

Next Generation Science Standards for CA Public Schools - Third Grade

3-5-ETS1-Engineering Design

3-5-ETS1-Engineering Design

Students who demonstrate understanding can:

3–5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

The performance expectations above were developed using the following elements from the NRC document *A Framework for K–12 Science Education*:

Science and Engineering Practices

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems.

- Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem. (3–5-ETS1-2)

Disciplinary Core Ideas

ETS1.B: Developing Possible Solutions

- Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. (3–5-ETS1-2)
- At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. (3–5-ETS1-2)

Crosscutting Concepts

Influence of Science, Engineering, and Technology on Society and the Natural World

- Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands. (3–5-ETS1-2)

Connections to other DCIs in third grade: N/A

Articulation of DCIs across grade-bands: K-2.ETS1.A ; K-2.ETS1.B ; K-2.ETS1.C ; MS.ETS1.B ; MS.ETS1.C

California Common Core State Standards Connections:

ELA/Literacy –

- RI.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (3–5-ETS1-2)
- RI.5.7** Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (3–5-ETS1-2)
- RI.5.9** Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (3–5-ETS1-2)

Mathematics –

- MP.2** Reason abstractly and quantitatively. (3–5-ETS1-2)
- MP.4** Model with mathematics. (3–5-ETS1-2)
- MP.5** Use appropriate tools strategically. (3–5-ETS1-2)
- 3-5OA.** Operations and Algebraic Thinking (3–5-ETS1-2)

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a Practice or Disciplinary Core Idea.

**California clarification statements, marked with double asterisks, were incorporated by the California Science Expert Review Panel.

The section entitled "Disciplinary Core Ideas" is reproduced verbatim from *A Framework for K–12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas*.

This resource has been created and is maintained by the [San Diego County Office of Education](#) by J. Spiegel and C. Cochrane, 2016. It is adapted from the DRAFT CA Science Framework, [CA NGSS Standards](#) and the [Next Generation Science Standards](#). Neither Achieve nor the lead states and partners that developed the Next Generation Science Standards was involved in the production of, and does not endorse, this product.

August 2016.