tinyurl.com/y6mmlhrz Note: Make sure *Teacher View On* 

<table>
<tr><th>Component</th><th>Strengths</th><th>Citations</th></tr>
<tr>
<td>SP3. Quality of guidance and tools that use a variety of measures.</td>
<td>Hands-On Activities and Hands-On Labs (HOAs and HOLs) provide opportunities for students to demonstrate the science and engineering practices and analyze data to look for evidence of crosscutting concepts. Based on the proficiency of the students, teachers can determine the appropriate amount of scaffolding to provide. Analysis and conclusion questions allow students to reflect on their learning.</td>
<td>
Hands-on Activity
Grade 5, Unit 1, Concept 1.3

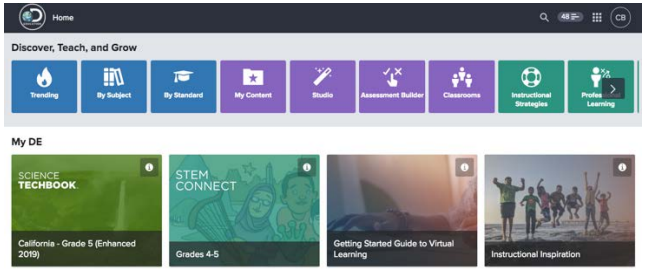
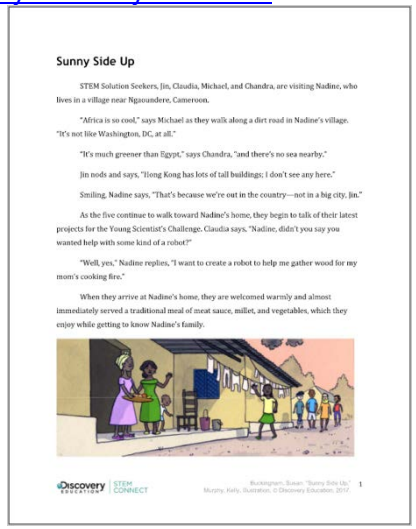
Digital: Activity 11; Think Like a Scientist; What Is the Relationship between Changing States and How a Particle Moves?
Enter Quick Code: ca5060s

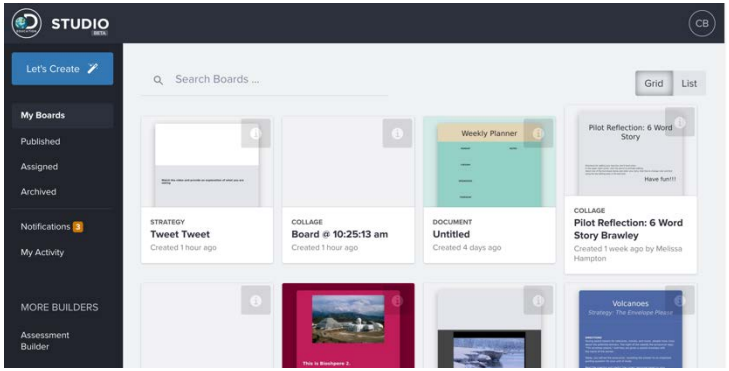
Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Activity 11
p. 193-197</td><td>Activity 11
p. 119-121</td></tr>
</table>

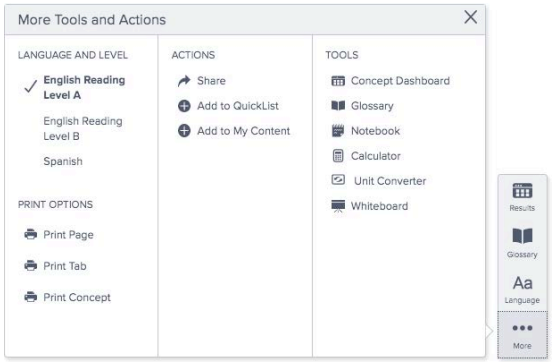
Hands-on Investigation
Grade 5, Unit 1, Concept 1.2

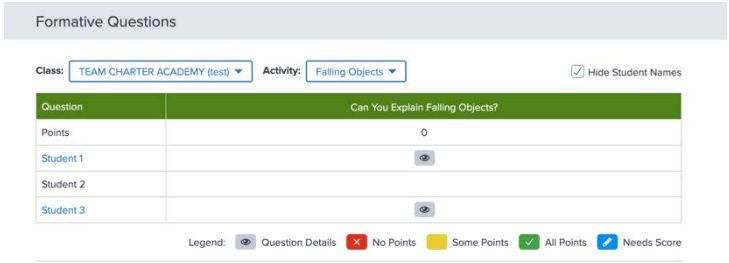
Digital: Activity 13; Investigate Like a Scientist; Hands-On Investigation: How Has It Changed?
Enter Quick Code: ca5041s

Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Activity 13
p. 137-143</td><td>Activity 13
p. 84-87</td></tr>
</table>
</td>
</tr>
</table>

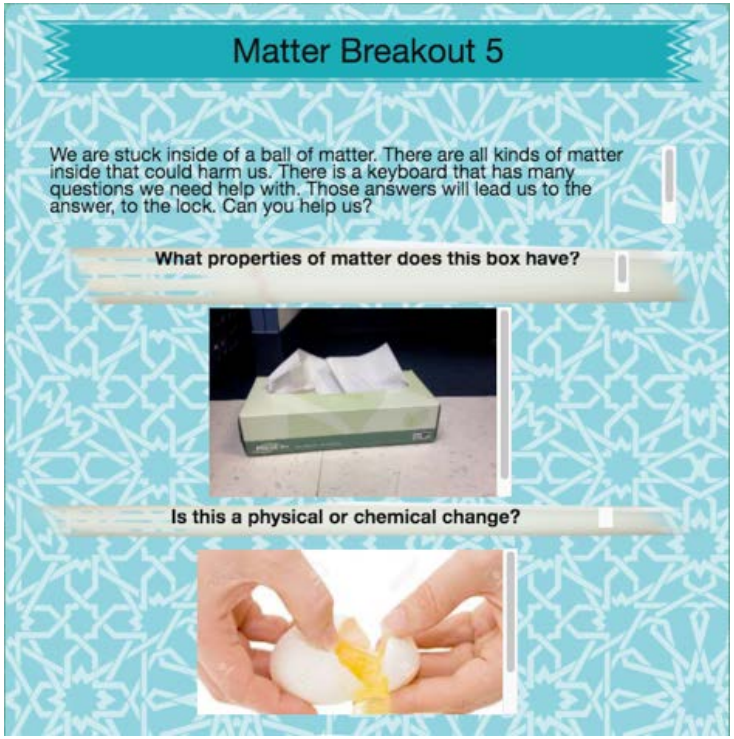
Component	Strengths	Citations
SP3. Quality of guidance and tools that use a variety of measures.	**STEM Connect** projects use an interdisciplinary approach to push students to seek solutions to important real-world challenges such as sustainable farming, water conservation and other environmental critical issues. STEM Connect is built using a 4Cs STEM framework to allow students to develop the 21st-century skills of creativity, critical thinking, communication, and collaboration. Using STEM Connect projects to assess students' science learning provides the teacher with set(s) of tasks so that students can demonstrate their understanding of the same learning goals in multiple ways.	**STEM Connect**  Grade 4-5: Sunny Side Up https://tinyurl.com/ya8oasnm STEM Solution Seekers: Sunny Side Up https://tinyurl.com/yawalmm8  Sunny Side Up STEM Solution Seekers, Jin, Claudia, Michael, and Chandra, are visiting Nadine, who lives in a village near Ngaoundere, Cameroon. "Africa is so cool," says Michael as they walk along a dirt road in Nadine's village. "It's not like Washington, DC, at all." "It's much greener than Egypt," says Chandra, "and there's no sea nearby." Jin nods and says, "Hong Kong has lots of tall buildings; I don't see any here." Smiling, Nadine says, "That's because we're out in the country—not in a big city, Jin." As the five continue to walk toward Nadine's home, they begin to talk of their latest projects for the Young Scientist's Challenge. Claudia says, "Nadine, didn't you say you wanted help with some kind of a robot?" "Well, yes," Nadine replies, "I want to create a robot to help me gather wood for my mom's cooking fire." When they arrive at Nadine's home, they are welcomed warmly and almost immediately served a traditional meal of meat sauce, millet, and vegetables, which they enjoy while getting to know Nadine's family.

Component	Strengths	Citations
SP3. Quality of guidance and tools that use a variety of measures.	**Assessment Tools**, including Discovery Experience Resources, provide teachers and students with ample resources not only to build different types of assessments but also to provide students with a unique set of tools that allows them to demonstrate their learning in unique ways. Tools like Assignment Builder, Assessment Builder, Writing Prompt Builder, and Discovery Studio give teachers flexibility to create customized assessments. Discovery Education's Studio also provides students with a "digital poster" to make their learning collaborative and public while also using the 200,000 Experience robust digital content assets to build, enhance, and enrich their understanding. 	**Step by Step Guide to Assessment Builder:** https://tinyurl.com/y5r2465g **Step by Step Guide to Studio:** https://tinyurl.com/y8rt7us2

Component	Strengths	Citations
SP4. Quality of support and strategies for ensuring equitable access.	**Assessments are designed to be:** • **free from bias (e.g., gender, racial, socioeconomic status, cultural).** • **accessible to all students (e.g., reading level, accommodations).** Assessment items developed for California Science Techbook allow all students the ability to demonstrate their disciplinary core knowledge. Math tools such as the scientific calculator, unit converter, and graphing calculator are available for use at all times by students, including in the unit-level performance-based assessment (PBA). The students do not need to access prior experiences to complete the unit assessments and are provided with all necessary text and factual information needed to meet the intent of each item. Summative unit-level performance-based assessments are available in Spanish. For Technology Enhanced Items (TEIs) within each concept, the adaptability of the Discovery Education platform to work with Google Translate allows students to access additional languages beyond Spanish.	**Performance-based Unit Assessment Digital:** Grade 5, Unit 1 Enter Quick Code: ca5071s **Teacher's Guide:** https://tinyurl.com/y3dv67ct  **TEI translated into simplified Chinese using Google Translate.** 

