### Component: F1. Presence of Phenomena/Problems

**Strengths:**
- 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.

### Citations

**Grade K: Unit 1: Plants and Animal Needs**

- **Unit Page:**
  - **Print:**
    - TE Pages
    - SE Pages
  - Anchor Phenomenon Launch: p. 10
  - Anchor Phenomenon: p. 2
  - Digital: Enter Quick Code: us005s
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
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</thead>
<tbody>
<tr>
<td><strong>Grade K Unit 1</strong>&lt;br&gt;<strong>Unit Level Alignment:</strong>&lt;br&gt;In this unit, students learn about and explore the basic needs of all living things, including animals and plants. Students begin by thinking about how humans help meet the basic needs of pets. Students analyze the needs of all kinds of animals, from pets to familiar animals found in their local environment to more exotic animals that live far away. They also make observations about how animals' habitats meet their needs and how animals live in places that can meet each of their needs. Students uncover the basic needs of plants as they investigate the cause of a droopy plant. They think about and discover what plants need to survive, how the environments in which they live meet their needs, and what happens when their basic needs are not met. Students view videos, images, and simulations, and also conduct hands-on investigations to explore the needs of animals and plants. At the conclusion of the unit, students design a habitat that meets the needs of specific living things.</td>
<td><strong>Investigative Phenomenon Examples:</strong>&lt;br&gt;<strong>Print:</strong>&lt;br&gt;Concept 1.1: Animal Needs: p. 15&lt;br&gt;Concept 1.1: Animal Needs: p. 10-11</td>
<td><strong>Digital:</strong>&lt;br&gt;Concept 1.1: Animal Needs: Enter Quick Code: ca011s</td>
</tr>
</tbody>
</table>

**Investigative Phenomenon Examples:**<br>Grade K: Unit 1: Plant and Animal Needs<br>Concept 1: Animal Needs: Students will learn that all animals need certain things to grow and that the place they live must have what they need in order for them to live and grow.<br><br>Concept 2: Plant Needs: Students will learn that all plants need certain things to grow and that the place they live must have what they need in order for them to live and grow.
### Component
### Presence of Phenomena/Problems.

<table>
<thead>
<tr>
<th>Phenomenon-Based Unit Assessments:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade K: Unit 1:</strong> Students apply the SEPs developed through the Unit to engage in a three dimensional Performance Based Assessment in which students will make a wet or dry habitat. Students use tools and materials to design and build a wet or dry habitat that can meet the needs of a few specific plants and animals.</td>
</tr>
</tbody>
</table>

#### Citations

**NGSS Alignment**

- K-ESS1-5: Use observations to describe patterns of what plants and animals (including humans) need to survive.
- K-ESS3-1: Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

**Materials**

- Per group:
  - Small box or container*
  - Clips showing pictures of the items, or a mix of plants and items:
    - Soil (C)
    - Sand
    - Water
    - Plant food*
    - Grass
    - Cactus
    - Flowers
    - Age of

*provided by materials to C (Consomable material)
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
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</thead>
</table>
| 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 Alignments: [https://tinyurl.com/unbld84](https://tinyurl.com/unbld84)  
Grade K: Unit 1: Plant and Animal Needs  
- Unit Page  
Print:  
<table>
<thead>
<tr>
<th>TE Pages</th>
<th>SE Pages</th>
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</thead>
</table>
| Grade K, Vol 1, Scope & Sequence overview:  
p. xxxvi  
Unit 1: p. 1  
Three Dimensions p. 3 |
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2. Presence of Three Dimensions.</td>
<td><strong>Unit Level Alignment:</strong> 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 guide for the PBA outlines the evidence students demonstrate across the three dimensions. Example: Grade K: Unit 1: Plant and Animal Needs: Students begin by thinking about how humans help meet the basic needs of pets. Students analyze the needs of all kinds of animals, from pets to familiar animals found in their local environment to more exotic animals that live far away. They also make observations about how animals' habitats meet their needs and how animals live in places that can meet each of their needs. Students uncover the basic needs of plants as they investigate the cause of a droopy plant. They think about and discover what plants need to survive, how the environments in which they live meet their needs, and what happens when their basic needs are not met. Students view videos, images, and simulations, and also conduct hands-on investigations to explore the needs of animals and plants. At the conclusion of the unit, students design a habitat that meets the needs of specific living things.</td>
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**Anchor Phenomenon**

New Puppy

Before getting a new pet, it's important to know what it needs to live and grow. A puppy needs what all living things need. Plants are also living things and have needs. By the end of this unit, you will be able to describe what living things need. You will also be able to match living things to the places where they should live.

Guiding Questions
1. What things do animals need to live and grow?
2. What things do plants need to live and grow?
3. How does the place where something lives give it what it needs?

