**This advisory recommendation has not been approved by the Instructional Quality Commission or the State Board of Education.**

# REVIEW PANEL ADVISORY RECOMMENDATION2018 SCIENCE ADOPTION OF INSTRUCTIONAL MATERIALS

| **Publisher** | **Program** | **Grade Level(s)** |
| --- | --- | --- |
| Carolina Biological Supply Company | Building Blocks of Science 3D | K–5 |

## Program Summary:

Building Blocks of Science 3D includes the following: Teacher’s Guide (TG); AOS- Assessment Observation Sheet; AP- Anchoring Phenomenon; AS- Assessment Strategies; EXT- Extensions; INV- Investigations; IP- Investigative Phenomenon; LA- Literacy Article; L&S- Literacy and Science; SIS- Student Investigation Sheet; SA- Summative Assessment; TMM- Tell Me More;

Student Edition: LR- Literacy Reader;

Digital Review: SIM- Simulation, ISS- Innovators in Science, IWB- Interactive Whiteboard, SBA- Scenario-Based Assessment, Video-Phenomena Video.

## Recommendation:

Carolina Biological Supply Company is recommended for adoption for K–5 because the instructional materials include content as specified in the Next Generation Science Standards for California Public Schools (CA NGSS) and meet all the criteria in Category 1 with strengths in categories 2–5.

## Criteria Category 1: Alignment with the CA NGSS Three-Dimensional Learning

The program includes content as specified in the CA NGSS and includes a well-defined sequence of instructional opportunities that provides a path for all students to become proficient in all grade-level performance expectations.

**Citations:**

* Criterion #1, Grade K, *Living Things and Their Needs* (TG) pp. 30-42. The materials support teachers in instructing students how to use observations to describe patterns of what plants and animals (including humans) need to survive.
* Criterion #1, Grade 1, *Light and Sound Waves* (TG) pp. 48-59. The materials help teachers instruct students how to plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make things vibrate.

1

* Criterion # 1: Grade 2, *Ecosystem Diversity* (TG) pp. 74-81. The materials align to the CA NGSS in order to facilitate students’ understanding of performance expectations.
* Criterion #1: Grade 3, *Weather and Climate Patterns* (TG) pp. 67-76. The materials align with 3-ESS2-1 by having students represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
* Criterion # 1: Grade 4, *Energy Works* (TG), pp. 168-181 as well as (LR) pp. 10-11, and 14. The materials align to the CA NGSS in order to facilitate students’ understanding of performance expectations.
* Criterion #1: Grade 5, *Matter and Energy in Ecosystems* (TG) pp. 171-173. The materials have students examine the human impact on ecosystems and provide solutions to reduce the human impact, which aligns with the CA NGSS.
* Criterion #2, Grade 1, *Exploring Organisms* (TG) pp. 52-66, vi, ix, and xi-xv. The materials engage students in using text, discourse, and experiential learning to develop mastery of the three integrated dimensions of the CA NGSS.
* Criterion # 4: Grade 4, *Plant and Animal Structures* (TG), pp. 34-42, 48-62, and 118-131. The materials progressively build students’ abilities to meet grade-level performance expectations through a three-dimensional sequence.
* Criterion #5: Grade 1, *Sky Watchers* (TG) pp. 38-40 and SIS 1B. The materials provide instructional opportunities and assessments that engage students in three-dimensional learning.
* Criterion #7: Grade 1, *Exploring Organisms* (TG) pp. 74-80 and (LR) pp. 2-15. The materials include primary sources, such as scientific resources and photographs, which are integrated into the three-dimensional learning.
* Criterion #11: Grades K-5, *Innovators in Science* (www.carolina.com/capanelreview). This resource provides examples of people and groups who used their context, learning, and intelligence to make important contributions to society through science and technology from different demographic, ethnic, and cultural groups.
* Criterion #15: Grade 2, *Ecosystem Diversity* (TG) pp. 115-116 and SIS 5A. The materials help students place humans in their ecological system and emphasize the necessity for protecting the environment.