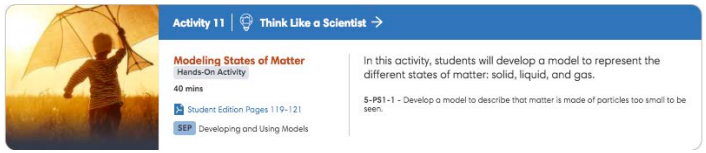
Component	Strengths	Citations
SP5. Quality of use of formative and summative assessments.	**The materials provide self- or peer-assessments that allow students to reflect on and monitor their learning over time.** Students can monitor their progress across a course using the student level dashboard. The dashboard includes color-coded, or traffic light scoring, for each technology-enhanced item found within a concept.  As students progress through concepts, there are many opportunities that are provided for reflection throughout the Student Edition. Teacher embedded notes throughout also guide students to reflect on their new thinking.  	**Peer Conversation** Grade 5, Unit 1, Concept 1.3 **Digital:** Activity 5; Observe Like a Scientist; What is Matter? Enter Quick Code: ca5054s **Print:** TE Pages: Activity 5 p. 179-180 SE Pages: Activity 5 p. 110

Component	Strengths	Citations
SP5. Quality of use of formative and summative assessments.	Additionally, students can reflect on their growth in the development of scientific explanations constructed during the Explain portion of each lesson. Students will learn to increase the rigor and relevance of the evidence embedded within their explanations. The “your ideas” item found in Wonder (Engage) under the Can You Explain (CYE) question allows students to record initial ideas or responses to the questions. Students can compare their initial responses after constructing their explanations in Share (Explain). Students can review and provide feedback to one another throughout.  1.2 | Share What happens to the mass of a substance when it is heated, cooled, or mixed with other substances? Activity 17 Record Evidence Like a Scientist Melting Matter Now that you have learned about changes to matter, look again at the video Let's Investigate Melting Matter. You first saw this in Wonder. Quick Code: ca5045s Video Let's Investigate Melting Matter Talk Together How can you describe melting ice now? How is your explanation different from before? SEP Constructing Explanations and Designing Solutions 94 | Discovery Education	**Explain activity** Grade 5, Unit 1, Concept 1.2 **Digital:** Activity 17; Record Evidence Like a Scientist Enter Quick Code: ca5045s **Print:** TE Pages: Activity 17 p. 152-154 SE Pages: Activity 17 p. 94-96 **Melting Matter** Now that you have learned about changes to matter, look again at the video Let's Investigate Melting Matter. You first saw this in Wonder.  04:07 Let's Investigate Melting Matter

Component	Strengths	Citations
SP5. Quality of use of formative and summative assessments.	The Discovery Education Studio creation tool allows students to create portfolios of their work over a course, unit, or concept. Students can collaborate with other students using the Studio tool, as well as share examples of their work with the teacher and their classmates.  	**Melting Matter** Now that you have learned about changes to **matter**, look again at the video Let's Investigate Melting Matter. You first saw this in Wonder.  **Step by Step Guide to Studio:** https://tinyurl.com/y8rt7us2

<table>
<tr><th>Component</th><th>Strengths</th><th>Citations</th></tr>
<tr>
<td>SP3. Quality of guidance and tools that use a variety of measures.</td>
<td>Hands-On Activities and Hands-On Labs (HOAs and HOLs) provide opportunities for students to demonstrate the science and engineering practices and analyze data to look for evidence of crosscutting concepts. Based on the proficiency of the students, teachers can determine the appropriate amount of scaffolding to provide. Analysis and conclusion questions allow students to reflect on their learning.</td>
<td>
Hands-on Activity
Grade 5, Unit 1, Concept 1.3

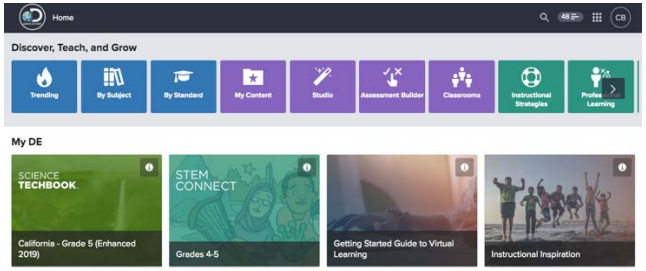
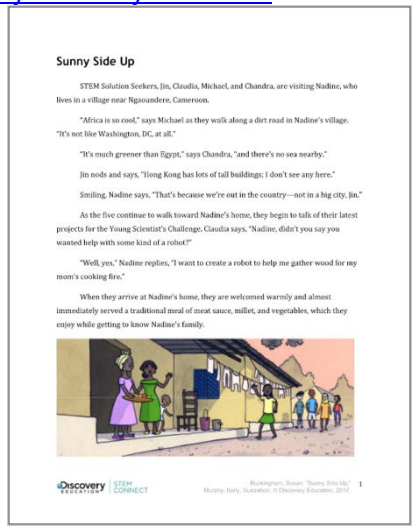
Digital: Activity 11; Think Like a Scientist; What Is the Relationship between Changing States and How a Particle Moves?
Enter Quick Code: ca5060s

Print:
<table>
<tr><td>TE Pages</td><td>SE Pages</td></tr>
<tr><td>Activity 11
p. 193-197</td><td>Activity 11
p. 119-121</td></tr>
</table>


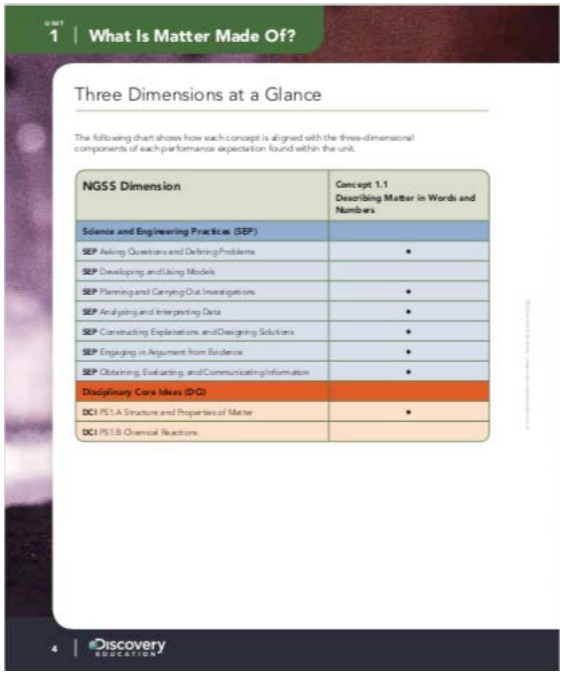
Hands-on Investigation
Grade 5, Unit 1, Concept 1.2

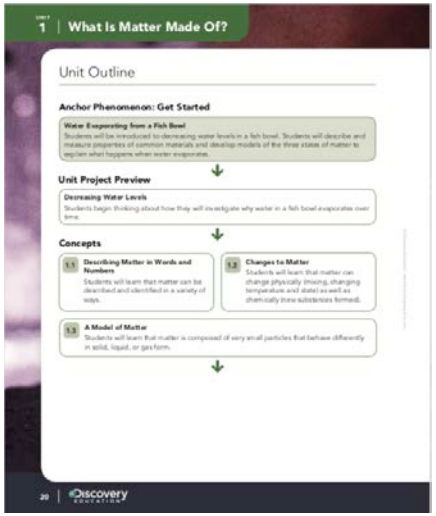
Digital: Activity 13; Investigate Like a Scientist; Hands-On Investigation: How Has It Changed?
Enter Quick Code: ca5041s

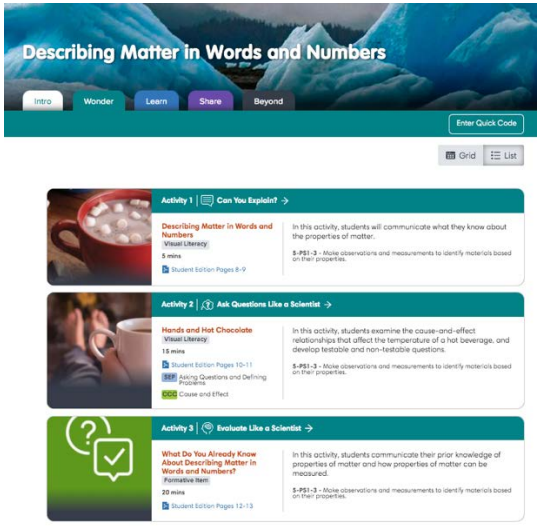
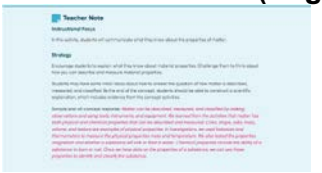
Print:
<table>
<tr><td>TE Pages</td><td>SE Pages</td></tr>
<tr><td>Activity 13
p. 137-143</td><td>Activity 13
p. 84-87</td></tr>
</table>
</td>
</tr>
</table>

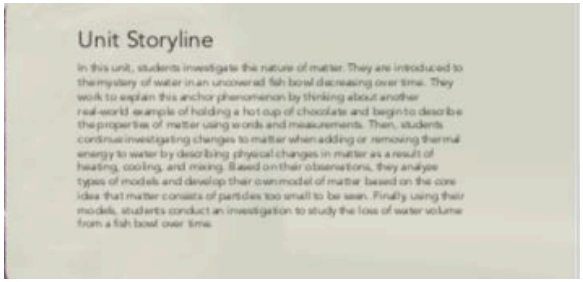
Component	Strengths	Citations
SP3. Quality of guidance and tools that use a variety of measures.	**STEM Connect** projects use an interdisciplinary approach to push students to seek solutions to important real-world challenges such as sustainable farming, water conservation and other environmental critical issues. STEM Connect is built using a 4Cs STEM framework to allow students to develop the 21st-century skills of creativity, critical thinking, communication, and collaboration. Using STEM Connect projects to assess students' science learning provides the teacher with set(s) of tasks so that students can demonstrate their understanding of the same learning goals in multiple ways.	**STEM Connect**  Grade 4-5: Sunny Side Up https://tinyurl.com/ya8oasnm STEM Solution Seekers: Sunny Side Up https://tinyurl.com/yawalmm8 