**Unit Project: Hands-On Investigation: Needs of Living Things**

In this activity, students use tools and materials to design and build a wet or dry habitat that can meet the needs of a few specific plants and animals.
### Component: F2. Presence of Three Dimensions

**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.

**Citations:**
- Digital: Unit Page: Enter Quick Code: ca007s
- Concept Pages:
  Within each concept, reference tagged activities in Learn and Share (Explore, Explain, and Elaborate) for additional evidence of three dimensions.
- Print:

<table>
<thead>
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</table>
| F2. Presence of Three Dimensions. | **Concept Level Alignment:**
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  - 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. | **Digital:** Unit Page: Enter Quick Code: ca007s

**Print:**
- Concept 1.1: p 15
- Concept 2.2: p 81

**Enter Digital:** Quick Codes on digital Course page to be taken directly to the pages:
- Concept 2.1: ca008s
- Concept 2.2: ca057s
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
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<tbody>
<tr>
<td><strong>F2. Presence of Three Dimensions.</strong></td>
<td>• Pathways for Learning guidance provides options for students to meet the element level of the SEP and CCC in a variety of technology settings</td>
<td></td>
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</tbody>
</table>

**Investigative Phenomenon**

**Needs of Living Things**

**NGSS Alignment**

K.LS1.1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

**Instructional Focus**

In this activity, students use media to obtain scientific information about the needs of living things.

**Strategy**

Display the text and video Let's Investigate Needs of Living Things. Prepare a chart on which you can record the needs of animals as students name or discover them. You can also make a parallel chart for plants in the next concept.

**Teacher Reflection**

Based on my data:

• What content do my students already know?
• What misconceptions do my students have?
• Are any of my students ready for extension at this point in the lesson?
**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 |

Print:
- TE Pages: Concept 1.1: Animal Needs: p. 50-51
- SE Pages: Concept 1.1: Animal Needs: p. 31

Digital:
- Concept 1.3: Size of Force: ca028s
<table>
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<tr>
<th>Component</th>
<th>Strengths</th>
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</table>
| F2. Presence of Three Dimensions. | to identify areas of strength and weakness and adjust pacing of instruction to achieve proficiency for all students.  
• 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.  
• 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. |

![Animal Homes](image-url)
<table>
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<td>F2. Presence of Three Dimensions.</td>
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</table>

**Teacher Note**
- Membrane of the cell
- Plant cell
- Animal cell
- Cell structure
- Cell division
- Cell reproduction
- Cell function

**Instructional Note**
- Students should use a variety of materials to create a model of a zoo enclosure where seals will live.

**Activity:** Keeping Seals Safe

In this activity, you will build a model of a zoo enclosure where seals will live.

**Seal on a Rock**

What materials do you need? (per group)
- Craft sticks
- Construction paper
- Glue
- Modeling clay

The zoo is getting new animals. Seals will be coming soon. Seals eat fish. Seals swim in water. Seals also live on land. The zoo wants to build a new place for them to live. What should this place in the zoo look like?

- How will the seals get to water?
- How will the seals get up on land?
- How will the seals be kept safe from people and other animals?
- Where will the seals be kept?
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
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<tbody>
<tr>
<td>F3. Presence of Environmental Principles &amp; Concepts (EP&amp;Cs)..</td>
<td>The materials include (as applicable): • instructional content that incorporates the California EP&amp;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.</td>
<td>Grade K: Unit 1: Plant and Animal Needs Print: Grade K, Vol 1, Scope &amp; Sequence overview: p. xxxviii Digital: <a href="https://tinyurl.com/unbld84">https://tinyurl.com/unbld84</a>;</td>
</tr>
</tbody>
</table>

The Discovery Education Comprehensive Science Program includes varied resources that identify, include, and authentically align the instructional content to the California EP&Cs. See examples below:

**Course Level Alignment:**
EP&C Map demonstrates specific resources and activities within each course that target the California EP&Cs.
### F3. Presence of Environmental Principles & Concepts (EP&Cs)

**Concept Level Content:**
Grade K: Unit 1: Concept 1.2: Plant Needs

In this concept, students explore the lesson question in Learn, “How are materials alike and different?” Throughout this section, students have the opportunity to share their observations about materials and their properties and have them use these observations to describe patterns in the natural world. For instance, as students observe metals, they might ask themselves: Are all metals shiny? As they describe materials that make up the playground, students might ask themselves: Is the asphalt on the playground always hot, or does it feel cooler at different times throughout the day?

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<tr>
<td>Concept 1.2 Learn</td>
<td>• Concept 1.2: ca068s</td>
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<tr>
<td>Concept 1.2 Learn</td>
<td>p. 106</td>
<td>SE Pages</td>
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<tr>
<td>Concept 1.2 Learn</td>
<td>p. 76</td>
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<td>Citations</td>
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</table>
| 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. | Grade K: Course  
Course Level Alignments: https://tinyurl.com/unbld84  

Scope and Sequence and Three Dimensions  
Grade K, Unit 1  
Print:  
TE Pages  
Scope & Sequence overview p. xxxvi-xli  
Three Dimensions p. 3 |
## Component: F4. Presence of a Logical Sequence of Learning

### Concept 1.2 Plant Needs
- SEP Asking Questions and Defining Problems
- SEP Developing and Using Models
- SEP Planning and Carrying Out Investigations
- SEP Constructing Explanations and Designing Solutions
- SEP Analyzing and Interpreting Data
- SEP Engaging in Argument from Evidence
- SEP Obtaining, Evaluating, and Communicating Information

### 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.

Grade K, Unit 1, Concept 1.1: Animal Needs:
Throughout Learn, students complete a series of activities where they acquire knowledge of the basic needs of all organisms and discover the commonalities and differences between animal and plant needs.

