

MS-ETS1-2 Engineering Design

California Alternate Assessment for Science—Item Content Specifications

# MS-ETS1-2 Engineering Design

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
| --- | --- | --- |
| Use a systematic process to evaluate how well two different design solutions meet the criteria and constraints of the problem. | 1. Ability to use a systematic process to evaluate how well two different design solutions meet the criteria and constraints of the problem. | Recognize how a solution through a systematic process would solve the problem. |

## CA NGSS Performance Expectation

Students who demonstrate understanding can:

**Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.**

## Mastery Statements

Students will be able to:

* Recognize how a solution solves a simple problem
* Recognize a criterion that both of two solutions meet
* Recognize a constraint or limit, that affects both of two solutions
* Match two solutions to criteria that they meet or constraints that affect them

## Possible Phenomena or Contexts

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

**Possible contexts include the following:**

* Pollution caused by wasting resources such as paper or using disposable products
* Destroying natural areas for commercial development
* Enhancing mobility for people with disabilities
* Enhancing access to clean water
* Using solar or wind energy to help power a school

## Additional Assessment Boundaries

* None listed at this time

## Additional References

California Science Test Item Specification for MS-ETS1-2

<https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-ms-ets1-2.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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