Designed for CA NGSS: Teacher Support

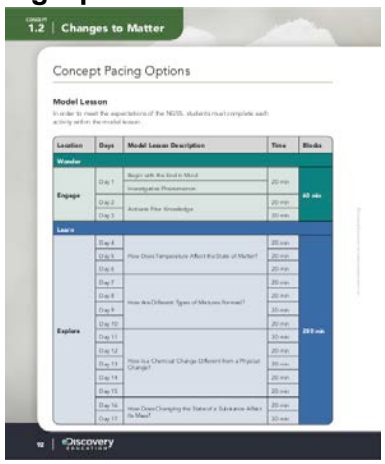
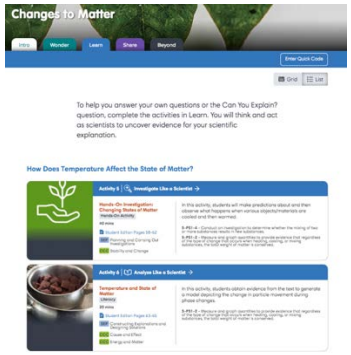
Component	Strengths	Citations
TS1. Phenomena/ problems Driven Three-Dimensional Learning.	**Teacher materials provide background information about the phenomena or problems included in the learning sequence and across sequences provide:** • **an explanation of the role of phenomena or problems in driving student learning.** • **rationale for why the unit phenomena or problems were selected for the targeted DCIs, SEPs, CCCs, and EP&Cs (when applicable).** Anchor and Investigative Phenomena were identified for each unit and concept based on their ability to demonstrate the disciplinary core ideas of the required performance expectations of the instructional segment bundles. Writers of California Science Techbook also considered the age appropriateness of topics to select real-world phenomena that would engage students within each grade level.	**Three Dimensions at a Glance** Grade 5, Unit 1 **Print:** TE Pages Three Dimensions p. 4-7 

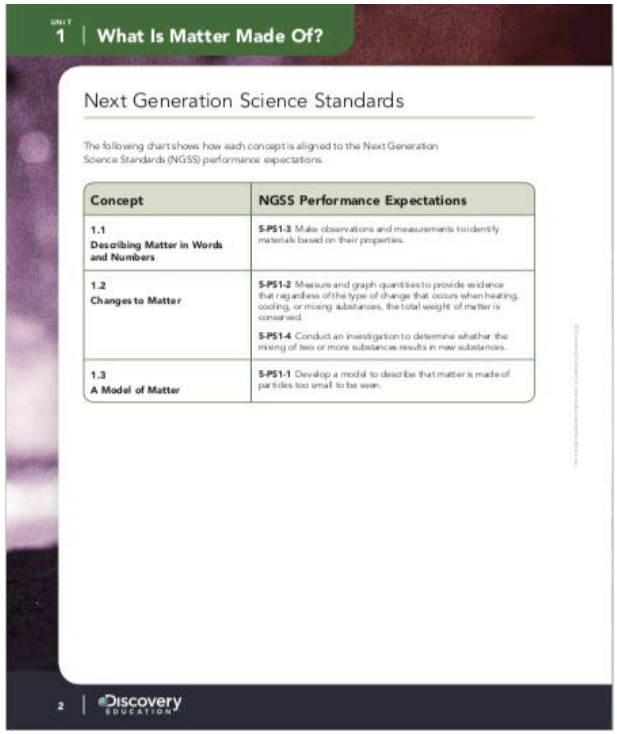
Component	Strengths	Citations
TS1. Phenomena/ problems Driven Three-Dimensional Learning.	**Unit Level Support:** Within each Unit, a real-world anchor phenomenon piques students' curiosity and sets a purpose for learning across concepts. A Unit Project, expects students to return to the anchor phenomenon to summarize learning across the Unit Storyline. In the print Teacher Edition, teachers are provided with several options on how to use the anchor phenomenon to engage students with asking questions and defining problems. Print and digital teacher supports also provide Unit Storylines and conceptual maps as resources of how the concepts build upon one another, related to the Anchor Phenomenon and the Unit Project. The Unit Outline digitally also allows teachers to quickly view the PEs associated with the investigative phenomena for each concept.  	**Anchor Phenomenon** Grade 5, Unit 1 **Digital:** Anchor Phenomenon: Getting Started Enter Quick Code: ca5006s **Print:** TE Pages: Anchor Phenomenon: Getting Started p. 22-23 SE Pages: Anchor Phenomenon: Getting Started p. 2-3 

Component	Strengths	Citations
TS1. Phenomena/ problems Driven Three-Dimensional Learning.	**Concept-Level Support:** Each concept begins with a smaller, real-world investigative phenomenon allowing students to dive into the remainder of content across Wonder, Learn, Share, looking for evidence to explain the investigative phenomenon. Teachers are supported through the use of embedded teacher notes and additional strategies found in the print Teacher Edition. For example, the first teacher note found in Wonder (Engage) provides a strategy to utilize with students. A teacher can use the Can You Explain? question as a frame for learning or can encourage students to develop their own questions to explore within the concept. In California Science Techbook teachers receive additional support through teacher notes. Point-of-use teacher notes within each tab, additional assessments, student misconceptions, background material, and more are visible by turning on the Teacher View toggle. **Teacher Notes:** Teachers notes found in Wonder (Engage) describe how to set up an experience for students to allow the students to generate questions around the investigative phenomena. Teacher notes found within Unit Project in Share (Elaborate) help the teacher structure small groups or prepare materials needed for design activities. These strategies help both the teacher and student focus on the components of the phenomenon related to the associated DCIs for the concept.	**Concept- Investigative Phenomenon** Grade 5, Unit 1, Concept 1.1 **Digital:** https://tinyurl.com/y8ejjeqp **Print:** TE Pages: Concept 1.1: Starts on p. 36 SE Pages: Concept 1.1: Starts on p. 8  **Example Teacher Note: Wonder (Engage)** 

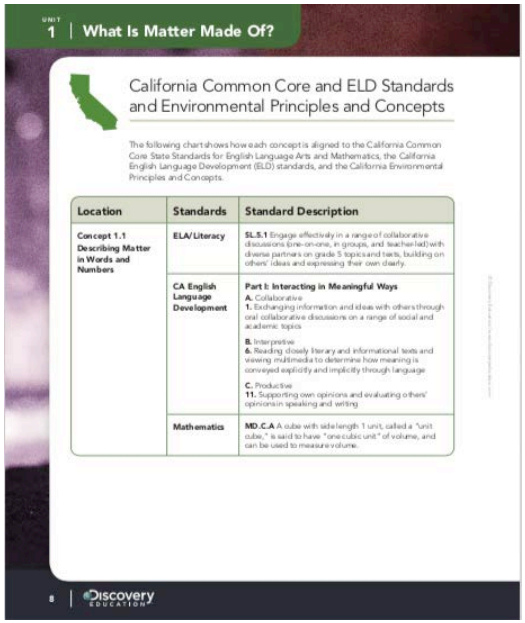
Component	Strengths	Citations
TS1. Phenomena/ problems Driven Three-Dimensional Learning.	**Teacher Guides** Throughout the entire 5E learning cycle, students will be exposed to activities expecting them to generate explanations or solve problems. For the scientific explanation activity found in Share (Explain), as well as all Hands-on Activities, additional detailed teacher guides support teachers in successfully preparing and carrying out the activity with their class. **Three-Dimensional Learning Supports:** California Science Techbook includes several tiers of support to assist teachers with planning three-dimensional learning experiences. Explicit guidance for three-dimensional learning is included throughout the print Teacher Edition and the digital notes. NGSS standard indicators are noted at both the unit and concept level to guide teacher planning. **Unit-Level Support** • Unit Storyline and Outline: includes an overview of the instructional segment • NGSS Chart: PEs listed by concept • Three Dimensions at a Glance Chart: SEP, DCI, and CCC by concept • ELA, ELD, and Mathematics Standards • California EPCs	**Teacher's Guide: Hands-On Investigation** Grade 5, Unit 1, Concept 1.2 **Digital**: Activity 5: Investigate Like a Scientist, Changing States of Matter https://tinyurl.com/y9kg4453 Note: Make sure *Teacher View On* **Teacher Hands-On: Hands-on Activity Video** **Digital**: Activity 5: Investigate Like a Scientist, Changing States of Matter https://tinyurl.com/y9efdavy Note: Make sure *Teacher View On* **Teacher Hands-On Activity Instructional Videos library** **Digital**: https://tinyurl.com/yaaw8bmx **Unit Storyline** Grade 5, Unit 1 **Print:** TE Pages Unit Storyline p. 19  Unit Storyline

Component	Strengths	Citations

TS1. Phenomena/ problems Driven Three-Dimensional Learning.	**Concept-Level Support**
	• Learning Objectives driven by the expectations of the NGSS
	• Days of Instruction:
	  ○ Bolded text highlights the dimensions of the PE addressed during each activity
	  ○ Activity-level SEP and CCC integration
	  ○ Pathways for Learning guidance for a variety of technology settings
	  ○ Teacher reflection questions encourage reflection on students' performance across the three dimensions of NGSS
	  ○ Embedded Teacher Notes describe strategies on how to create a three-dimensional experience for students
	  ○ Differentiation Strategies to support a variety of learners
	
	Concept Pacing Options
	 
	
		Concept- Investigative Phenomenon
		Grade 5, Unit 1, Concept 1.2
		Digital: https://tinyurl.com/y8ejjeqp
		
		Print:
		TE Pages: Concept 1.2: Starts on p. 98
		SE Pages: Concept 1.2: Starts on p. 50
		
		 
		
		Concept Pacing Options
		Grade 5, Unit 1, Concept 1.2
		
		Digital: https://tinyurl.com/y7mbv57a
		Note: Make sure *Teacher View On*
		
		Print:
		TE Pages: Concept 1.2 p. 92

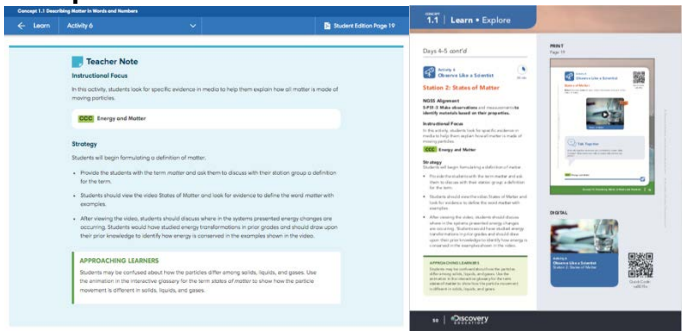
Component	Strengths	Citations
TS2. Coherence.	**Teacher materials describe and provide a rationale for the conceptual framework and sequence of ideas, practices, and learning experiences in the learning sequences and for across sequences:** • **strategies for linking student experiences across lessons to ensure student sense-making and/or problem-solving focused on phenomena or problems is linked to learning across all three dimensions.** • **connections to other science domains, nature of science, engineering, technology, and applications of science, math, ELA, and EP&Cs (when applicable).** California Science Techbook provides for coherence by: • limiting the topics covered to the topics identified in NGSS • arranging experiences so that student understanding grows over the course of the unit. • connecting concepts over the course of the year and from one year to the next. Because the courses in California Science Techbook were designed to address the requirements of NGSS, they include the core ideas, science and engineering practices, and crosscutting concepts that are identified in NGSS for a given grade. California Science Techbook addresses no more and no less than the content specified within NGSS while expanding the time and depth devoted to the core concepts.	**Next Generation Science Standards** Grade 5, Unit 1 **Print:** TE Pages Unit 1 p. 2 