- In activity 6 (Analyze Like a Scientist), obtain information using text and other media about the needs of animals for survival.
- In activity 8 (Observe Like a Scientist), students use observations from media to describe the relationship between different pets and the foods they eat.
- In activity 10 (Think Like a Scientist), student

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

### Grade K, Unit 1, Concept 1.1
**Print:**

<table>
<thead>
<tr>
<th>TE Pages</th>
<th>SE Pages</th>
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<tbody>
<tr>
<td>Concept 1.1</td>
<td>Concept 1.1</td>
</tr>
<tr>
<td>Activity 6: p. 35-37</td>
<td>Activity 6: p. 20-22</td>
</tr>
<tr>
<td>Activity 8: p. 40-41</td>
<td>Activity 8: p. 24-25</td>
</tr>
<tr>
<td>Activity 10: p 44-49</td>
<td>Activity 10: p. 28-30</td>
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<td>Component</td>
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</table>
| F4. Presence of a Logical Sequence of Learning. | conduct a hands-on activity to determine different animal needs and predict how those needs are met. They use observations to describe patterns of what animals need to survive. | Digital Quick Codes: Concept 1.1  
Activity 6: ca021s  
Activity 8: ca023s  
Activity 11: ca027s |
**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. | Student Work Tagged by SEP and CCC throughout the Wonder, Learn and Share instructional activities for both Teacher and Student:  
Grade K: Unit 1: Materials from the Land  
  - Print  
  - Digital  
  
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.

**EP&C’s and 3-Dimensional Learning**

- [https://tinyurl.com/unbld84](https://tinyurl.com/unbld84)

**Technology Enhanced Item examples**

- Concept 1.1 Animal Needs:  
  - Digital: Activity 7; Evaluate Like a Scientist; Quick Code ca022s  
  - Digital: Activity 16; Evaluate Like a Scientist; Quick Code ca036s

#### Strengths

**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.

#### Citations

**Grade K: Unit 1: Plant and Animal Needs**
- Unit Level Performance Based Assessment example:
  - Digital: [https://tinyurl.com/ybdh28ll](https://tinyurl.com/ybdh28ll)
  - PBA Teachers Guide: [https://tinyurl.com/ybdf9ttj](https://tinyurl.com/ybdf9ttj)

**Student and Teacher Learning Dashboards**
- Video of Dashboard functionality: [https://tinyurl.com/y4chmhbz](https://tinyurl.com/y4chmhbz)
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<tr>
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<tbody>
<tr>
<td>SP1. Quality of supports for monitoring 3D learning and EP&amp;Cs integration.</td>
<td>In addition to the full Dashboard, teachers have a Results View for all individual Technology Enhanced items at point of use as well. <strong>Builder Tools:</strong> Assessment Builder and Discovery Studio give teachers flexibility to create customized assessments. <strong>Hands-on Activities and Hands-on Labs:</strong> 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.</td>
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<td>Component</td>
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</tbody>
</table>
| 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. | **Hands-on Activity example**
Concept 1.1 Animal Needs
- Digital: Activity 19; Solve Problems Like a Scientist; Quick Code ca044s
- TE: Page 67
- SE: Page 46

**Hands-on Lab example**
Concept 1.2 Plant Needs
- Digital: Activity 9; Investigate Like a Scientist; Quick Code ca069s
- TE: Page 109
- SE: Page 79

**Online Interactive Examples**
**Concept 1.2: Getting to Know Plants**
- Digital: Activity 8: Quick Code ca071s

**Concept 1.2: Needs of Living Things**
- Digital: Beyond Tab [https://tinyurl.com/y9j5jtln](https://tinyurl.com/y9j5jtln) |
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<th>Component</th>
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</table>
| SP1. Quality of supports for monitoring 3D learning and EP&Cs integration. | **STEM 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 example**  
Concept 1:2: Plant Needs  
- Digital: Activity 18; Analyze Like a Scientist; Quick Code ca095s  
- TE Page: 138  
- SE Page: 106  
**STEM Project Starter example**  
Concept 2.2 Changing Materials  
- Digital: Extension 1  
[https://tinyurl.com/y9cvxw45](https://tinyurl.com/y9cvxw45) |
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<tbody>
<tr>
<td>SP2. Quality of capturing student progress</td>
<td>Assessments are designed to:</td>
<td>Student and Teacher Learning Dashboards</td>
</tr>
<tr>
<td>over time.</td>
<td>• ensure that students use SEPs integrated with DCIs and CCCs to demonstrate their understanding of phenomena and/or design solutions to problems.</td>
<td>Video of Dashboard functionality:</td>
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<td></td>
<td>• connect student learning experiences to the targeted learning goals.</td>
<td>• <a href="https://tinyurl.com/y4chmhbz">https://tinyurl.com/y4chmhbz</a></td>
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<td>• elicit observable evidence of students’ knowledge of and ability to use grade-level-appropriate elements of the three dimensions.</td>
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<td></td>
<td>• ensure that students use EP&amp;Cs where applicable to demonstrate their understanding of environmental phenomenon/problem solution.</td>
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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:

**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
<table>
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<tr>
<th>Component</th>
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<th>Citations</th>
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</table>
| SP2. Quality of capturing student progress over time. | 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. | **Technology Enhanced Item Examples**  
- Concept 1.1 Animal Needs:  
  - Digital: Activity 7; Evaluate Like a Scientist; Quick Code ca022s  
  - Digital: Activity 16; Evaluate Like a Scientist; Quick Code ca036s  
  
**Step By Step Guide to the Assessment Builder:**  

**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...
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP2. Quality of capturing student progress over time.</td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

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
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP2. Quality of capturing student progress over time.</td>
<td>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.</td>
<td>Teacher Reflection Questions example Concept 1.1 Animal Needs • Digital: Activity 17; Analyze Like a Scientist Quick Code ca037s Note: Make sure Teacher View On • TE Page: 62</td>
</tr>
</tbody>
</table>

The studio tool allows students to collect their evidence and progress 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.

**Teacher Reflection**

- Did this activity engage the students?
- Which delivery approach best supported my students in identifying additional patterns in what animals need to survive (interactive, reading, engage)?
- Would you organize this activity differently next year?
- Were students able to explain why a specific animal lives in its habitat?
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| 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. |

**Scientific Explanations**  
Grade K: Unit 1: Plant and Animal Needs  
Concept 1.1 Animal Needs  
- Digital: Activity 15, Observe Like a Scientist  
  Quick Code ca035s  
  Student Investigation Sheet  
  https://tinyurl.com/y9gxldjf  
  Teacher’s Guide  
  https://tinyurl.com/ycyssmke  
- Print:  
  - TE: Page 58  
  - SE: Page 38  

Teacher Note  
-Digital: Quick Code ca035s  
Note: Make sure Teacher View On
**SP3. Quality of guidance and tools that use a variety of measures.**

**Student Objectives**

By the end of this lesson:

- I can use evidence to describe how pets meet their needs.
- I can use evidence to describe animals that live near me and how they meet their needs.
- I can explain how different environments meet the needs of animals.

**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.

---

**Teacher Note**

- Paper (C)
- Pencils (C)
- "Thermometer (indoor/outdoor)" (C)
- "Wind sock" (C)
- Poster board (C)
- Markers (C)

*provided in materials kit
(C) Consumable material

**Safety**

- Remind students to never look directly at the sun.

**Instructional Focus**

In this activity, students record weather data using numbers, pictures, and simple words. They observe how weather changes from day to day over the course of one month.
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| SP3. Quality of guidance and tools that use a variety of measures. | ![Image of a matching activity] - Match each animal to the place that best meets its needs. | Summative Assessment Grade K: Unit 1: Plant and Animal Needs Concept 1.2 Plant Needs  
- Digital:  
  - Summative Assessment  
  - [https://tinyurl.com/ybdh28ll](https://tinyurl.com/ybdh28ll)  
  - Teacher’s Guide  
  - [https://tinyurl.com/ybdf9ttj](https://tinyurl.com/ybdf9ttj)  
  Note: Make sure Teacher View On  
Scientific Explanation Teacher Rubric  
[https://tinyurl.com/y6mm1hrz](https://tinyurl.com/y6mm1hrz) |
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| **SP3. Quality of guidance and tools that use a variety of measures.** | **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. | **Hands-on Activity example**  
Concept 1.1 Animal Needs  
- Digital: Activity 19; Solve Problems Like a Scientist; Quick Code ca044s  
- TE: Page 67  
- SE: Page 46  

**Hands-on Lab example**  
Concept 1.2 Plant Needs  
- Digital: Activity 9; Investigate Like a Scientist; Quick Code ca069s  
- TE: Page 109  
- SE: Page 79  |

**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 K-1: Water  
  https://tinyurl.com/ybfydc36
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP3. Quality of guidance and tools that use a variety of measures.</td>
<td><strong>Assessment Tools</strong>, 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.</td>
<td></td>
</tr>
</tbody>
</table>

**Step by Step Guide to Assessment Builder**

**Step by Step Guide to Studio**
- [https://tinyurl.com/y8rt7us2](https://tinyurl.com/y8rt7us2)
### Component
SP4. Quality of support and strategies for ensuring equitable access.

### Strengths
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.

### Citations

**Summative Assessment**
Grade K: Unit 1: Plant and Animal Needs
Concept 1.2 Plant Needs
- Digital:
  - Summative Assessment
  - [https://tinyurl.com/ybdh28ll](https://tinyurl.com/ybdh28ll)
  - Teacher’s Guide
  - [https://tinyurl.com/ybdf9ttj](https://tinyurl.com/ybdf9ttj)

Note: Make sure Teacher View On

TEI translated into simplified Chinese using Google Translate.