## Criteria Category 2: Program Organization

The organization and features of the instructional materials support instruction and learning of the CA NGSS.

**Citations:**

* Criterion #2: Grade 3, *Weather and Climate* (TG) pp. 108-111. The materials provide support for teacher questioning strategies as a tool to assess students’ knowledge and skills and guide student learning.
* Criterion #4: Grade 4, *Energy Works* (TG) pp. 88-102. The materials give support to engage students in three-dimensional learning and suggest research-based strategies to elicit student thinking and support student discourse.
* Criterion #11: Grade K, *Push, Pull, Go* (TG) p.45. The materials include references to where related supplemental open educational resources may be found.
* Criterion #12: Grade 2, *Ecosystem Diversity* (TG) pp. 54-62. The materials show ancillary and support resources that are an integral part of the instructional program, including support kits, online literacy readers in both English and Spanish, as well as various phenomena videos.

## Criteria Category 3: Assessment

The program includes multiple models of both formative and summative assessment tasks for measuring what students know and are able to do and provides guidance for teachers on how to use scoring rubrics and interpret assessment results to guide instruction.

**Citations:**

* Criterion #2: Grade K, *Weather and Sky* (TG) pp. xvi and 32-35. The materials provide pre-unit assessments to help teachers elicit students’ prior knowledge and preconceptions.
* Criterion #2: Grade 1, *Sky Watchers* (TG) pp. xvi and 32-37. The materials provide pre-unit assessments to help teachers elicit students’ prior knowledge and preconceptions.
* Criterion #3: Grade 3, *Forces and Interactions* (TG) pp. xvi and 95-98. The materials provide investigation activities to engage students in tasks that afford both learning and formative assessment opportunities.
* Criterion #5: Grade 2, *Earth Materials* (TG) pp. xvi and 34-50. The materials provide investigations and activities that yield information teachers can use in planning and modifying instruction to help students meet or exceed the NGSS standards.
* Criterion #7: Grade 4, *Energy Works* (TG) pp. 208-215. The materials provide summative unit assessment for teachers with a valid and reliable evaluation of student understanding of key unit concepts.
* Criterion #7: Grade 5, *Structure and Properties of Matter* (TG) pp. 170-179. The materials provide unit summative assessment for teachers with a valid and reliable evaluation of student understanding of key unit concepts.

## Criteria Category 4: Access and Equity

Program materials ensure universal and equitable access to high-quality curriculum and instruction for all students and provide teachers with suggestions for differentiation for students with special needs.

**Citations:**

* Criterion #1: Grade K, *Weather and Sky* (TG) pp. xi-xv and 153-156. The materials reflect the goals of access and equity outlined in chapter 10 of the *CA Science Framework*.
* Criterion #1: Grade 3, *Weather and Climate Patterns* (TG) pp. xi-xv, 37-38, and 212-218. The materials reflect the goals of access and equity outlined in chapter 10 of the *CA Science Framework*.
* Criterion #2: Grade 4*, Plant and Animal Structures* (TG) pp. 124-126. The materials include research-based strategies to address the needs of English learners consistent with the CA ELD Standards.
* Criterion #2: Grade 1, *Light and Sound Waves* (TG) pp. 51-52 and 150-151. The materials include research-based strategies to address the needs of English learners consistent with the CA ELD Standards.

## Criteria Category 5: Instructional Planning and Support

The instructional materials provide coherent guidelines for teachers to follow when planning three-dimensional instruction and are designed to help teachers provide effective standards-based instruction.

**Citations:**

* Criterion #2: Grades K-5, all TGs pp. xxv-xxx. The materials provide an estimated instructional time for each activity, lesson, and unit, which allows for student engagement.
* Criterion #3: Grade 3, *Life in Ecosystems* (TG) pp. 38-41. The materials contain a pre-unit assessment that provides guidance in daily lessons and units of instruction with appropriate opportunities for checking for understanding and adjusting lessons, if necessary, to ensure three-dimensional learning.
* Criterion #18: Grade 4, *Changing Earth* (TG). The “Take-Home Science” letter and the assignment “Rocksicle” inform families about the CA NGSS and student progress.
* Criterion #20: Grade 1, *Exploring Organisms* (TG) p. xiii. The materials inform teachers about literacy readers, literacy articles, and “Science in the News” articles that can best complement the standards.
* Criterion #21: Grade 2, *Ecosystem Diversity* (TG) pp. 97-98. The materials provide guidance and support for engaging students in collaborative conversations using grade-level-appropriate academic vocabulary for scientific discourse.

