

MS-ESS3-2 Earth and Human Activity

California Alternate Assessment for Science—Item Content Specifications

# MS-ESS3-2 Earth and Human Activity

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
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| Use resources (e.g., maps, charts, images of natural hazards) to identify patterns in past occurrences of catastrophic events in each of two regions to predict which location may receive a future similar catastrophic event. | 1. Use resources (e.g., maps, charts, images of natural hazards) to identify patterns in past occurrences of catastrophic events in each of two regions to predict which location may receive a future similar catastrophic event. | Recognize that some natural hazards (e.g., volcanic eruptions, severe weather) can be predicted while others are not predictable. |

## **CA NGSS Performance Expectation**

Students who demonstrate understanding can:

**Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.** [Clarification Statement: Emphasis is on how some natural hazards, such as volcanic eruptions and severe weather, are preceded by phenomena that allow for reliable predictions, but others, such as earthquakes, occur suddenly and with no notice, and thus are not yet predictable. Examples of natural hazards can be taken from interior processes (such as earthquakes and volcanic eruptions), surface processes (such as mass wasting and tsunamis), or severe weather events (such as hurricanes, tornadoes, and floods). Examples of data can include the locations, magnitudes, and frequencies of the natural hazards. Examples of technologies can be global (such as satellite systems to monitor hurricanes or forest fires) or local (such as building basements in tornado-prone regions or reservoirs to mitigate droughts).]

## Mastery Statements

Students will be able to:

* Recognize examples of natural hazards that can be predicted
* Recognize examples of natural hazards that cannot be predicted
* Use information in a map, chart, data table, or image of a natural hazard to identify a pattern in past occurrences of catastrophic events
* Use identified patterns in past occurrences of catastrophic events in each of two regions to predict which location will most likely have a similar catastrophic event

## 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.

## Possible Phenomena or Contexts

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

**Possible contexts include the following:**

* Predicting severe weather and volcanic activity using monitoring technology
* Identifying hazards that are difficult to predict accurately, such as landslides or earthquakes.
* Predicting flooding based on weather information and the history and geography of an area
* Using historic data to identify regions with a higher risk of natural hazard

## Additional Assessment Boundaries

* Do not include tsunamis in item contexts. May refer to flooding waves or ocean floods.

## Additional References

California Science Test Item Specification for MS-ESS3-2

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