<p>| | |</p>
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<tr>
<td>Component</td>
<td>Strengths</td>
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<tr>
<td>SP5. Quality of use of formative and summative assessments.</td>
<td>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.</td>
</tr>
<tr>
<td>Component</td>
<td>Strengths</td>
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<tr>
<td>SP5. Quality of use of formative and summative assessments.</td>
<td>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. 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.</td>
</tr>
</tbody>
</table>

**Explain activity example**  
Grade K: Unit 1: Plant and Animal Needs  
Concept 1.2 Plant Needs
- Digital: Activity 17; Record Evidence Like a Scientist; Quick Code c092s
- TE: Page 134
- SE: Page 102
### Component


<table>
<thead>
<tr>
<th>Strengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher materials provide background information about the phenomena or problems included in the learning sequence and across sequences provide:</td>
</tr>
<tr>
<td>• an explanation of the role of phenomena or problems in driving student learning.</td>
</tr>
<tr>
<td>• rationale for why the unit phenomena or problems were selected for the targeted DCIs, SEPs, CCCs, and EP&amp;Cs (when applicable).</td>
</tr>
</tbody>
</table>

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.

**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

### Three Dimensions at a Glance

**Grade 2: Unit 2: Materials from the Land**

- **Print:**
  - TE: Page 3
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS1. Phenomena/problems Driven Three-Dimensional Learning.</td>
<td>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. <strong>Concept-Level Support:</strong> 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. <strong>Teacher Notes:</strong> 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</td>
<td></td>
</tr>
</tbody>
</table>

**Anchor Phenomenon**

Grade 2: Unit 2: Materials from the Land
- Digital: Anchor Phenomenon: Getting Started Quick Code ca2250s
- Print:
  - TE: Page 14
  - SE: Page 2

**Example Teacher Note: Wonder (Engage)**
### Component | Strengths | Citations
---|---|---
**TS1. Phenomena/problems Driven Three-Dimensional Learning.**

- 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.

**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

**Example Teacher’s Guide: Hands-on Labs**
Concept 1.1 Animal Needs
- Digital: Activity 15, Observe Like a Scientist: Quick Code ca035s
  - Teacher’s Guide
  - https://tinyurl.com/ycyssmke

**Example Teacher Hands-On Activity Video**
Concept 3.1 Weather Patterns
- Digital: Activity 8: Make a Weather Calendar
  - https://tinyurl.com/yd5kx7e2

**Unit Storyline and Outline**
Grade K: Unit 1: Plant and Animal Needs
- Print:
  - TE: Page 8-9
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS1. Phenomena/problems Driven</td>
<td><strong>Concept-Level Support</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Three-Dimensional Learning.     | - 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 | Print: Concept 1.1: Animal Needs:  
  TE Pages: p. 15  
  SE Pages: p. 10-11  
  Digital: Concept 1.1: Animal Needs:  
  Enter Quick Code: ca011s |

**Investigative Phenomenon Examples:**

**Print:**

<table>
<thead>
<tr>
<th>TE Pages</th>
<th>SE Pages</th>
</tr>
</thead>
</table>

**Digital:**

Concept 1.1: Animal Needs:  
Enter Quick Code: ca011s
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>

### Concept Pacing Options

#### Grade K: Unit 1: Plant and Animal Needs

#### Concept 1.1 Animal Needs

#### Model Lesson

- **Location**: Days 1-15
- **Model Lesson Description**: Investigative Phenomenon
- **Time**: 30 min.
- **Blocks**: 45 min.

#### Explore

- **Day 3**: What Do Pets Need?
- **Day 4**: What Do Pets Need?
- **Day 5**: What Are the Needs of Animals That Live Around Us?
- **Day 6**: What Are the Needs of Animals That Live Around Us?
- **Day 7**: What Are the Needs of Animals That Live Around Us?
- **Day 8**: What Are the Needs of Animals That Live Around Us?
- **Day 9**: How Do Animals That Live Farther Away Find What They Need to Survive?
- **Day 10**: How Do Animals That Live Farther Away Find What They Need to Survive?
- **Day 11**: How Do Animals That Live Farther Away Find What They Need to Survive?
- **Day 12**: How Do Animals That Live Farther Away Find What They Need to Survive?
- **Day 13**: How Do Animals That Live Farther Away Find What They Need to Survive?
- **Day 14**: How Do Animals That Live Farther Away Find What They Need to Survive?
- **Day 15**: Scientific Explanation

#### Total Model Lesson Pacing: 340 min.

#### Print:
- **TE**: Pages 18
## DISCOVERY EDUCATION NGSS TIME RESPONSE

### Grade K

<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
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</thead>
</table>
| 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.  
California Science Techbook provides for coherence by | | Next Generation Science Standards  
Grade K: Unit 1: Plant and Animal Needs  
- Print:  
  - TE: Page 2  
5E Model (Wonder, Learn, Share)  
Grade K: Unit 1: Plant and Animal Needs  
- Print:  
  - TE: Page xxviii |
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| TS2. Coherence.    | 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. | Three Dimensions at a Glance  
Grade K: Unit 1: Plant and Animal Needs  
- Print:  
- TE: Page 3 |
|                    | 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.                         | Scope and Sequence  
Grade 2: Unit 2: Materials from the Land  
- Print:  
- TE: Pages xxxviii - xliii |
|                    | 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. |                                                                            |
**Component**: 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.