## Edits and Corrections:

The following edits and corrections must be made as a condition of adoption:

| # | Grade Level | Component | Page number(s) | Current text | Proposed corrected text | Reason for edit |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | K | TG: Weather and Sky | SIS 1B | “In the daytime sky. I can see…” | “In the daytime sky, I can see…” | Grammatical error, fragmented sentence |
| 2 | 1 | TG: Explaining Organisms | 37 (multiple places) | Finalize the list to make sure students understand that all living things move, grow, breathe, reproduce, and need food. | Finalize the list to make sure students understand that all living things move, grow, need air, reproduce, and need food.  | Factual errorSaying that plants “breathe” is a misconception. All cells use oxygen and release carbon dioxide- but that is NOT the same as breathing. They all need “air”? |
| 3 | 1 | LR: Sky Watchers | 12 | In summer sunrise happens early. | In summer, sunrise happens early.  | Grammatical errorMissing a comma |
| 4 | 1 | LR: Sky Watchers | 12 | In winter the Sun rises later. | In winter, the Sun rises later.  | Grammatical errorMissing a comma |
| 5 | 2 | TG: Matter | LA 3C | Oh, no! | Oh no! | Grammatical errorRemove the comma |
| 6 | 2 | TG: Ecosystem Diversity | 98 | “magine you have to design an ideal…” | “Imagine you have to design an ideal…” | Typographical errorMissing a capital I to begin the sentence  |
| 7 | 2 | TG: Ecosystem Diversity | SIS 4A (Take Home Science Letter) | Take-Home Sicience Letter (footer) | Take-Home Science Letter | Typographical errorMisspelled “science” |
| 8 | 2 | TG: Ecosystem Diversity | 144 | “leave the paper towel loosely crumpled in the habitat Leave the habitat…” | “leave the paper towel loosely crumpled in the habitat. Leave the habitat…” | Typographical errorMissing a period after “habitat” |
| 9 | 2 | TG: Ecosystem Diversity | 145 | “For the best observation…” | End of sentence is missing. | Typographical/ grammatical errorSentence is incomplete |
| 10 | 2 | TG: Earth Materials | Lesson 2 take-home activity | “earth material:”  | “Earth Material” | Grammatical errorEarth is always capitalized, proper noun |
| 11 | 2 | TG: Earth Materials | 109 | “Be sure that each group gets you approval”  | “Be sure that each group gets your approval” | Grammatical errorChanging the pronoun |
| 12 | 3 | LR: Weather and Climate Patterns | 6 | “This process is call condensation.” | “This process is called condensation.” | Grammatical error |
| 13 | 3 | TG: Weather and Climate Patterns | 71 | 62°F/ 5 = 62°F | 310° F / 5 = 62° F | Mathematical error |
| 14 | 3 | TG: Forces and Interactions | LAC2C-Teacher’s Version | “Literacy and and Science” (footer) | “Literacy and Science” | Grammatical errorExtra “and”  |
| 15 | 3 | TG: Forces and Interactions | 159 | “24 newtons”, “70 newtons” “27 newtons” (or change “circle the capital N” | “24 Newtons,” “70 Newtons” “27 Newtons” (or omit that sentence) | Misleading directionsContradicting directions |
| 16 | 3 | TG: Life in Ecosystems | 50 | “Ask them to discuss how ecosystems and life cycles relate to their …” | End of sentence is missing | Grammatical errorSentence is incomplete |
| 17 | 4 | TG: Changing Earth | 58 | “Students s are likely to suggest…” | “Students are likely to suggest…” | Typographical errorUnneeded “s” |
| 18 | 4 | TG: Changing Earth | SIS 2C | “Unique features if the rock:” | “Unique features of the rock:” | Typographical errorShould be “of” not “if.” |
| 19 | 4 | TG: Energy Works | SIS 5B | “Do not to cut through the center of the paper!” | “Do not cut through to the center of the paper!” OR “Do not cut through the center of the paper!” | Typographical errorExtra word in the sentence |
