

3-ESS2-2 Earth's Systems

California Science Test—Item Content Specifications

# 3-ESS2-2 Earth's Systems

Students who demonstrate understanding can:

Obtain and combine information to describe climates in different regions of the world.

| Science and Engineering Practices | Disciplinary Core Ideas | Crosscutting Concepts |
| --- | --- | --- |
| Obtaining, Evaluating, and Communicating Information  Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods.  Obtain and combine information from books and other reliable media to explain phenomena. | ESS2.D: Weather and Climate  3. Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. | Patterns  Patterns of change can be used to make predictions. |

## Assessment Targets

Assessment targets describe the focal knowledge, skills, and abilities for a given three-dimensional Performance Expectation. Please refer to the Introduction for a complete description of assessment targets.

### Science and Engineering Subpractice(s)

Please refer to appendix A for a complete list of Science and Engineering Practices (SEP) subpractices. Note that the list in this section is not exhaustive.

8.1 Ability to comprehend and evaluate text in terms of its validity, reliability, and sources

### Science and Engineering Subpractice Assessment Targets

Please refer to appendix A for a complete list of SEP subpractice assessment targets. Note that the list in this section is not exhaustive.

8.1.1 Ability to obtain relevant information through conducting searches in print and online sources and evaluate the reliability of the obtained information

8.1.2 Ability to recognize, interpret, and critique key ideas in scientific and engineering text, including a mix of words, symbols, tables, diagrams, and graphs

8.1.3 Ability to summarize information from a single source and/or combine and synthesize information from multiple sources to address a question or solve a problem

### Disciplinary Core Idea Assessment Targets

#### ESS2.D.3

* Describe patterns of typical weather conditions in different areas
* Describe how climates vary across different regions
* Describe how climate can vary over years
* Analyze historical weather patterns
* Make predictions about weather conditions based on historical patterns

### Crosscutting Concept Assessment Target(s)

CCC1 Use patterns of change to make predictions

## Examples of Integration of Assessment Targets and Evidence

Note that the list in this section is not exhaustive.

Task provides climate data for two areas:

* Determines the similarities and differences between the two areas (8.1.1, ESS2.D.3, and CCC1)

Task provides data detailing the average summer and winter temperatures and average seasonal precipitation levels for a particular location:

* Correlates a description of a type of climate with the climate present (e.g., equatorial, polar, coastal, mid-continental) based on the temperature and precipitation data (8.1.1, ESS2.D.3, and CCC1)

Task provides research materials for students to look up historical climate data:

* Obtains relevant information on climate patterns/variations (8.1.2, ESS2.D.3, and CCC1)

Task provides climate data for multiple areas:

* Predicts typical temperatures and/or precipitation based on the data (8.1.3, ESS2.D.3, and CCC1)

Task provides research materials for students to look up historical climate data:

* Synthesizes information from multiple sources (8.1.3, ESS2.D.3, and CCC1)
* Makes predictions of typical weather patterns in a region based on historical data (8.1.3, ESS2.D.3, and CCC1)
* Selects the type of proxy data among the research materials that can be used (e.g., tree rings, ice cores, ocean/lake sediment data, etc.) to determine the past climate in an area (8.1.3, ESS2.D.3, and CCC1)

## Possible Phenomena or Contexts

Note that the list in this section is not exhaustive.

* Patterns of variation in temperature, humidity, atmospheric pressure, wind, precipitation, etc., over long periods of time
* Climates in different regions (e.g., equatorial, polar, coastal, mid-continental)
* Impact of latitude, altitude, terrain, bodies of water, etc.
* Proxy data (e.g., tree rings, ocean sediment, ice cores) as evidence of past and changing climates

## Common Misconceptions

Note that the list in this section is not exhaustive.

* Average daily temperature or seasonal temperature depends entirely on the number of hours of sunlight.
* Weather and climate are the same thing.
* Climate does not shift over time.
* All regions have similar climates.

## Additional Assessment Boundaries

None listed at this time.

## Additional References

[3-ESS2-2 Evidence Statement](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/3-ESS2-2%20Evidence%20Statements%20June%202015%20asterisks.pdf) <https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/3-ESS2-2%20Evidence%20Statements%20June%202015%20asterisks.pdf>

The *2016 Science Framework for California Public Schools Kindergarten through Grade 12*

Appendix 1: Progression of the Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts in Kindergarten through Grade 12 <https://www.cde.ca.gov/ci/sc/cf/documents/scifwappendix1.pdf>

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