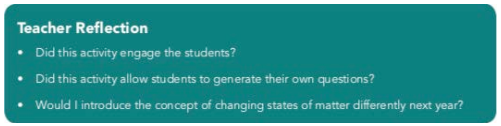
Component	Strengths	Citations
TS2. Coherence.	California Science Techbook provides for coherence by arranging topics so that student understanding grows over the course of a lesson and by connecting ideas from one lesson to another. Each Wonder, Learn, Share (5E) model lesson is designed for multiple sessions. The print Teacher Edition for California Science Techbook supports teachers as they plan their instruction to build upon the appropriate progressions related to all three dimensions of the standards. **Unit Level Support:** **Three Dimensions at a Glance:** Shows how each concept is aligned to the three-dimensional components of the performance expectations found within the unit. **Scope and Sequence:** Includes NGSS learning progression charts indicating the previous and next grade level progression based on the standards for the concept, as well as the unit storylines across the course. **NGSS Overviews:** Provides breakdowns of the performance expectations for the concept, as well as the ELA, ELD, and Math Standards, and California Environmental Principles associated with the Performance Expectation.	**5E Model (Wonder, Learn, Share)** Grade 5 **Print:** TE Pages 5E Model p. xxviii  **Three Dimensions at a Glance** Grade 5, Unit 1 **Print:** TE Pages

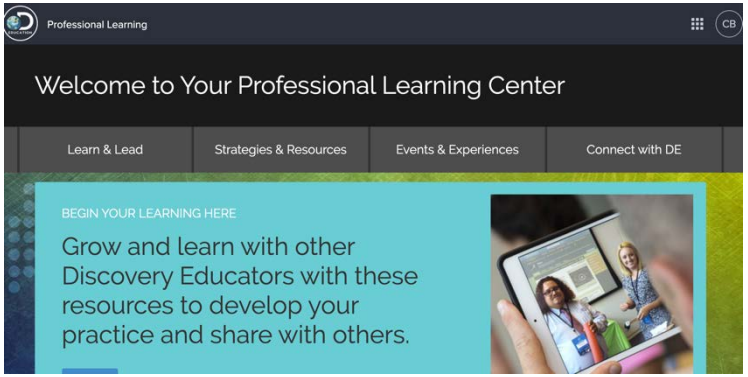
Component	Strengths	Citations
TS2. Coherence.		**Print:** TE Pages Three Dimensions p. 4-7 **Scope and Sequence** Grade 5, Unit 1 **Print:** TE Pages Scope & Sequence overview p. xxxviii-xliii **California Common Core and ELD Standards and Environmental Principles and Concepts** Grade 5, Unit 1 **Print:** TE Pages CCSS, ELD, & EP&Cs p. 8-10

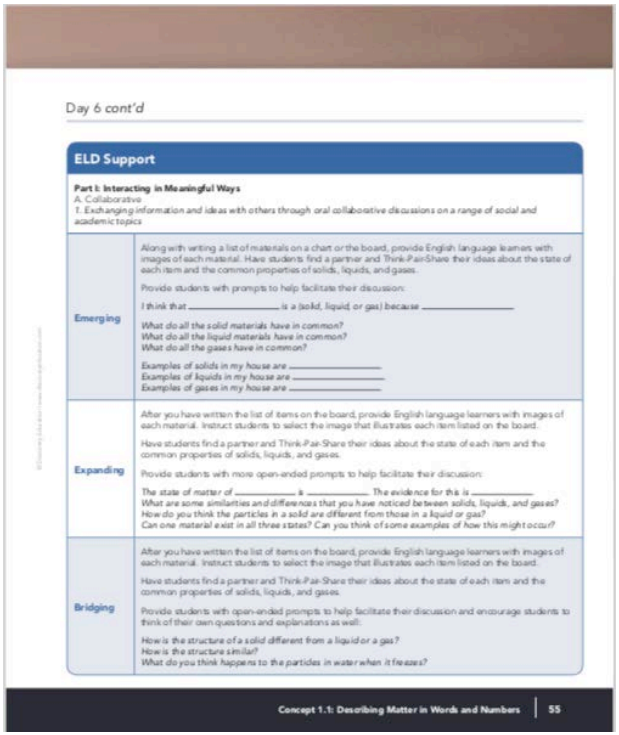
Component	Strengths	Citations
TS2. Coherence.	**Concept Level Support:** Embedded within the teacher strategies for activities, teachers are provided with guidance on appropriate expectations for students' prior knowledge based on the progression of the DCIs within each course. In Hands-on Investigations, support for teachers on how to support students' progression with designing and carrying out investigations includes a scaffolded and open-ended approach.	**Teacher Strategies** Grade 5, Unit 1 **Print:** TE Pages Concept 1.2: Starts on p. 98  CONCEPT 1.2 | Wonder • Engage Day 1 20 min Begin with the End in Mind Concept NGSS Alignment 5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. Day 1: Instructional Focus Students focus on observing and generating questions about phase changes. Activity 1 Can You Explain? 5 min What happens to the mass of a substance when it is heated, cooled, or mixed with other substances? NGSS Alignment 5-PS1-2 Measure and graph quantities to **provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.** 5-PS1-4 Conduct an investigation to determine whether **the mixing of two or more substances results in new substances.** Instructional Focus In this activity, students will communicate what they know about conservation of mass and the behavior of particles with changes to matter. PRINT Page 50 Can You Explain? DIGITAL Activity 1 Can You Explain? Quick Code 98 | Discovery Education

Component	Strengths	Citations
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, sense-making, and problem-solving; challenge student thinking; and develop metacognitive abilities** California Science Techbook digital and print, was designed and developed to meet the needs of students and to provide guidance and flexibility for teachers to use in a variety of classroom settings. **Pacing and At a Glance Guides:** The print Teacher Edition includes pacing guides and flexible pathways for optimal instruction in any instructional setting. The "At a Glance" supports, provide teachers with quick overviews as they prepare for instruction ahead of time. **Days of Instruction:** Instruction is presented in 20-minute segments by day. The NGSS performance expectations for the day are also featured with the specific aspects of each standard covered that day in bold. Daily and Activity Based Instructional Focus statements provide three-dimensional learning targets.	**Concepts at a Glance** Grade 5, Unit 1, Concept 1.1 **Digital:** https://tinyurl.com/y6v2cpkt Note: Make sure *Teacher View On* **Print:** TE Pages Concept 1.1 p. 28-29  **Concept Pacing Options** Grade 5, Unit 1, Concept 1.1 **Digital:** https://tinyurl.com/ybpgvqyf Note: Make sure *Teacher View On* **Print:** TE Pages Concept 1.1 p. 30-31

Component	Strengths	Citations
TS3. Effective Teaching.	**Supporting 21st Century Learners:** Through every step of the learning cycle, California Science Techbook features diverse and rich multimedia resources: video, images, audio, interactives, virtual labs, online models, animations, rich informational text, and more. Marquee Discovery Education content, including MythBusters, Street Science, and Outrageous Acts of Science, blend entertainment with education to motivate students to investigate real-world phenomena. Virtual labs and online models allow students to quickly manipulate variables to test out their ideas in an online environment. Pathway to Learning charts provide options for teachers to deliver three-dimensional instruction in a one to one, blended or print based classroom. **Teacher Notes with Strategies:** Detailed teacher notes, for each activity, make the connection between the high-quality digital assets and activities and the SEPs and CCCs explicit for teachers through instructional guidance. Strategies elicit student thinking and guide teachers in how to design a three-dimensional learning environment. Research-based instructional strategies, such as the Discovery Education Spotlight on Strategies (SOS), promote scientific discourse around the investigative and anchor phenomenon. SEP and CCC indicators are included for activities found in each day of instruction in the both print and digital.	**Teacher Notes and Strategies** Grade 5, Unit 1, Concept 1.1 **Digital:** https://tinyurl.com/te2dall Note: Make sure *Teacher View On* **Print:** TE Pages Activity 6 p. 50 **Example Teacher Notes**  **Spotlight on Strategies** **Digital:** https://tinyurl.com/y62cg28n

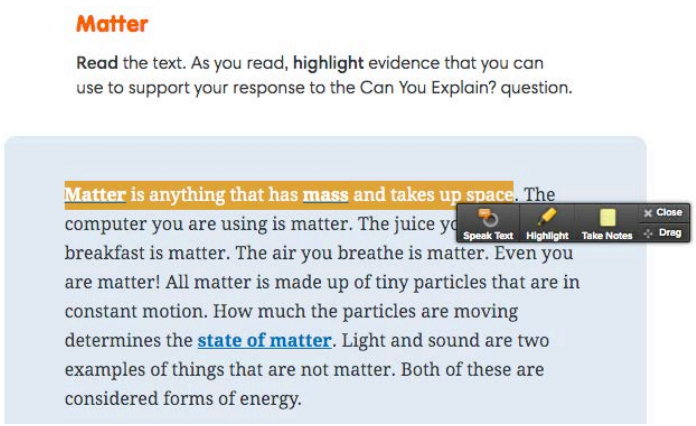
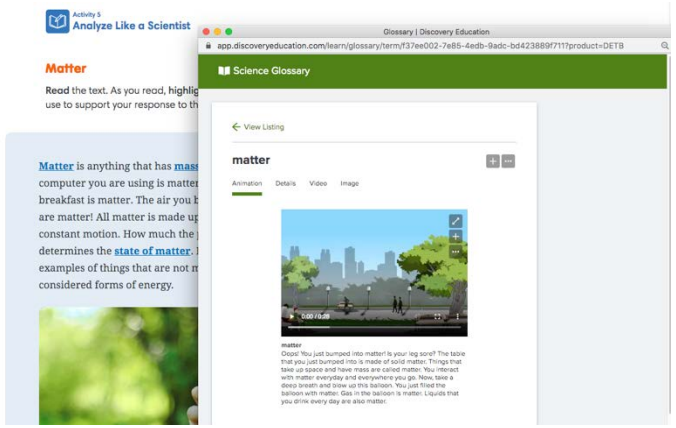
Component	Strengths	Citations
TS3. Effective Teaching.	**Activities:** Activity Type headers allow teachers and students to quickly identify opportunities for asking questions related to the phenomenon, communicating sensemaking, and solving problems. • **Ask Questions Like a Scientist:** Students are presented with the investigative phenomenon and expected to generate their own questions to drive their learning in Learn/Explore. • **Observe Like a Scientist:** Students utilize scientific discourse around "Talk Together" questions to communicate their sensemaking. • **Record Evidence Like a Scientist:** Students reason through the evidence they have collected in Learn/Explore to construct and communicate a scientific explanation to one of their own driving questions or the Can You Explain question. • **Design Solutions Like a Scientist:** Students are presented with design challenges and expected to research, design, test and propose solutions. **Teacher Reflection Questions:** Throughout each concept, professional learning questions encourage teachers to consider how activities have developed SEP and CCC proficiency with their students and how they may modify the activity to better meet the needs of their students.	**Activity Types** Grade 5 **Print:** TE Pages Activity Types p. xxix  Instructional Pathways Activity Types in Wonder, Learn, and Share Icon | Student Edition Label | Activity Description **Teacher Reflection questions** Grade 5, Unit 1, Concept 1.2 **Print:** TE Pages Activity 2 p. 102  Teacher Reflection • Did this activity engage the students? • Did this activity allow students to generate their own questions? • Would I introduce the concept of changing states of matter differently next year?