| 20 | 4 | TG: Plant and Animal Structures | 41 | “(If the seeds touch each other, there may not be enough space for theplants to grow.)” | “(If the seeds touch each other, there may not be enough space for the plants to grow.)” | Typographical error: space needed between “the” and “plants” |
| 21 | 4 | TG: Plant and Animal Structures | SIS 2B:2: Teacher’s Version | “What do you think is does?” | “What do you think it does?” | Grammatical error - wrong word/mistype |
| 22 | 5 | TG: Matter and Energy in Ecosystems | 42 | “(The tall trees shade theplants on the forest floor…)” | “(The tall trees shade the plants on the forest floor…)” | Grammatical error: space needed between “the” and “plants” |
| 23 | 5 | TG: Matter and Energy in Ecosystems | 65 | “A dissection is the cutting or taking apart of something to examine it and learn…” | “A dissection is the cutting or taking apart of something once living to examine it and learn” | Imprecise definition: for something to be “dissected,” it MUST have been living at some point.  |
| 24 | 5 | TG: Earth and Space Systems | 100-101 | “Set out the inflatable globe and a bucket of water at the front of the room. Explain that you will perform a demonstration to help students visualize tides:a. Place the globe gently in the water so it is floating in the middle of the bucket. b. Put both of your hands on top of the globe and push the globe down into the water in a slow, firm motion. Then let the globe rise back up. You may need to repeat this a couple of times. Explain that the force you exert on the globe represents gravity acting on Earth.” | Remove: incorrect | Factual error: the force of pushing your hands down on an inflated ball in water has no relation to Earth’s tides. That would insinuate that the Earth’s gravitational pull is greater and less throughout the day, which is absolutely incorrect.  |
| 25 | K-5 | Innovators in Science | Ellen Ochoa (11) | “Currently, Ochoa is the director of NASA’s Johnson Space Center.” | “Ochoa is the former director of NASA’s Johnson Space Center.” | Factual error: Ochoa left the position in May 2018. |
| 26 | K-5 | Innovators in Science | Ian Joughin (16) | “Ian Joughin is a pioneer in polar research. As a glaciologist at the University of Washington.” | “Ian Joughin is a pioneer in polar research as a glaciologist at the University of Washington.” | Grammatical error:Fragmented sentence |
| 27 | K-5 | Innovators in Science | Jocelyn Bell Burnell (19) | “The lead scientist on Burnell’s team was awarded part of prize.” | “The lead scientist on Burnell’s team was awarded part of the prize.” | Typographical errorMissing the word “the.” |
| 28 | K-5 | Innovators in Science | Neil DeGrasse Tyson (29) | “He is well spoken, funny, and makes difficult topics easy to understand.” | Change “funny” to “engaging.” | Factual error:Information is not factual; it is an opinion. |
| 29 | 3 | TG: Life in Ecosystems | 211 | “The container may then be disposed of in the …” | Complete the sentence | Incomplete sentence |
| 30 | K | TG: Living Things and Their Needs  | 86 | “changes a slight as wearing down a path” | “changes as slight as wearing down a path” | Grammatical error |
| 31 | 3 | TG: Forces and Interactions | 35 | noncontact | non-contact | spelling error |
| 32 | 1 | TG: Light and Sound Wave | SIS 5A.1 | “Construction paper does not make shadows.” (Proposed answer- No) | “Construction paper does make shadows.” (Correct answer is Yes) | Factual error |
| 33 | 1 | TG: Sky Watchers  | SIS 3A | none | Supply answers | Answers are missing |
