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

# REVIEW PANEL ADVISORY RECOMMENDATION 2018 SCIENCE ADOPTION OF INSTRUCTIONAL MATERIALS

| **Publisher** | **Program** | **Grade Level(s)** |
| --- | --- | --- |
| Delta Education LLC | FOSS Next Generation Middle School | 6–8i |

## Program Summary:

FOSS Next Generation Middle School includes: FOSS® Next Generation Middle School includes: Investigations Guide (IG), Science Resources Book (SRB), Digital-Only Resources (DOR), Teacher Resources (TR), Science Notebook Masters (SNM), Teacher Masters (TM), Assessment Coding Guide (ACG), Assessment Charts (AC).

## Recommendation:

FOSS Next Generation Middle School is recommended for adoption for 6–8i 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 6: LS1-1 Diversity of Life Instructional Guide pp. 231, 241-242, and 256. ESS3-5 Weather and Water Instructional Guide pp. 598, 611, 647 and Assessment Coding Guide p. 66; Grade 7: LS2-1 Populations and Ecosystems Instructional Guide pp. 504-506, 515. ESS2-3 Earth History Instructional Guide pp. 480-482. PS 1-2 Chemical Interactions Instructional Guide pp. 126, 140 and Assessment Coding Guide pp. 16, 22, 44, and 48; Grade 8: LS4-1 Heredity and Adaptation Instructional Guide pp. 116, 118, 132 and Assessment Coding Guide pp. 12, 14, and 34. ESS1-1 Instructional Guide pp. 288 and Assessment Coding Guide pp. 10, 22, and 24. PS1-1 Gravity and Kinetic Energy Instructional Guide pp. 274-279. The program contains numerous examples of the standard being fully covered.

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* Criterion #7: Grade 7 Populations and Ecosystems IG: pp. 531-534, SRB: 141-143. Grade 8 Waves IG: pp. 144-145, DOR: Tacoma Narrows Bridge Collapse 1 video https://archive.org/details/SF121. Tacoma Narrows Bridge Collapse 2 video https://www.youtube.com/watch?v=qbOjxPCfaFk. The program provides examples that use primary sources, such as scientific research, case studies, and photographs, that are integrated into the three-dimensional learning, as grade-level appropriate.
* Criterion #13: Grade 6 TR, pp. H1-H54, pp. E1-E21; Grade 7 Earth History, IG pp. 435-441. The program contains examples that the materials provide support for students to develop grade-level appropriate academic language and discipline-specific vocabulary through their use in context in classroom around science phenomena (science talk), and through well-written and grade-level appropriate text resources.
* Criterion #19: Grade 6 Diversity of Life IG pp. 67-84 Material chapter, Safety data sheets, https://www.deltaeducation.com/resources/materials-management/sds. There is strong evidence that instructional resources engage students in the SEPs. Teacher resources will include discussion of expendable and permanent equipment and materials necessary to conduct activities, guidance on obtaining those materials inexpensively, recycling or disposing of materials, and explicit instructions for organizing and safely conducting instruction, labs and activities. (Aligned to the Science Safety Handbook for California Public Schools, California Department of Education 2014).

## Criteria Category 2: Program Organization

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

**Citations:**

* Criterion #1: Grade 6, FOSS Human Systems Interactions IG: pp. 38-39 and 44-50. The program contains evidence where there is sequential organization of the material and provides structure concerning what students should learn each year and allows teachers to convey the science content incorporating the three-dimensional learning expressed in the California Next Generation Science Standards.
* Criterion #2: Grade 7, TR pp. E1-E22. There is evidence within the program where instructional resources support teacher questioning strategies as a tool to assess students’ knowledge and skills, promotes student-to-student discourse, and guide student learning.
* Criterion #11: Grade 8, Planetary Science IG p. 3. The program contains evidence where teacher resources include references to locate related supplemental open educational resources.
* Criterion #13: Grades 6-8, TR. The program contains exemplars for each grade level that ancillary and support resources are an integral part of the instruction and are aligned with the California Next Generation Science Standards with fundamental guidance on multiple topics.
* Criterion #13: Grade 7, Foss Earth History IG pp. 50-55. The program shows strength with course descriptions aligned to specific progression of so that students completing each course sequence can build on the progression through the planned sequence of the units.

## 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 #3: Grade 6 Weather and Water IG pp. 696-698, Grade 7 Chemical Interactions pp. 663-665, Grade 8 Electromagnetic Force pp. 316-318. The teacher material provided support to engage students in tasks that afford both learning and formative assessment opportunities.
* Criterion #4: Grade 6, 7, and 8, Instructional Guides and Assessment Coding Guide. There are formative assessment tools and practices at key stages in the unit of instruction designed to elicit current understandings and preconceptions.
* Criterion #8: Grade 8, Waves Student Notebook pp. 50-57, Student Notebook pp. 20, and Assessment Coding Guide pp. 22-23. The writing and performance tasks provide evidence of student progress toward meeting the three-dimensions of the CA NGSS.
* Criterion #9: Grade 7, Earth History Instructional Guide pp. 678 and Assessment Coding Guide pp. 3-59. The materials include analytical rubrics for teachers to use and student work expectations for completing assessment tasks.
* Criterion #11: Grade 6, Weather and Water Instructional guide pp. 650 Teacher Master OO. The materials include guidance on measuring students’ ability to apply information literacy skills when obtaining and evaluating information about science topics.

