

MS-ESS2-1 Earth’s Systems

California Alternate Assessment for Science—Item Content Specifications

# MS-ESS2-1 Earth’s Systems

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
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| Identify relationships between components in a model of energy flows and matter cycles within and among Earth’s systems, including the Sun and Earth’s interior as primary energy sources. | 1. Ability to identify relationships between components in a model of energy flows and matter cycles (e.g., weathering, erosion, sedimentation) among Earth’s systems, with the Sun as the primary energy source. 2. Ability to identify relationships between components in a model of energy flows and matter cycles (e.g., melting, crystallization, deformation) among Earth’s systems, with Earth’s interior as the primary energy source. | Identify types of Earth materials that can be located at the surface (exterior) and/or in the interior. |

## **CA NGSS Performance Expectation**

Students who demonstrate understanding can:

**Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process.** [Clarification Statement: Emphasis is on the processes of melting, crystallization, weathering, deformation, and sedimentation, which act together to form minerals and rocks through the cycling of Earth’s materials.] *[Assessment Boundary*: *Assessment does not include the identification and naming of minerals.]*

## Mastery Statements

Students will be able to:

* Identify common materials used by humans that are found on or in the crust of Earth
* Identify the role of wind and water in erosion of sediments
* Identify the process of forming layers of rock and soil (sediments)
* Identify examples of rock being melted by the heat from Earth’s core
* Identify examples of melted magma cooling to become solid rock
* Identify the Sun as the driver of weathering and erosion due to its role in the water cycle and formation of wind
* Identify the core of Earth as the cause of rocks melting and changing

## Possible Phenomena or Contexts

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

**Possible contexts include the following:**

* Models of weathering (e.g., rocks breaking up), erosion, and deposition that include the Sun as a source of energy
* Models that focus on the Sun as a source of the energy for some weathering and erosion processes
* The changes as rocks become sediment and then sedimentary rock
* The changes as rock is melted and then cooled to form crystals
* Earth’s hot interior provides energy to drive processes that cause rocks to melt or change

## Additional Assessment Boundaries

* None listed at this time

## Additional References

California Science Test Item Specification for MS-ESS2-1

<https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-ms-ess2-1.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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