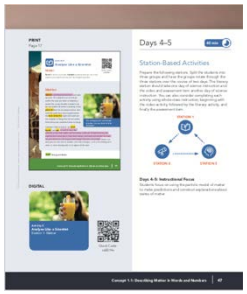
Component	Strengths	Citations
TS3. Effective Teaching.	**Quick Digital Access:** Throughout the print Student and Teacher Editions, QR Codes and short links indicate opportunities to deepen learning through rich media and/or allow students to access content in a blended print and digital environment. **Professional Learning Center:** The Professional Learning Center in California Science Techbook is an additional deep and rich resource for teachers to participate in interactive courses, see other Discovery Education teachers' classrooms, and access the online DEN community. The DEN online community is a global platform where teachers can learn, share, and connect with other educators.  	**Quick Access from Print** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages: Activity 12, p. 65 SE Pages: Activity 12, p. 31 **QR and Quick Code in Student Edition**  **Professional Learning Center Digital:** https://teachers.discoveryeducation.com/

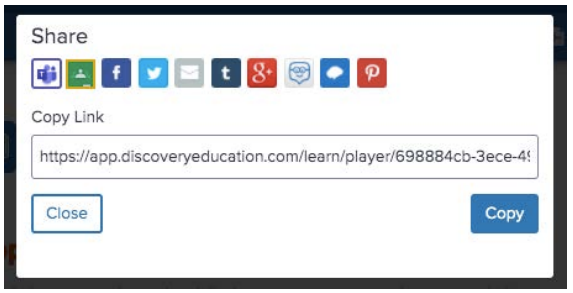
Component	Strengths	Citations
TS4. Support for Students with Diverse Learning Needs.	**Teacher materials provide an array of strategies:** • **to support student access to the targeted learning goals, experiences, and performances.** • **that help teachers differentiate instruction.** California Science Techbook California allows teachers to differentiate instruction, degrees of readiness, and interests and offers resources to help vary content, process, product, and learning environment through the core instructional pathway. **Content-Specific Differentiation Strategies:** Within the Print Teacher Edition and Digital Teacher notes, teachers are provided with differentiation strategies, including scaffolded support for English language learners, struggling students, and advanced students, specific to the concept and that include reference to the use of multimedia assets. These differentiation strategies are provided at point of use. **Student Interactive Worktext Tools:** • Text read-aloud features • Lexile and language options • Highlighting and note-taking • Interactive glossary	**ELD Support** Grade 5, Unit 1, Concept 1.1 **Digital:** Activity 8 Enter Quick Code: ca5006s Note: Make sure *Teacher View On* **Print:** TE Pages Activity 8 p. 55  Day 6 cont'd ELD Support Part I: Interacting in Meaningful Ways A. Collaborative 1. Exchanging information and ideas with others through oral collaborative discussions on a range of social and academic topics Emerging Along with writing a list of materials on a chart or the board, provide English language learners with images of each material. Have students find a partner and Think-Pair-Share their ideas about the state of each item and the common properties of solids, liquids, and gases. Provide students with prompts to help facilitate their discussion: I think that _____ is a (solid, liquid, or gas) because _____ What do all the solid materials have in common? What do all the liquid materials have in common? What do all the gases have in common? Examples of solids in my house are _____ Examples of liquids in my house are _____ Examples of gases in my house are _____ Expanding After you have written the list of items on the board, provide English language learners with images of each material. Instruct students to select the image that illustrates each item listed on the board. Have students find a partner and Think-Pair-Share their ideas about the state of each item and the common properties of solids, liquids, and gases. Provide students with more open-ended prompts to help facilitate their discussion: The state of matter of _____ is _____. The evidence for this is _____ What are some similarities and differences that you have noticed between solids, liquids, and gases? How do you think the particles in a solid are different from those in a liquid or gas? Can one material exist in all three states? Can you think of some examples of how this might occur? Bridging After you have written the list of items on the board, provide English language learners with images of each material. Instruct students to select the image that illustrates each item listed on the board. Have students find a partner and Think-Pair-Share their ideas about the state of each item and the common properties of solids, liquids, and gases. Provide students with open-ended prompts to help facilitate their discussion and encourage students to think of their own questions and explanations as well: How is the structure of a solid different from a liquid or a gas? How is the structure similar? What do you think happens to the particles in water when it freezes? Concept 1.1: Describing Matter in Words and Numbers | 55

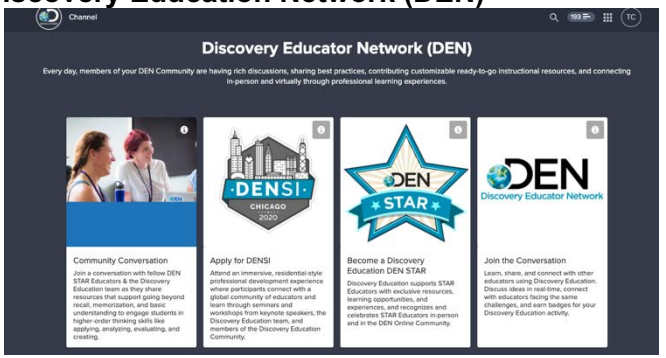
Component	Strengths	Citations
TS4. Support for Students with Diverse Learning Needs.		**Differentiation Strategies** Grade 5, Unit 1, Concept 1.1 **Digital:** Activity 10 Enter Quick Code: ca5019s Note: Make sure *Teacher View On* **Print:** TE Pages Activity 10 p. 62 **Student Misconceptions** Grade 5, Unit 1, Concept 1.1 **Digital:** Activity 17 Enter Quick Code: ca5016s Note: Make sure *Teacher View On* **Print:** TE Pages Activity 7 p. 52 **Interactive Worktext Tools** Grade 5, Unit 1, Concept 1.1 **Digital:** Activity 5 Enter Quick Code: ca5014s

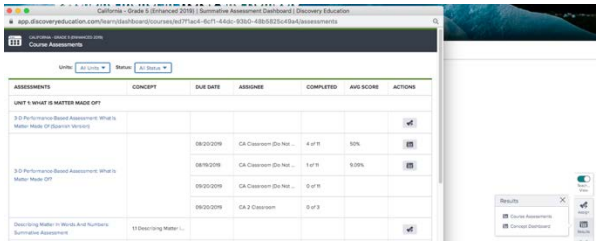
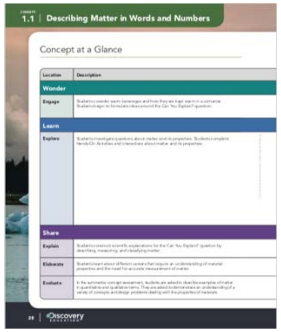
DISCOVERY EDUCATION NGSS TIME RESPONSE **Grade 5**

Component	Strengths	Citations
TS4. Support for Students with Diverse Learning Needs.	**Speak Text, Highlight, and Take Note example**  **Reading Level A & B and Spanish language option example** 	**Interactive Glossary, Print Glossary and Flashcards** Grade 5, Unit 1, Concept 1.1 **Digital:** Activity 10 Enter Quick Code: ca5019s **Print:** TE Pages: Glossary p. R25 SE Pages: Glossary p. R23 Vocabulary Flash Cards p. R7 

Component	Strengths	Citations
TS4. Support for Students with Diverse Learning Needs.	**Accommodate the differences in learners through student-centered instruction:** Features such as high-quality graphics and videos, game play, virtual labs, and robust STEM challenges motivate students to think deeply about topics that are traditionally taught through direct instruction, encouraging student-centered instruction and supporting teachers as learning facilitators. **Stress the collectivity of interactions as well as individuality:** Throughout California Science Techbook, learning experiences are designed for student collaboration and individual exploration. Hands-On Activities, Talk Together and STEM Project Starters provide opportunities for students to work together, while technology enhanced items encourage individual accountability. California Science Techbook seamlessly incorporates Universal Design for Learning (UDL) principles, so students can access and create content and communicate their ideas using multiple means of representation. **Expansive Content to Reach All Learners:** The Beyond tab provides a variety of additional resources that can be used to differentiate by accelerating or remediating as needed. These related resources include the following: videos, Lexile-leveled reading passages, virtual labs, and editable Hands-on Activities/Labs.	**Station-Based Activities** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages: Activity 4, p. 47  **Peer Conversation** Grade 5, Unit 1, Concept 1.3 **Digital:** Activity 5; Observe Like a Scientist; What is Matter? Enter Quick Code: ca5054s **Print:** TE Pages: Activity 5, p. 179-180 SE Pages: Activity 5, p. 110 **Beyond tab** Grade 5, Unit 1, Concept 1.1 **Digital**: https://tinyurl.com/yc6jaaem