| 34 | 1 | TG: Sky Watchers | SIS 3B | none | Supply answers | Answers are missing |
| 35 | 1 | TG: Exploring Organisms | SIS 1D | Correct answer for “air” should include “nose.” | “Nose” is not currently included as a correct answer for “air.” | Factual error |
| 36 | 1 | TG: Exploring Organisms | SIS 1D | Remove “mouth” as a correct answer for “space.” | “Mouth” is currently a correct answer for “space.” | Factual error |
| 37 | 1 | TG: Exploring Organisms | 65 EXT “How many is that?” | “uses multiples of ten” | Remove phrase since this does not involve multiples of ten. | Mislabeling/factual error |
| 38 | 1 | TG: Exploring Organisms | 103 | Question asks students to predict traits in next generation. | Remove | Factual error:It is unknown if the parent is homoallele or heteroallele, so this info should be included (different words). |
| 39 | 1 | TG: Exploring Organisms | Summative Assessment Question #3 | “Who does the twin look more like?” | “Who does the identical twin look more like?” | Factual error (twin could look more like Dad than twin if the twins are not identical). |
| 40 | 2 | TG: Matter | 60 | “Identify Phenomenon” note says that to crumple paper then flatten it out again is an example of a physical change. | Physical changes are phase changes (such as melting ice), not changes in physical shape. | Factual error- NGSS definition of “physical change” in PS1.B and 2-PS1-4 is that heating and cooling causes changes that may be permanent. |
| 41 | 2 | TG: Matter, Phenomenon for Lessons 1-5 | 32, 50, 72, 90, 116, | Three birds are building a house, using wood (not twigs), glue, ice, and throwing a party. | Change all “birds” to “kids.” | Factual error: Birds cannot use glue or throw a party. |
| 42 | 2 | TG: Matter, Phenomenon for Lesson 5 | 116 | “Metal on roof (of bird house) begins to rust” | Add “the” before “metal” | Factual error-Type of metal needs to be specified because not all metal rusts, only metals containing iron. |
| 43 | 2 | TG: Matter, Teacher background | Page 118 | “Adding food coloring to water is a physical change and is the result of a transfer of energy.” | remove | Factual error: not only is addition of food coloring to water not a physical change (it is not a phase change, but a mixing of two liquids), it is not the result of a transfer of energy. |
| 44 | 2 | TG: Matter, Teacher background | Page 118 | “Adding effervescent tablet to water (a chemical change) is the result of a transfer of energy.” | remove | The effervescence of tablet is a chemical reaction between the chemicals in the tablet and water and while there may be a temperature change (indicating either an exothermic or endothermic reaction), it is not the RESULT of a transfer of energy, but the cause of the temperature change. |
| 45 | 2 | TG: Matter, INV 5A step 2, 4th bullet | Page 120 | “Crumpling paper” | remove | Factual error- NGSS definition of “physical change” in PS1.B and 2-PS1-4 is that heating and cooling causes changes that may be permanent. |
| 46 | 2 | TG: Matter, INV 5A step 3 all but the 4th bullet | Page 120 | 1) What kind of physical change occurs to the soda can?2) Once the ice cream has melted into a liquid, how can you return it to a solid state?3) Imagine you want to fill the crushed soda can with water. What would you have to do to the soda can?4) Do you think the soda can would ever look the same as it did before you crushed it? | Delete bullets 3, 4, 5 | Factual error: NGSS definition of “physical change” in PS1.B and 2-PS1-4 is that heating and cooling causes changes that may be permanent. |