## 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 #4.1: Grades 6-8, TR pp. F1-F42. The program’s teacher resource guide shows strength by including strategies that align with the access and equity goal, outlined in the California Next Generation Science Standards.
* Criterion #4.2: Grades 6-8, TR pp. F17-F20. The program contains exemplars with suggested research-based strategies to address the needs of English learners consistent with the California English Language Development Standards.
* Criterion #4.3: Grades 6-8, TR pp. F34-F35. The program shows strength with the suggested research-based strategies to address the needs of students with disabilities.

## 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 #3: Grade 6, FOSS Diversity of Life, IG: pp. 181 (Step 13), 192 (Step 16), 201 (Step 7), 663-667, 670-673. The program contains examples of 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 #10: Grade 7, FOSS Earth History, IG: pp. 95, 109, 165, 183, 240 (Step 22). The program contains examples of student resources that provide experiences that clearly build to the development of those learning goals without explicitly stating those goals prior to the instruction.
* Criterion #15: Grade 8, FOSS Electromagnetic Force, IG: pp. 84-89, 140-145, 196-201, 260-265. The program includes examples of teacher resources that provide background information about important events, diverse people, places, ideas, and scientific principles.
* Criterion #13: Grade 7, FOSS Chemical Interactions, IG: pp. 37-39, 60-79, 114-117, 162-165, 210-213, 266-269, 326-329, 380-383, 426-429, 478-481, 550-553, and 634-637. The materials include terms from the CA NGSS and CA Science Framework and they are used appropriately and accurately in the instructions.

## 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 | 8 | IG/SRB | 106/77 | One opinion is that an asteroid impact in southern Mexico led to a catastrophic event. | Some evidence suggests that an asteroid impact in southern Mexico led to a catastrophic event. | Clarity |
| 2 | 7 | IG | 102, 108, 126 | Gender | Replace “gender” with “sex.” | Clarity |
| 3 | 7 | IG | 560 | Ozone is an element… | Ozone is a molecule… | Simple factual error |
| 4 | 7 | IG | 574 | O2 is an element… | O2 is a molecule… | Simple factual error |
| 5 | 8 | IG | 172, Step 20 | In the 1950s… | In the 1950s and with data from Roselind Franklin… | Clarity |
| 6 | 7 | SRB | 30 | Solids: “particles... are touching tightly and bonded”. | Solids: “particles… are touching tightly”. | Simple factual error |
| 7 | 8 | SRB | 30 | Mendel called the first offspring from the P generation the first filial generation... He identified them as the F1 generation. | Mendel called the first offspring from the P generation the first filial generation... He identified them as the F1 hybrid generation (hybrid, because F1 plants had pure bred parents with opposite traits). | Simple factual error |
| 8 | 8 | SRB | 31 | ...the ratio was 3:1. | …the ratio was consistently close to 3:1. | Simple factual error |
| 9 | 8 | SRB | 32 | ...that would happen for every 3. | …that would happen for about every 3. | Simple factual error |
| 10 | 8 | SRB | 35 | ...he could predict the number of offspring that would be tall or short. | …he could predict the approximate number of offspring that would be tall or short. | Simple factual error |
| 11 | 8 | DOR | Heredity Slideshow  https://foss-ca.schoolspecialty.com/delegate/ssi-wdf-ucm-webContent/Contribution%20Folders/FOSS/multimedia/Heredity\_Adaptation/HereditySlideshow/index.html (link no longer available) | n/a | When they are describing protein, the figures are of body cells or bacteria, but none of the figures actually show protein molecules, until slide 19 | Simple factual error |
| 12 | 8 | SRB | 49 | Mutations are the source for adaptation | Mutations are one source for adaptation. | Clarification. |
| 13 | 8 | IG | 272 | Unless a mutation leads to death the mutation will be passed on to the offspring and might lead to variation. | Unless a mutation leads to death, the mutation might be passed on to offspring which would increase the variation. | Clarification. |
| 14 | 8 | SNM | 2 | Question 1 | Question 1: Pause the video at 4:59 and ask students to compare the embryos of the three species, make observations, and identify any patterns they see. Question 2: Previous “Question 1.” | Simple factual error. |
| 15 | 6 | IG | 352, Step 13 Diagram | Continue by telling students. | Would 1 kg. of water heat up at the same rate as 10 kg. of water? Continue by telling students. | Clarification. |

## Social Content Citations: None

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