

MS-ETS1-3 Engineering Design

California Alternate Assessment for Science—Item Content Specifications

# MS-ETS1-3 Engineering Design

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
| --- | --- | --- |
| Analyze data from tests to identify how aspects of two different design solutions can be modified or combined to create a better solution. | 1. Ability to analyze data from tests to identify how aspects of different design solutions can be modified to create a better solution. 2. Ability to analyze data from tests to identify how aspects of two different design solutions can be combined to create a better solution. | Identify evidence of similarities or differences in features of solutions. |

## CA NGSS Performance Expectation

Students who demonstrate understanding can:

**Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.**

## Mastery Statements

Students will be able to:

* Identify a similarity in the features of two solutions
* Identify a difference in the features of two solutions
* Use data to identify one modification of a solution that will improve the solution
* Identify two solutions that can be combined to create one improved solution
* Use data to identify one aspect of each of two solutions that will improve the solutions when they are combined to create one improved solution
* Use data to identify two solutions that can be combined to form one improved solution and identify how the new solution is improved

## Environmental Principles and Concepts

Principle 5—Decisions affecting resources and natural systems are based on a wide range of considerations and decision-making processes.

## Possible Phenomena or Contexts

*Note that the list in this section is not exhaustive or prescriptive.*

**Possible contexts include the following:**

* Forms of pollution
* Loss of wildlife habitat
* Enhancing mobility for people with disabilities
* Enhancing access to clean water
* Solar and wind energy

## Additional Assessment Boundaries

* None listed at this time

## Additional References

California Science Test Item Specification for MS-ETS1-3

<https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-ms-ets1-3.docx>

Environmental Principles and Concepts <http://californiaeei.org/abouteei/epc/>

The *2016 Science Framework for California Public Schools Kindergarten through Grade Twelve* <https://www.cde.ca.gov/ci/sc/cf/cascienceframework2016.asp>

Appendix 1: Progression of the Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts in Kindergarten through Grade Twelve

<https://www.cde.ca.gov/ci/sc/cf/documents/scifwappendix1.pdf>

Appendix 2: Connections to Environmental Principles and Concepts

<https://www.cde.ca.gov/ci/sc/cf/documents/scifwappendix2.pdf>

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