| 47 | 2 | TG: Matter, INV 5B.1 first and second bullets | 123 | “Students should identify a physical change as a change that affects how something looks…” | “Students should identify a physical change as a change between states of matter.” | Factual error: NGSS definition of “physical change” in PS1.B and 2-PS1-4 is that heating and cooling causes changes that may be permanent. |
| 48 | 2 | TG: Matter, Extension “Candles in the Wind” | Page 130 | “Burning a candle is the result of heat energy.” | “Burning a candle is NOT the result of heat energy.” | Factual error |
| 49 | 2 | TG: Matter, Lit. Article 4B | LA4B | “Adobe can hold heat when cold and release heat when warm.” | “Adobe resists changes in temperature because it is an insulator.” | Factual error: adobe is not a heat pump. |
| 50 | 2 | TG: Matter, Digital tip | Page 120 and elsewhere | Physical change simulation | Remove reference | Does not exist in the program reviewed. |
| 51 | 2 | TG: Matter, 5B, 4th bullet | Page 124 | “When fireworks are set off, heat and light are created.” | “When fireworks are set off, heat and light are released and are the result of a chemical change.” | Correct grammar |
| 52 | 2 | TG: Matter, INV 5b.10 table | Page 126 | Physical Changes1) Reversible state changes (melting wax)2) Mixing without state changes (combining salt and water)3) Changes in shape (molding clay)4) Changes in color (painting a wall)5) Changes in size (grating a potato) | List only changes of state of matter. | Factually incorrect: NGSS definition of “physical change” in PS1.B and 2-PS1-4 is that heating and cooling causes changes that may be permanent. |
| 53 | 2 | TG: Matter TG INV 5B, 4th bullet | Page 125 | “Cutting a pizza” | Remove bullet | Factually incorrect: cutting a pizza is not a physical change. |
| 54 | 2 | TG: Matter INV 5B, top bullet | Page 126 | “Mixing oil and vinegar” | Remove bullet | Factual error: because vinegar and oil do not mix, this is neither a physical nor a chemical change – nothing happens. |
| 55 | 2 | TG: Matter, INV 5B, 3rd bullet | Page 126 | “Painting a pumpkin” | Remove bullet | Factual error: although the pumpkin does not change (not a physical or chemical change), the paint might undergo a chemical change or it might just be an evaporation of solvent – either way, this is not an example of a physical change, which requires a change of state of a material (and evaporation of solvent does not qualify for this since it is a separation of materials in a mixture). |
| 56 | 2 | TG: Matter, Scenario A | 5C SIS | Fix the problem | Remove entire scenario. | Impossible task based on instruction. |
| 57 | 2 | TG: Matter Scenario C | SIS 5C | n/a | Remove entire scenario | Students have not yet learned about insulators and will be unable to complete task based on instruction |
| 58 | 2 | TG: Matter Summative Assessment 2 | At end of book (no page numbers) | “Brick houses cannot be destroyed.” | “Brick houses can be destroyed.” | Factual error |
| 59 | 2 | TG: Matter Summative assessment 3 (answer key) | End of book (no page numbers) | “3. Which of the following properties can be used to describe both a cube of water and a cube of metal? Choose all that apply. a. Hardb. Squarec. Solidd. Wet” | Key should include “wet” as an acceptable answer. | Factual error |
| 60 | 2 | TG: Matter Summative assessment 5 | End of book (no page numbers) | Theresa wants to make blue dye. Choose one of the following materials that she could use to make blue dye. 1. Blue chalk
2. Blueberries
3. Ocean water
4. Blue thread
 | remove | Not tied to instruction. |
| 61 | 2 | TG: Matter Summative assessment 7 | End of book (no page numbers) | Match each object with the physical property.Column 11. Paper clip
2. The sun
3. Honey
4. Air