Component	Strengths	Citations
TS4. Support for Students with Diverse Learning Needs.	Discovery Education's Experience resource, which is also part of the adoption package, provides a repository of K–12, cross-curricular resources that can be used to differentiate and enhance learning for all students in the science classroom. **Assigning Features:** Teachers can tailor instruction and meet the needs of all students by assigning appropriate content based on specific learning preferences or developmental needs. In California Science Techbook teachers can quickly assign and share instructional resources to individual students, groups of students, or the entire class. Using the Share feature, teachers can also use Google Classroom to assign Science Techbook activities and media to students. **Modalities for Learning:** Although many students prefer to consume content in a digital manner, often a print-based experience can be more effective in helping them solidify content knowledge. California Science Techbook provides flexibility for teachers to select the most appropriate mode of delivery of content for students. • **Print Student Edition:** The student consumable worktext is available for all students, Grades K-8, in both English and authentic Spanish. • **Print Accessibility:** Within the toolbar in the digital Science Techbook, teachers can print a page or the entire concept with one click of a button.	**Discovery Education Experience** **Digital:** https://tinyurl.com/yxms7kjl **Assign feature** **Digital:** https://tinyurl.com/y7og28g6  **Literacy and Pathways to Learning** Grade 5, Unit 1, Concept 1.1 **Digital:** https://tinyurl.com/ybpgvqyf Note: Make sure *Teacher View On* **Print:** TE Pages Concept 1.1 p. 32

Component	Strengths	Citations
TS4. Support for Students with Diverse Learning Needs.	• **Pathways for Learning:** Suggestions on how to utilize digital assets in a paper-based, blended, and fully digital classroom environment are provided for each concept in the print TE. **Professional Learning:** Teacher professional learning is bundled in the California Science Techbook program. The face-to-face and job-embedded professional learning sessions focus on getting started with and using the resources to meet the needs of all students through effective, differentiated instruction. These sessions also utilize the Spotlight on Strategies that are available in the Discovery Education Experience. These SOS are created by teachers, for teachers and now also include videos specifically for students on how they, too, can incorporate these strategies into their learning.	**Professional Learning Center** **Digital:** https://teachers.discoveryeducation.com/ **Discovery Education Network (DEN)**  **Digital:** http://bit.ly/2PtnYVN

Component	Strengths	Citations
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.** Teachers can easily monitor student progress in California Science Techbook through different modalities of instruction, such as Hands-on Investigations, Interactives and Technology Enhanced Items embedded within the Wonder, Learn, Share (5-E) learning cycle at point of use. Teachers can easily view the formative assessment opportunities in each concept by reviewing the Concept at a Glance information in the print Teacher Edition. Summative Unit level Assessments can be located in the digital program under the Unit Resources tab. These assessments are CAST-like in that they mirror the state assessment in format, task type and content, including questions that utilize at a minimum 2 of the 3 dimensions. The assessments items are launched through an engaging real-world application and require students to apply new content understanding. Teachers can access course level assessment results from the Results Navigation bar on the right side. 	**Concept at a Glance** Grade 5, Unit 1, Concept 1.1 **Digital:** https://tinyurl.com/y6v2cpkt Note: Make sure *Teacher View On* **Print:** TE Pages Concept 1.1 p. 28-29  **Summative Unit Assessment** Grade 5, Unit 1 **Digital:** Enter Quick Code: ca5071s **Print:** TE Pages Performance-Based Assessment P. 216 **Teacher's Guide**: https://tinyurl.com/y3dv67ct

Component	Strengths	Citations
TS5. Support to Monitor Student Progress.	**Dashboard:** Teachers are equipped with a Dashboard on the right-hand side of the screen that shows all student answers to responses from the Technology Enhanced Items (TEIs) embedded in the Interactive Student Worktext. Throughout the learning progression, each tab of each concept includes Technology Enhanced Items that have students connect to what they already know about the topic (Wonder), and then as they progress, to monitor what they do learn as they explore and learn through a variety of multimodal resources (Wonder, Learn, Share). Students receive feedback on their knowledge, and the teacher has real-time access to this data in the Dashboard. This real-time data allows teachers to remediate and differentiate as needed in order to help students develop metacognitive abilities. Based on this real-time data, teachers can then make decisions about the needs of each student and select an appropriate instructional resource within the concept to meet the students' needs. Discovery Education Experience resources deepen the pool of assets that can be assigned to students. In addition to the full Dashboard, teachers have a Results View for all individual Technology Enhanced items at point of use as well. **Builder Tools:** Assessment Builder and Studio give teachers flexibility to create customized assessments.	**Video of Dashboard functionality:** https://tinyurl.com/y4chmhbz **Step by Step Guide to Assessment Builder:** https://tinyurl.com/y5r2465g **Step by Step Guide to Studio:** https://tinyurl.com/y8rt7us2

Designed for CA NGSS: Student Work

<table>
<tr><th>Component</th><th>Strengths</th><th>Citations</th></tr>
<tr>
<td>SW1. Quality of opportunities to explain phenomena/ solve problems.</td>
<td>
Materials provide anchoring and investigative phenomena/problems that:

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

Phenomena/Problems
The Unit Pages provide students direct access to the real world, relevant, Anchor Phenomena for the unit, as well as Investigative Phenomena for each concept found in the unit. The Unit pages are available both in print and digital. Students are engaged in real-world, often local and relatable phenomena using video, imagery, hands-on experiences, and other modalities.

As students move through the learning progression, the Anchor Phenomenon is connected to concept Investigative Phenomena, which will drive student explorations using the SEPs through the lens of the CCCs and wrap up with a real-world, relevant STEM Unit Project directly related to the anchor phenomenon. Students are encouraged to write their own questions, but phenomena are also paired with guided questions for scaffolding when appropriate.
</td>
<td>
Grade 5: Unit 1: What Is Matter Made Of?
Unit Page: Anchor Phenomenon
Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Anchor Phenomenon p. 22</td><td>Anchor Phenomenon p. 2-3</td></tr>
</table>
Digital:
Enter Quick Code: ca5006s

Investigative Phenomenon
Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Concept 1.1: Hands and Hot Chocolate p. 38-40</td><td>Concept 1.1: Hands and Hot Chocolate p. 10-11</td></tr>
</table>
Digital:
Enter Quick Code: ca5011s

Unit Project
Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Unit 1 – Unit Project: Decreasing Water Levels p. 212-215</td><td>Unit 1 – Unit Project: Decreasing Water Levels p. 136-139</td></tr>
</table>
Digital:
Enter Quick Code: ca5068s
</td>
</tr>
</table>

Component	Strengths	Citations
SW1. Quality of opportunities to explain phenomena/ solve problems.	These questions serve as the purpose for learning in the concept and the prompt for students to construct a formal scientific explanation in Share/Explain using scientifically accurate evidence from the activities in Learn/Explore. The Phenomena and the STEM Unit Projects feature real world engaging connections to student's daily lives, homes and communities and/or culture. Examples of these projects range from noticing water evaporating in a fish bowl to designing a water filtration device to reduce water pollution. At the end of each Unit is a performance- based Unit Assessment, found in the Unit Resource tab in the digital program. These CAST-like assessments are rooted in real world, local or relatable anchor phenomena. Students are asked to apply understanding and three-dimensional learning to complete the task items.	**Performance-Based Unit Assessment** Grade 5, Unit 1 **Digital:** Enter Quick Code: ca5071s **Print:** TE Pages Performance-Based Assessment P. 216 **Teacher's Guide**: https://tinyurl.com/y3dv67ct

Component	Strengths	Citations
SW2. Quality of building a three-dimensional conceptual framework.	**Materials include learning experiences that help students build scientifically accurate understandings and abilities through opportunities for students to:** • **Link prior knowledge negotiated new understanding and abilities.** • **Do work that approximates the nature of science** • **Use reasoning to connect grade appropriate SEP, DCI, and CCC elements and EP&C's (when applicable).** • **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** **Wonder/Engage:** In California Science Techbook, the Wonder (Engage) section provides phenomena-driven or problem- based learning experiences as catalysts for the inquiry process, triggering students' natural sense of curiosity and wonder. Students are challenged to describe real- world phenomena and to develop questions around these phenomena through Can You Explain? questions. Technology Enhanced Items (TEIs) help students show what they already know about a concept, including their preconceptions and misconceptions.	**Wonder: Can You Explain** Grade 5, Unit 1, Concept 1.2 **Digital:** Enter Quick Code: ca5029s **Print:** TE Pages: Activity 1: Can You Explain p. 98-99 SE Pages: Activity 1: Can You Explain p. 50  1.2 | Wonder • Engage Day 1 Begin with the End in Mind Concept NGSS Alignment Activity 1 Can You Explain? What happens to the mass of a substance when it is heated, cooled, or mixed with other substances? PRINT DIGITAL 98 | Discovery Education

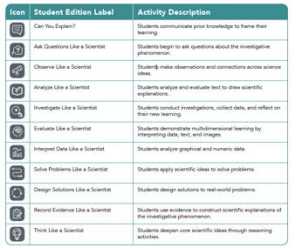
<table>
<tr><th>Component</th><th>Strengths</th><th>Citations</th></tr>
<tr>
<td>SW2. Quality of building a three-dimensional conceptual framework.</td>
<td>Learn/Explore:
Providing the majority of the robust scientific content, the Learn (Explore) section features text and resources that help students test predictions, collect evidence, and record observations and ideas. Learn also contains engaging Interactives and Hands-On Activities that check for understanding and provides opportunities for students to apply what they have learned.</td>
<td>Learn: Hands-On Investigation and Online Interactive
Hands-On Investigation
Grade 5, Unit 1, Concept 1.2
Digital:
Enter Quick Code: ca5033s

Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Activity 5: Hands-On Investigation
p. 98-99</td><td>Activity 5: Hands-On Investigation
p. 58-62</td></tr>
</table>
Online Interactive
Grade 5, Unit 1, Concept 1.2
Digital: Activity 12; Observe Like a Scientist; Chemical Changes in Matter
Enter Quick Code: ca5040s

Teacher’s Guide: https://tinyurl.com/yd5hsngn
Student’s Worksheet: https://tinyurl.com/ya9497sq

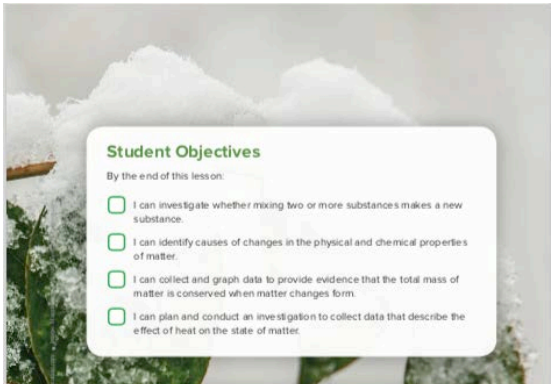
Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Activity 12: Observe Like a Scientist
p. 134-136</td><td>Activity 12: Observe Like a Scientist
p. 82-83</td></tr>
</table>
Beyond tab – Additional Interactives and Resources: Digital: https://tinyurl.com/yczofyda</td>
</tr>
</table>

<table>
<tr><th>Component</th><th>Strengths</th><th>Citations</th></tr>
<tr>
<td>SW2. Quality of building a three-dimensional conceptual framework.</td>
<td>
Share/Explain:
This section encourages students to verbalize and demonstrate their conceptual understanding, new skills, and behaviors by constructing a scientific explanation related to the Can You Explain? question first posed in Wonder.
Share/Elaborate and Evaluate:
By presenting opportunities for critical thinking, exploration, and summative assessments, the Share (Elaborate) section connects STEM skills to real-world problems. Share with STEM is divided into two sections: STEM in Action and STEM Project Starters. Please note that STEM Connect is also part of the Discovery Education Comprehensive Science Program. STEM Connect includes real-world projects through a Challenge, Design, and Solve model of problem-solving.