---

**California Common Core and ELD and EP&Cs**

**Grade K: Unit 1: Plant and Animal Needs**

- **Print:**
  - TE: Pages 4-7

**Concept 1.1 Animal Needs**

Print:
TE (Wonder): Page 22
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS3. Effective Teaching.</td>
<td>Teacher materials support the use of and provide a rationale and evidence of effectiveness for strategies that:</td>
<td>Concepts at a Glance</td>
</tr>
<tr>
<td></td>
<td>• support students in learning through authentic and meaningful phenomena or design problems.</td>
<td>Grade K: Unit 1: Plant and Animal Needs</td>
</tr>
<tr>
<td></td>
<td>• support student learning across the three dimensions.</td>
<td>Concept 1.1 Animal Needs</td>
</tr>
<tr>
<td></td>
<td>• make student thinking visible; promote reasoning, sense-making, and problem-solving; challenge student thinking; and develop metacognitive abilities</td>
<td>Print:</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td>• TE: Pages 16-17</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
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<tr>
<td>Component</td>
<td>Strengths</td>
<td>Citations</td>
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</tr>
<tr>
<td>TS3. Effective Teaching.</td>
<td><strong>Supporting 21st Century Learners:</strong> 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.</td>
<td></td>
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<tr>
<td></td>
<td><strong>Teacher Notes with Strategies:</strong> 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.</td>
<td></td>
</tr>
</tbody>
</table>

**Concept Pacing Options**

Concept 1.1 Animal Needs
- **Print:**
  - TE: Pages 24-27
### Component: TS3. Effective Teaching.

#### Strengths:

**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.

#### Citations:

**Teacher Notes and Strategies**

Grade 1: Unit 1: Materials from the Land

- **Concept 1.1 Animal Needs**
  - **Digital:** [https://tinyurl.com/y9ym42rs](https://tinyurl.com/y9ym42rs)
    
  - Note: Make sure Teacher View On

- **TE:** Pages 51

#### Example Teacher Note – Digital

#### Example Embedded Strategy - Print TE
### Component

**TS3. Effective Teaching.**

### Strengths

**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.

**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.

### Citations

**Spotlight on Strategies**
- Digital: [https://tinyurl.com/y62cg28n](https://tinyurl.com/y62cg28n)

### Activity Types

#### Print:

- **TE: Page xxvii**

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**Instructional Pathways**
Throughout Wonder, Learn, and Share, carefully crafted activities build in complexity, unfolding the expectations of the standards, and provide interactive experiences for students to develop their scientific knowledge. Each activity type in the print Student Edition provides students with common language on how they are working as scientists. The Teacher Edition not only provides direct access to the multimedia and handout resources but also offers detailed strategies on how to integrate the activities into instruction.

**Activity Types in Wonder, Learn, and Share**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Student Edition Label</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>Part the Engine</td>
<td>Students construct a pulley system to move an object.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Ask Questions Like a Scientist</td>
<td>Students begin to ask questions about the Investigating characteristic.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Observe Like a Scientist</td>
<td>Students observe and evaluate text to draw scientific explanations.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Analyze Like a Scientist</td>
<td>Students analyze and evaluate text to draw scientific explanations.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Investigate Like a Scientist</td>
<td>Students conduct investigations, collect data, and reflect on their learning.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Evaluate Like a Scientist</td>
<td>Students demonstrate multidimensional learning by explaining data, text, and images.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Interpret Data Like a Scientist</td>
<td>Students analyze, graph, and summarize data.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Solve Problems Like a Scientist</td>
<td>Students apply scientific ideas to solve problems.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Design Solutions Like a Scientist</td>
<td>Students design solutions to real-world problems.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Record Evidence Like a Scientist</td>
<td>Students use evidence to connect scientific explanations of the Investigative phenomenon.</td>
</tr>
<tr>
<td>![Icon]</td>
<td>Think Like a Scientist</td>
<td>Students develop scientific ideas through reasoning activities.</td>
</tr>
<tr>
<td>Component</td>
<td>Strengths</td>
<td>Citations</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| TS3. Effective Teaching.   | **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. | **Professional Learning Center**  
  - Digital:  
  - [https://teachers.discoveryeducation.com/](https://teachers.discoveryeducation.com/) |
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| 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 2: Unit 2 Materials from the Land  
Concept 2.1 Material Properties  
Unit Level  
- Print:  
  - TE: Page 16  
| Concept Level | Digital: Quick Code: ca021s  
Note: Make sure Teacher View On  
Print:  
- TE: Page 35 |
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
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<tbody>
<tr>
<td>TS4. Support for Students with Diverse Learning Needs.</td>
<td></td>
<td><strong>Differentiation Strategies</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade K: Unit 1 Plant and Animal Needs</td>
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<tr>
<td></td>
<td></td>
<td>Concept 1.1 Animal Needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Digital: Quick Code: ca028s</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: Make sure Teacher View On</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Print:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TE: Page 50</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Student Misconceptions</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade K: Unit 1 Plant and Animal Needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Concept 1.1 Animal Needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Digital: Quick Code: ca028s</td>
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<tr>
<td></td>
<td></td>
<td>Note: Make sure Teacher View On</td>
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<td>- Print:</td>
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<tr>
<td></td>
<td></td>
<td>- TE: Page 50</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Interactive Worktext Tools</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grade K: Unit 1 Plant and Animal Needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Concept 1.1 Animal Needs</td>
</tr>
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<td></td>
<td></td>
<td>- Digital: Quick Code: ca069s</td>
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<tr>
<td></td>
<td></td>
<td><strong>Spanish language option example</strong></td>
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</tbody>
</table>