Column 21. Hot
2. Thick
3. Attracted to magnets
4. Gas
 | remove | Students do not work with magnets until grade 3. This is not tied to instruction. |
| 62 | 2 | TG: Matter, Summative assessment 10, answer key | End of book (no page numbers) | Metal rusts | Remove entire item. | Factual error – not all metals rust – depends on correction of earlier instruction – could just add iron metal, but not sure if that will be removed earlier or not |
| 63 | 2 | TG: Matter Summative assessment 12 | End of book (no page numbers) | Fill a pool with molasses | Remove item | Students probably do not know what molasses is (not in instruction), while it is thick, this is not a reasonable question – could change it to why it does not pour easily, but this is not tied to instruction |
| 64 | 2 | TG: Earth Materials SIM Weathering | No page number-online simulation | (No text) | There is no difference between weathering by wind vs. water | Factually incorrect |
| 65 | 2 | TG: Earth Materials | Page 164 | “They noticed about the slope of hill” | “They noticed about the slope of the hill” | Grammatical error |
| 66 | 2 | TG: Ecosystem Diversity, Lesson 1A | Page 37 | “Food is abiotic.” | “Food is a biotic factor.” | Factual error |
| 67 | 2 | TG: Ecosystem Diversity | Page 57 | “Isopods are insects.” | “Isopods are crustaceans.” | Factual error |
| 68 | 2 | TG: Ecosystem Diversity | Page 116 | “Humans planting flowers… means more plants for animals to eat.” | Remove or change this response. | Factual error |
| 69 | 2 | TG: Ecosystem Diversity | Summative Assessment #10 | “Ken studies insects all over the world. He finds a greater diversity of insects in the rainforest than in the tundra. Why might this be?” | Insects might need more regular water as well as moderate temperature – remove item or fix answer. | Factual error |
| 70 | 3 | TG: Forces and Interactions  | Page 96, item 5, second bullet | “Distance from which the paperclip is attracted to the two magnets increases when the magnetic force increases.” | “Distance from which the paperclip is attracted to the two magnets decreases when the magnetic force increases.” | Factual error |
| 71 | 3 | TG: Forces and Interactions, INV 4A | Pages 112- 117 | “Make sure the north end of the magnet…” | delete | Factual error: It does not matter which end of the magnet is used (as evidenced by their image of a bar magnet with iron filings). |
| 72 | 3 | TG: Forces and Interactions 4B.7 5th bullet | Page 119 | “Iron filings are not magnets.” | “Iron filings are magnets.” | Factual error |
| 73 | 3 | TG: Forces and Interaction, Lesson 4D | Pages 124-127 Question 1 bullet 4 | “What do iron filings tell us about a magnet? (iron filings identify the north and south poles of the magnet).” | Iron filings do not identify N and S poles of magnets – remove. | Factual error: see figure A on page 120 of this TG for an image of a bar magnet with iron filings. |
| 74 | 3 | TG: Forces and Interactions | SIS 4D. | “Electric forces have poles.” | “Electric forces do not have poles.” | Factual error |
| 75 | 3 | TG: Weather and Climate Patterns, Materials List | Pages 33 and 67 | The Materials List | Need to include global relief map, classroom barometer, and weather station to required materials. | Omitted from original list |
| 76 | 4 | TG: Energy Works, Lesson 2 EXT Popcorn Energy | Page 62 | “Beginning with the energy from the sun, review the energy transfers and conversions that occur to make popcorn (light, heat, sound).” | Need to include motion of the popping kernels. | Factual omission/error |
| 77 | 4 | TG: Energy Works | Page 99 | “light bulb” | “buzzer” or “mystery box” | Factual error: the mystery box is a buzzer not a light bulb. |
| 78 | 4 | TG: Energy Works | Pages 138-140 | Investigation 4D (the entire investigation) | remove | Factual error: Aligning marbles as a Newton’s Cradle does not illustrate transfer of energy by waves. |
| 79 | 4 | TG: Energy Works, Lesson 5A #5 Table | Page 173 | “Solar energy does not kill fliers.” | delete | Factual error: there are solar systems that kill fliers, and since this is a distractor, it needs to be deleted (Tonopah, CA is an example). |
| 80 | 4 | TG: Energy Works, Summative Assessment #14 | End of book (no page number) | All the text associated with summative assessment #14 | delete | Students no longer build parallel and series circuits in grade 4. |
| 81 | 4 | TG: Changing Earth | SIS 2A | “metamorphic” | “sedimentary” | Factual error |
| 82 | 4 | TG: Changing Earth | SIS 2A | “sedimentary” | “metamorphic” | Factual error |
