

4-ESS3-2 Earth Processes and Human Activity

California Alternate Assessment for Science—Item Content Specifications

# 4-ESS3-2 Earth Processes and Human Activity

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
| --- | --- | --- |
| Identify and compare human solutions to reduce the impact of a natural Earth process (e.g., earthquake, flood, volcanic activity) on humans. | 1. Ability to identify a human solution to reduce the impact of a natural Earth process on humans. | Recognize that different types of hazards result from natural Earth processes (e.g., earthquakes, volcanic eruptions). |

## **CA NGSS Performance Expectation**

Students who demonstrate understanding can:

**Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.** [Clarification Statement: Examples of solutions could include designing an earthquake resistant building and improving monitoring of volcanic activity.] *[Assessment Boundary*: *Assessment is limited to earthquakes, floods, tsunamis, and volcanic eruptions.]*

## Mastery Statements

Students will be able to:

* Identify natural hazards when shown pictures or videos of natural hazards
* Identify human solutions for minimizing the impact of natural hazards
* Identify human solutions that increase the safety of individuals during natural hazard events

## Environmental Principles and Concepts

Principle 1—The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services.

Principle 2—The long-term functioning and health of terrestrial, freshwater, coastal, and marine ecosystems are influenced by their relationships with human societies.

Principle 4—The exchange of matter between natural systems and human societies affects the long-term functioning of both.

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:**

* Earthquakes, with where and how to position oneself during an earthquake
* Floods, with planning ahead to leave and listening to news to know the risk
* Volcanic eruptions, with planning ahead to leave and listening to news to know the risk
* Changes in building designs to reduce the impacts of natural events

## Additional Assessment Boundaries

* Item scenarios should not depict extremely violent situations or human or animal injury.
* Item scenarios should not use the term tsunami. They may refer to flooding waves or ocean floods.

## Additional References

California Science Test Item Specification for 4-ESS3-2

<https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-4-ess3-2.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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