

HS-ESS3-1 Earth and Human Activity

California Alternate Assessment for Science—Item Content Specifications

# HS-ESS3-1 Earth and Human Activity

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
| --- | --- | --- |
| Explain the cause-and-effect relationship between human activity (e.g., population size, where humans live, types of crops grown) and changes in the amounts of natural resources, the occurrence of natural hazards or changes in climate using evidence. | 1. Ability to explain the cause-and-effect relationship between human activity and changes in the amounts of natural resources using evidence. 2. Ability to explain the cause-and-effect relationship between human activity and changes in the occurrence of natural hazards using evidence. 3. Ability to explain the cause-and-effect relationship between human activity and changes in the climate using evidence. | Match the effect of a natural hazard (e.g., hurricanes, floods, droughts) on a human activity. |

## **CA NGSS Performance Expectation**

Students who demonstrate understanding can:

**Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.** [Clarification Statement: Examples of key natural resources include access to fresh water (such as rivers, lakes, and groundwater), regions of fertile soils such as river deltas, and high concentrations of minerals and fossil fuels. Examples of natural hazards can be from interior processes (such as volcanic eruptions and earthquakes), surface processes (such as tsunamis, mass wasting and soil erosion), and severe weather (such as hurricanes, floods, and droughts). Examples of the results of changes in climate that can affect populations or drive mass migrations include changes to sea level, regional patterns of temperature and precipitation, and the types of crops and livestock that can be raised.]

## Mastery Statements

Students will be able to:

* Identify effects of natural hazards on human activities
* Recognize the relationship between human activities and the amount of natural resources
* Recognize the relationship between human activities and natural hazards
* Recognize the relationship between human activities and climate change

## California 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 3—Natural systems proceed through cycles that humans depend upon, benefit from, and can alter.

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:**

* The incidence of natural disasters
* Climate trends
* Changes in sea level and coastline over time
* Relationships between current population density and impact of natural disasters
* Relationships between current population density and availability of natural resources

## Additional Assessment Boundaries

Natural hazards are limited to volcanic eruptions, earthquakes, flooding waves, landslides, soil erosion, floods, and droughts.

## Additional References

California Science Test Item Specification for HS-ESS3-1

<https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-hs-ess3-1.docx>

California 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>

Posted by the California Department of Education, July 2025