| 83 | 5 | TG: Structure and Properties of Matter, Teacher background | Page 65 | “because every substance has a different density, each material has its own boiling point, freezing point, and melting point.” | delete | Factual error: not fixable since lesson builds on this idea. |
| 84 | 5 | TG: Structure and Properties of Matter  | Page 73 | “having a campfire” and “baking bread” | delete | Factual error: these are chemical changes. Just because the bread (or cookie or cake) dough “solidifies” does not make it a physical (phase) change. You have to examine the sum total of all of the physical properties of the before and after materials to decide whether a chemical reaction has occurred (which is not actually done in this TG/set of lessons). |
| 85 | 5 | TG: Structure and Properties of Matter  | Page 94 | “(salt for example, is made up of sodium and chlorine atoms)” | “(salt, for example, is made up of sodium and chlorine ions)” | Factual error |
| 86 | 5 | TG: Structure and Properties of Matter  | Page 95 | “Evaporation occurs when liquid water becomes a gas without reaching its boiling point.” | “Evaporation and vaporization are the same thing when a gas or vapor is formed from a liquid.” | Factual Error: after checking both the Oxford and Webster (unabridged) dictionaries and multiple chemistry textbooks, vaporization and evaporation are defined as being the same thing. There is no distinction between turning into vapor below or at the boiling point. |
| 87 | 5 | TG: Structure and Properties of Matter, Teaching Tip | Page 96 | “Buoyancy is a physical property.” | Replace the word “buoyancy” with “density.” | Factual error: Buoyancy is not a physical property, density is. |
| 88 | 5 | TG: Structure and Properties of Matter  | Page 97 | “Heavier objects are harder and tend to sink while lighter objects are softer and tend to float. Also, magnetic items tend to be made of metal.” | delete | Factual error |
| 89 | 5 | TG: Structure and Properties of Matter, Digital Tip | Page 99 | “Explain that milk and water have similar dense and will mix.” | delete | Grammatical error/typo AND factual error – by this definition, sand and corn syrup should mix to form a solution. |
| 90 | 5 | TG: Structure and Properties of Matter | SIS3A | “buoyancy” | “buoyant in water” | Universal swap is needed throughout the program since these are not the same, and they mean buoyant in water. |
| 91 | 5 | TG: Structure and Properties of Matter | Page 158 | recipe | Need to add a liquid. | A batter will not form with one egg and only dry ingredients. |
| 92 | 5 | TG: Structure and Properties of Matter, 5A | Pages 148-155 | (See comments for item numbers 46, 47, 48, 53, and 55 for grade 2 about what a physical change is. The same examples are used here incorrectly.)-Page 148 (lesson overview): “The lesson guides students in identifying the evidence of a physical change when matter is manipulated or mixed.” - Page 148 (Objective 2): “Provide evidence that mixing substances results in a physical or chemical change.”-Investigation A, numbers 1-4 (regarding physical changes that are not physical changes), etc. | delete | Factual error- NGSS definition of “physical change” in PS1.B and 2-PS1-4 is that heating and cooling causes changes that may be permanent. |
| 93 | 5 | TG: Structure and Properties of Matter, LA 5B | Pages 155-157 | “Popping corn is a physical change.” | Popping corn is a chemical change, so delete article. | Factual error, or replace the article |
| 94 | 5 | LR: Matter and Energy ln Ecosystems | Page 3 | Molecule | Needs definition | Omission – term has not been defined before. |
| 95 | 5 | TG: Matter and Energy in Ecosystems  | Page 61 | “Producers have the most energy because they obtain it directly from the sun.” | “Producers do NOT have the most energy because they obtain it directly from the sun.” | Factual error |

## Social Content Citations:

The panel identified the following social content violations:

| # | SC Code | Grade Level | Component | Page Number(s) | Current Text | Proposed Corrected Text | Reason for Citation |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | L1 | 1 | TG: Sky Watchers | 110 | “Oreo Moon Phases” | “Chocolate sandwich cookie moon phases” | “Oreo” is a trademark name. |
| 2 | L1 | 4 | TG: Changing Earth | 69 | “Velcro” | Substitute with generic hook and loop. | “Velcro” is a trademark name. |
| 3 | L1/L2 | 4 | TG: Energy Works | 55 | “Ping Pong” | Table tennis product. | “Ping Pong” is a trademark name. |

California Department of Education, August 2018