![Language Example](image-url)
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| **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 K: Unit 1 Plant and Animal Needs  
Concept 1.1 Animal Needs  
- Digital: Quick Code: ca2509s  
  - Print: TE: Page 28 |
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| 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. | **Beyond tab**  
Grade K: Unit 1 Plant and Animal Needs  
Concept 1.1 Animal Needs  
• Digital: https://tinyurl.com/y72tq7pt |
|          | **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. | **Discovery Education Experience**  
• Digital: https://tinyurl.com/yxms7kj |  
|          | **Modalities for Learning:**  
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.  
• **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. | **Pathways to Learning**  
Grade K: Unit 1 Plant and Animal Needs  
Concept 1.1 Animal Needs  
• Print:  
  • TE: Page 20 |
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| TS4. Support for Students with Diverse Learning Needs. | **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. | **DEN Online Community**  
The DEN Online Community is a global platform where you can learn, share, and connect with other educators using Discovery Education.  
Learning how others are using Discovery Education  
Accessing and sharing resources  
Discussing instructional ideas  
Posing questions to the community  
Discuss ideas in real-time, connect with educators facing the same challenges, and earn badges for your Discovery Education activity.  
**Discovery Education Network (DEN)**  
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| 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. | Concept at a Glance  
Grade K: Unit 1 Plant and Animal Needs  
Concept 1.1 Animal Needs  
- Print:  
  - TE: Pages 16  
Summative Assessments  
Grade K: Unit 1: Plant and Animal Needs  
- Unit Level Performance Based Assessment example:  
  - Digital: [https://tinyurl.com/ybdh28ll](https://tinyurl.com/ybdh28ll)  
  - PBA Teachers Guide: [https://tinyurl.com/ybdf9ttj](https://tinyurl.com/ybdf9ttj) |

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.
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| 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. | **Results Dashboards**  
Video of Dashboard functionality:  
- [https://tinyurl.com/y4chmhbz](https://tinyurl.com/y4chmhbz)  

**Teacher Dashboard** |
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS5. Support to Monitor Student Progress.</td>
<td><strong>Builder Tools:</strong> Assessment Builder and Discovery Studio give teachers flexibility to create customized assessments.</td>
<td><img src="image" alt="Assessment Settings and Materials" /></td>
</tr>
<tr>
<td>Component</td>
<td>Strengths</td>
<td>Citations</td>
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<td>-----------</td>
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</tbody>
</table>
| SW1. Quality of opportunities to explain phenomena/solve problems. | 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. | Investigative Phenomenon Examples:  
Print:  
| Concept 1.1: Animal Needs: |  
| p. 15 | Concept 1.1: Animal Needs: |  
| p. 10-11 |
| Digital:  
<p>| Concept 1.1: Animal Needs: |<br />
| Enter Quick Code: ca011s |</p>
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1. Quality of opportunities to explain phenomena/solve problems.</td>
<td>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.</td>
<td>Performance-Based Unit Assessment Grade K: Unit 1: Plant and Animal Needs • Unit Level Performance Based Assessment example: o Digital: <a href="https://tinyurl.com/ybdh28ll">https://tinyurl.com/ybdh28ll</a> PBA Teachers Guide: <a href="https://tinyurl.com/ybdf9ttj">https://tinyurl.com/ybdf9ttj</a></td>
</tr>
<tr>
<td>Component</td>
<td>Strengths</td>
<td>Citations</td>
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<td>-----------</td>
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</tbody>
</table>
| 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: Can You Explain Example  
Grade K: Unit 1 Plant and Animal Needs  
Concept 1.1 Animal Needs  
- Print:  
  - TE: Pages 22 |
### Component | Strengths | Citations
---|---|---
SW2. Quality of building a three-dimensional conceptual framework. | **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. | Learn: and Hands-On Investigation and Interactive
**Hands-on Activity example**
Concept 1.1 Animal Needs
- Digital: Activity 19; Solve Problems Like a Scientist; Quick Code ca044s
- TE: Page 67
- SE: Page 46

**Hands-on Lab example**
Concept 1.2 Plant Needs
- Digital: Activity 9; Investigate Like a Scientist; Quick Code ca069s
- TE: Page 109
- SE: Page 79

**Online Interactive Examples**
Concept 1.2: Getting to Know Plants
- Digital: Activity 8; Quick Code ca071s

Concept 1.2: Needs of Living Things
- Digital: Beyond Tab [https://tinyurl.com/y9j5jtln](https://tinyurl.com/y9j5jtln)

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.