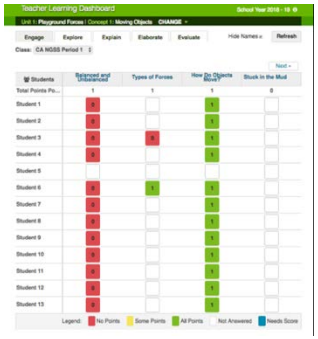
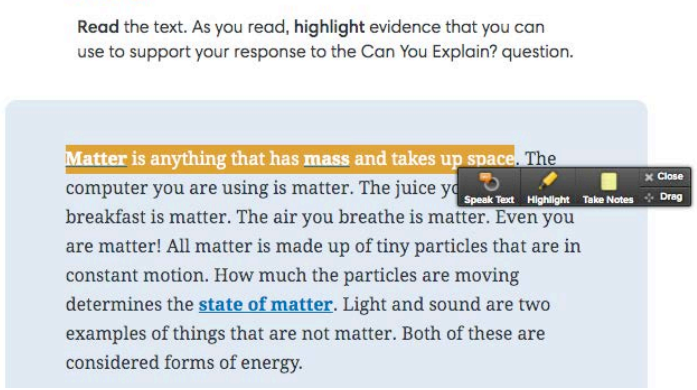
Activity Types
There are various activity types, found within the model of Wonder/Learn/Share. These activities help students recognize opportunities to apply specific SEPs with DCI and CCC for three-dimensional learning.
Activity Types in Wonder, Learn, and Share

<table>
<tr><th>Icon</th><th>Student Edition Label</th><th>Activity Description</th></tr>
<tr><td></td><td>Can You Explain?</td><td>Students communicate prior knowledge to frame their learning.</td></tr>
<tr><td></td><td>Ask Questions Like a Scientist</td><td>Students begin to ask questions about the investigative phenomenon.</td></tr>
<tr><td></td><td>Observe Like a Scientist</td><td>Students make observations and connections across science ideas.</td></tr>
<tr><td></td><td>Analyze Like a Scientist</td><td>Students analyze and evaluate text to draw scientific explanations.</td></tr>
<tr><td></td><td>Investigate Like a Scientist</td><td>Students conduct investigations, collect data, and reflect on their new learning.</td></tr>
<tr><td></td><td>Evaluate Like a Scientist</td><td>Students demonstrate multidimensional learning by interpreting data, text, and images.</td></tr>
<tr><td></td><td>Interpret Data Like a Scientist</td><td>Students analyze graphical and numeric data.</td></tr>
<tr><td></td><td>Solve Problems Like a Scientist</td><td>Students apply scientific ideas to solve problems.</td></tr>
<tr><td></td><td>Design Solutions Like a Scientist</td><td>Students design solutions to real-world problems.</td></tr>
<tr><td></td><td>Record Evidence Like a Scientist</td><td>Students use evidence to construct scientific explanations of the investigative phenomenon.</td></tr>
<tr><td></td><td>Think Like a Scientist</td><td>Students deepen core scientific ideas through reasoning activities.</td></tr>
</table>
</td>
<td>
Share: Record Evidence
Grade 5, Unit 1, Concept 1.2
Digital:
Enter Quick Code: ca5045s
Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Activity 17: Record Evidence Like a Scientist
p. 152-154</td><td>Activity 17: Record Evidence Like a Scientist
p. 94-96</td></tr>
</table>
Share: STEM Project
STEM in Action
Grade 5, Unit 1, Concept 1.2
Digital:
Enter Quick Code: ca5046s
Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Activity 18: Analyze Like a Scientist
p. 156-158</td><td>Activity 18: Analyze Like a Scientist
p. 97-98</td></tr>
</table>
STEM Project Starter
Grade 5, Unit 1, Concept 1.2
Digital: Extension 1 https://tinyurl.com/yag4lf5m

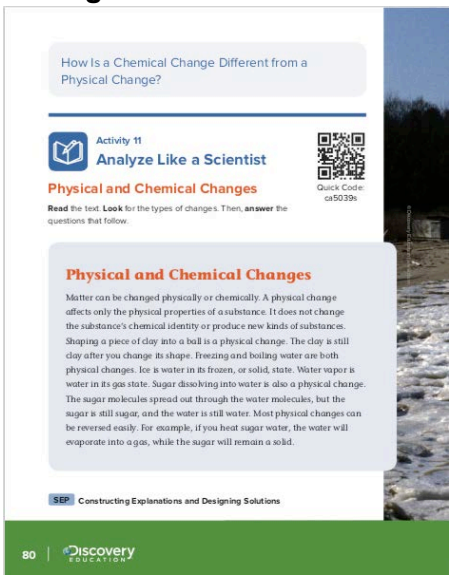
Activity Types
Grade 5
Print:
<table>
<tr><th>TE Pages</th></tr>
<tr><td>p. xxix</td></tr>
</table>
</td>
</tr>
</table>

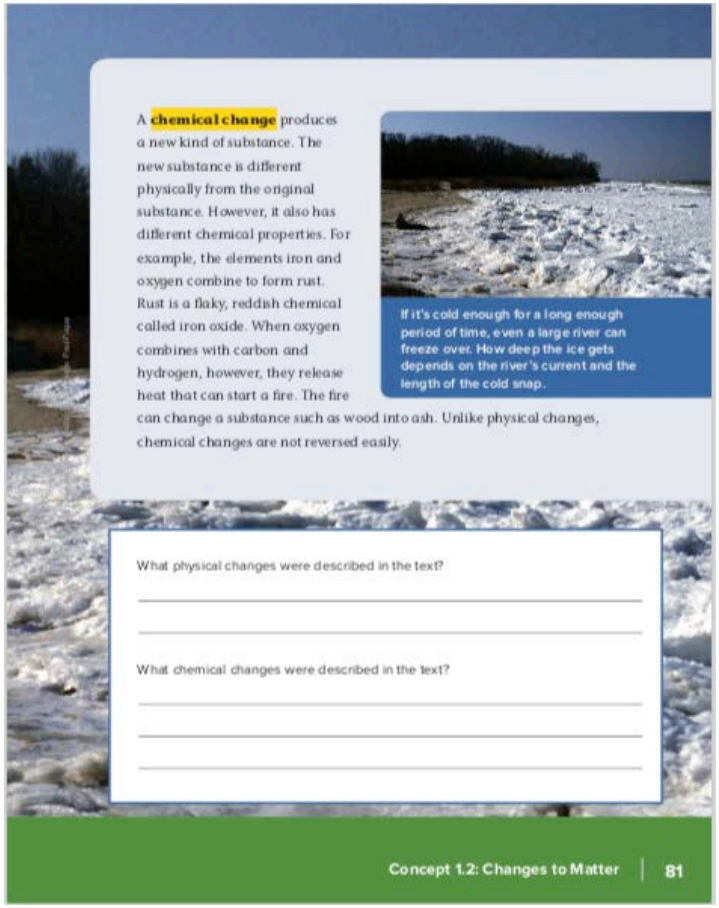
Component	Strengths	Citations
SW3. Quality of leveraging student prior knowledge and experiences.	**Materials leverage students' prior knowledge and experiences to motivate student learning in ways that:** • **make visible students' prior knowledge and experiences related to the anchoring and investigative phenomena/ problems and relevant SEPs, DCIs, and CCCs and EP&Cs (when applicable).** • **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.** The Wonder (Engage) section of each concept includes Technology Enhanced Items that have students identify what they already know about the topic. They receive feedback on their current knowledge, and the teacher has real-time access to this data in the Dashboard. Each concept also includes initial thoughts and ideas that might support the guiding question; this will appear at the bottom of the Wonder (Engage) page in the digital Techbook where it says "Can You Explain?" Students use resources such as hands-on activities, images, songs, interactives, glossary animations, reading passages, and the Core Interactive Text to answer "Can You Explain" questions. They will keep track of their evidence using both print and digital supports in crafting their scientific explanations in each concept and can revisit their answer in their personal dashboard.	**Wonder: Activate Prior Knowledge** Grade 5, Unit 1, Concept 1.2 **Digital:** Enter Quick Code: ca5032s **Print:** TE Pages: Activity 4: Evaluate Like a Scientist p. 105-107 SE Pages: Activity 4: Evaluate Like a Scientist p. 56-57 

Component	Strengths	Citations
SW4. Quality of providing experiences that develop metacognition.	**Materials include learning experiences for students to:** • **Set and monitor their learning in light of the targeted learning goals** • **Consider, overtime, what and how they have learned across the three dimensions** • **Articulate how the three dimensions helped them figure out anchor and investigative phenomena/solve problems** **Monitoring Student Progress & Metacognition** Teachers are equipped with a Dashboard on the right-hand side of the screen that shows all student answers to responses from the Technology Enhanced Items (TEIs) embedded in the Student Interactive Worktext. Throughout the learning progression, each tab of each concept includes Technology Enhanced Items that have students connect to what they already know about the topic (Wonder), and then as they progress, to monitor what they do learn as they explore and learn through a variety of multimodal resources (Wonder, Learn, Share). They receive feedback on their knowledge, and the teacher has real-time access to this data in the Dashboard. This real- time data allows teachers to remediate and differentiate as needed in order to help students develop metacognitive abilities.	**Concept Level Student Objectives** Grade 5, Unit 1, Concept 1.2 **Digital:** Enter Quick Code: ca5067s **Print:** TE Pages: Concept Objectives p. 87 SE Pages: Student Objectives p. 49 

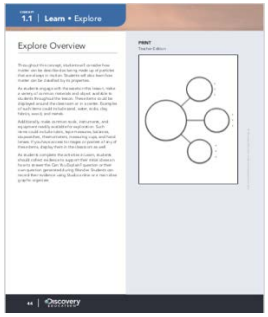
Component	Strengths	Citations

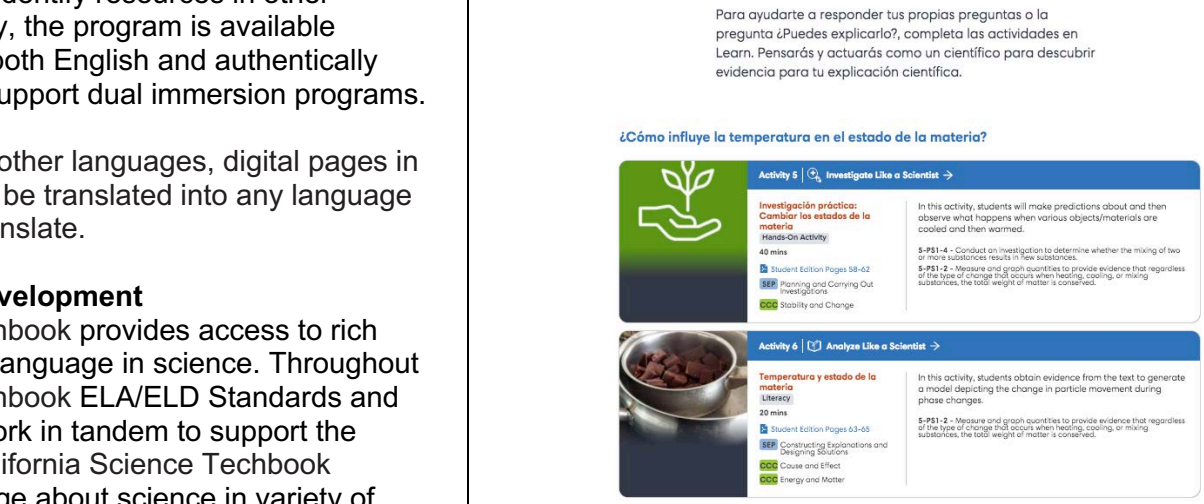
SW4. Quality of providing experiences that develop metacognition.	Each Concept includes initial thoughts and ideas that might support the guiding question; this will appear at the bottom of the Wonder (Engage) page in the digital program, “Can You Explain?”. Students are encouraged to think about what they know, how they know it and what they would like to learn more about. They do this by applying their learning across the three dimensions and revisit this learning at the end of the Concept. Their new learning is then linked to confirming or modifying their initial understanding of Anchor Phenomena from the Unit launch. Students use resources such as hands-on activities, images, songs, interactives, glossary animations, reading passages, and the Core Interactive Text to answer “Can You Explain” questions. They will keep track of their evidence using both print and digital supports in crafting their scientific explanations in each concept and can revisit their answer in their personal dashboard. **Tools for All Types of Learners:** Students can annotate text using highlighting and notes. These annotations remain at point of use for students and are automatically populated in a Notebook that students can use for reflections and for reviewing their learning. Studio is an excellent tool that also provides an opportunity for students to demonstrate learning and revisit as they move through learning progression. Templates are provided related to constructing explanations and carrying out investigations.	**Video of Dashboard functionality:** https://tinyurl.com/y4chmhbz  **Interactive Worktext Tools** Grade 5, Unit 1, Concept 1.1 **Digital:** Activity 5 Enter Quick Code: ca5014s **Speak Text, Highlight, and Take Note example**  **Step by Step Guide to Studio:** https://tinyurl.com/y8rt7us2

Component	Strengths	Citations
SW5. Quality of providing 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 that support all students.** • **opportunities to cultivate interest and confidence as scientists and engineers for all students.** California Science Techbook Program offers access to best-in-class content that meets instructional goals, inspires student engagement, and reflects the diversity of the students served. With California Science Techbook all students have full access to a robust science curriculum. **Reading Comprehension** Students interact with text, produce text, participate in discussions, and engage in research for the primary purpose of building their reading comprehension skills. Discovery Education's digital resources were expertly crafted with tools and opportunities to support all types of learners to make meaning of informational text. Multiple forms of representation, including language alternatives; dual reading levels; and the	**Reading Comprehension** Grade 5, Unit 1, Concept 1.2 **Digital:** Enter Quick Code: ca5039s **Print:** TE Pages: Activity 11: Analyze Like a Scientist p. 132-133 SE Pages: Activity 11: Analyze Like a Scientist p. 80-81 **Reading Passage – Student Edition**  How Is a Chemical Change Different from a Physical Change? Activity 11 Analyze Like a Scientist Physical and Chemical Changes Quick Code: ca5039s Read the text. Look for the types of changes. Then, answer the questions that follow. Physical and Chemical Changes Matter can be changed physically or chemically. A physical change affects only the physical properties of a substance. It does not change the substance's chemical identity or produce new kinds of substances. Shaping a piece of clay into a ball is a physical change. The clay is still clay after you change its shape. Freezing and boiling water are both physical changes. Ice is water in its frozen, or solid, state. Water vapor is water in its gas state. Sugar dissolving into water is also a physical change. The sugar molecules spread out through the water molecules, but the sugar is still sugar, and the water is still water. Most physical changes can be reversed easily. For example, if you heat sugar water, the water will evaporate into a gas, while the sugar will remain a solid. SEP Constructing Explanations and Designing Solutions 80 | Discovery Education

Component	Strengths	Citations
SW5. Quality of providing equitable learning opportunities.	complementary use of images, videos, and audio, build students' background knowledge and strengthen their comprehension.	

Component	Strengths	Citations

SW5. Quality of providing equitable learning opportunities.	California Science Techbook provides a wide array of graphic organizers and visual supports offering non-linguistic opportunities to process content. Hands-on Activities and Investigations provide support for interacting with science concepts making learning visual. Additional, Hands-on Labs and non-fiction Reading Passages are found in the Beyond tab of each Concept providing related content for building students' scientific understanding and development. The Reading Passages on a concept are written at different Lexiles. These passages offer different text structures such as problem-solution, cause and effect, and compare and contracts. Students not only learn to read these types of texts, but they are also used as mentor texts for writing. **Literacy Connections Strategies** Literacy Connections Cards are integrated into the digital Techbook to save teachers time and create seamless opportunities to bring literacy into science and science into literacy. These cards, aligned to the Wonders and Benchmark reading programs, provide teachers with resources to make their reading and writing instructional multimodal, and integrate the reading and writing skills and strategies from their literacy curriculum into the science curriculum.	**Graphic Organizers** Grade 5, Unit 1, Concept 1.1 **Print:** TE Pages: Explore Overview p. 44  **Grade 5 Resources – Graphic Organizers** **Print:** TE Pages: Graphic Organizers p. R1-R6 **Beyond tab – Additional Interactives and Resources** Grade 5, Unit 1, Concept 1.2 **Digital:** https://tinyurl.com/yczofyda **Literacy Connection Strategies** Grade 5, Unit 1, Concept 1.1 **Digital:** • Benchmark: https://tinyurl.com/ybtamxwl • Wonders: https://tinyurl.com/y84jg7gn

Component	Strengths	Citations
SW5. Quality of providing equitable learning opportunities.	**Multilingual Support** Video, audio, and print text resources are available in a number of languages. Digital search filters help teachers and students identify resources in other languages. Additionally, the program is available digitally and in print in both English and authentically translated Spanish to support dual immersion programs. To support students in other languages, digital pages in Science Techbook can be translated into any language available in Google Translate. **English Language Development** California Science Techbook provides access to rich content and academic language in science. Throughout California Science Techbook ELA/ELD Standards and the California NGSS work in tandem to support the English learners. In California Science Techbook students build knowledge about science in variety of different ways, teachers are provided with point of use suggestions for meeting the needs of English Learner students with various levels of language acquisition including, Emerging, Expanding and Bridging. In addition, to the point of use lesson suggestions, tools and supports are embedded within the digital and print components to scaffold and support language and content. California Science Techbook supports the breadth and depth of students' vocabulary acquisition through multiple representations. Students will see new academic language highlighted in context of the student edition in both the print and digital program. In the digital	**Spanish Version** Grade 5, Unit 1, Concept 1.2 **Digital:** https://tinyurl.com/yxfkjqj2  **Technology Enhanced Item translated into simplified Chinese using Google Translate.**  **Example- Science Techbook Video in Spanish**

<table>
<tr><th>Component</th><th>Strengths</th><th>Citations</th></tr>
<tr>
<td>SW5. Quality of providing equitable learning opportunities.</td>
<td>offering students can click on the word and several additional contextual supports are provided such as seeing the word in context of a sentence, viewing an image and/or video and a traditional definition.</td>
<td>
Example- Science Techbook Video in Spanish
Grade 5, Unit 2, Concept 2.1, Activity 3
Digital: https://tinyurl.com/y8bfwvcg

Discovery Education Experience- Additional Videos in Spanish
Digital: https://tinyurl.com/y84tkshj

English Language Development Support
Grade 5, Unit 1, Concept 1.1
Digital: Activity 8
Enter Quick Code: ca5006s
Note: Make sure Teacher View On

Print:
<table>
<tr><th>TE Pages</th></tr>
<tr><td>Activity 8
p. 55</td></tr>
</table>

Interactive Glossary, Print Glossary and Flashcards
Grade 5, Unit 1, Concept 1.1
Digital: Activity 10
Enter Quick Code: ca5019s

Print:
<table>
<tr><th>TE Pages</th><th>SE Pages</th></tr>
<tr><td>Glossary
p. R25</td><td>Glossary
p. R23
Vocabulary Flash Cards
p. R7</td></tr>
</table>
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Component	Strengths	Citations
SW5. Quality of providing equitable learning opportunities.	**Discovery Education Experience** Saving the best for last, in addition to California Science Techbook, all students and teachers will have access to the Discovery Education Experience (formerly known as Streaming) and STEM Connect. Both programs provide access to rich content to extend and deepen students understanding. Through the Discovery Education Experience students have access to over 200,000 media assets to go as deep and wide as preferred. This includes: • 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 that support all students; and, • opportunities to cultivate interest and confidence as scientists and engineers for all students.	**Discovery Education Experience** **Digital:** https://tinyurl.com/yxms7kjl • Check out the Instructional Inspiration Channel which includes ready to go, assignable Studio boards. • Check out real world science with the MLB in The Science of Baseball Channel. • Take your students to the Tundra to see the real world of Polar Bears through a Virtual Field Trip.