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.
**SW2. Quality of building a three-dimensional conceptual framework.**

**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>
<thead>
<tr>
<th>Icon</th>
<th>Student Edition Label</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

**Share: Record Evidence example**
Grade 2: Unit 2: Materials from the Land Concept 2.1 Material Properties
- Digital: Activity 25, Record Evidence Like a Scientist
  - Quick Code ca2295s
    - Teacher Note
      - [https://tinyurl.com/sa2q5zl](https://tinyurl.com/sa2q5zl)
- Print:
  - TE: Page 90
  - SE: Page 62

**Share: STEM Project example**
**STEM in Action example**
Concept 2.2: Changing Materials
- Digital: Activity 25; Analyze Like a Scientist; Quick Code ca2345s
- TE Page: 166
- SE Page: 123

**STEM Project Starter example**
Concept 2.2 Changing Materials
- Digital: Extension 1
  - [https://tinyurl.com/rbkkqgc](https://tinyurl.com/rbkkqgc)

**Activity Types**
- Print:
  - TE: Pages xxix
## 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.

### Citations

**Wonder: Accessing Prior Knowledge example**  
Grade 2: Unit 2: Materials from the Land  
Concept 2.2 Changing Materials

- Digital: Activity 4, Can You Explain?  
  Quick Code ca2310s
- Print:
  - TE: Page 118
  - SE: Page 80
### Component
SW4. Quality of providing experiences that develop metacognition.

### Strengths
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.

### Citations

### Concept Level Student Objectives
Grade 2: Unit 2: Materials from the Land

Concept 2.1 Material Properties
- Digital: [https://tinyurl.com/tzdc52v](https://tinyurl.com/tzdc52v)
  - Note: Make sure Teacher View On
- Print:
  - TE: Page 21
  - SE: Page 7
<table>
<thead>
<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
</table>
| 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. | Results Dashboards Video of Dashboard functionality:  
• [https://tinyurl.com/y4chmhbz](https://tinyurl.com/y4chmhbz)  

![Dashboard Screenshot](Image)

Tools for All Types of Learners  
Grade 2: Unit 2 Materials from the Land Concept 2.1 Material Properties  
• Digital: [https://tinyurl.com/syeo2re](https://tinyurl.com/syeo2re)  

Step by Step Guide to Studio  
• [https://tinyurl.com/y8rt7us2](https://tinyurl.com/y8rt7us2) |
### Component

**SW5. Quality of providing equitable learning opportunities.**

**Strengths**

- 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

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**Citations**

- Digital: Activity 12: Analyze Like a Scientist; Quick Code ca2391s
- TE: Page 180
- SE: Page 180

**Reading Passage**

Max and his friends are exploring the woods. They find strange objects. Max finds a strange fruit. It is made of glass. Max could break through this. What changed the color of the objects that Max found?
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<tr>
<th>Component</th>
<th>Strengths</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW5. Quality of providing equitable learning opportunities.</td>
<td>Complementary use of images, videos, and audio, build students’ background knowledge and strengthen their comprehension. California Science Techbook provides a wide array of graphic organizers and visual supports offering non-linguistic opportunities to process content. Hands-on Activities and labs 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.</td>
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<tr>
<td><strong>Literacy Connections Cards</strong></td>
<td>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.</td>
<td></td>
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</tbody>
</table>
| **Graphic Organizer** | Grade 2: Unit 2: Materials from the Land Concept 2.1 Material Properties | - Digital: Activity 6, Evaluate Like a Scientist Quick Code ca2264s  
- Print:  
  - TE: Page 44  
  - SE: Page R1 |
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| 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. |  |
| **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 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. | **Spanish Translation**  
Grade 2: Unit 2 Materials from the Land  
Concept 2.1 Material Properties  
- Digital: [https://tinyurl.com/syeo2re](https://tinyurl.com/syeo2re)  
Spanish language option example |
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| SW5. Quality of providing equitable learning opportunities.              | **Discovery Education Experience**  
Saying 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-Example Videos in Spanish**  
- Digital: [https://tinyurl.com/vmq5bm](https://tinyurl.com/vmq5bm)  

**English Language Development Support**  
Grade 2: Unit 2 Materials from the Land  
Concept 2.1 Material Properties  
**Unit Level**  
  - Print:  
    - TE: Page 16
<table>
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<tr>
<td>SW3. Quality of leveraging student prior knowledge and experiences.</td>
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**Concept Level**
- Digital: [https://tinyurl.com/slwhebj](https://tinyurl.com/slwhebj)

**Note:** Make sure Teacher View On
- Print:
  - TE: Page 62

**Discovery Education Experience:**
- Check out the Instructional Inspiration Channel which includes ready to go, assignable 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.