

5-PS1-2 Matter and Its Interactions

California Alternate Assessment for Science—Item Content Specifications

# 5-PS1-2 Matter and Its Interactions

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
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| Recognize through observation that the total weight of matter is conserved by comparing the weight of an object before and after it changes from a liquid to a solid and from a solid to a liquid. | 1. Ability to recognize that the total weight of matter is conserved by comparing the weight of an object before and after it changes from a liquid to a solid and from a solid to a liquid (e.g., water in a clear plastic bag that is frozen and defrosted has the same weight).
 | Recognize the change in state from liquid to solid or from solid to liquid of the same material. |

## CA NGSS Performance Expectation

Students who demonstrate understanding can:

**Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.** [Clarification Statement: Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances.] *[ Assessment Boundary: Assessment does not include distinguishing mass and weight.]*

## Mastery Statements

Students will be able to:

Identify whether a substance is a liquid or a solid

Recognize that when a substance changes from one state to another it is still the same substance

Identify the weight of the substance after it has changed states

Identify that the weight is not changed when a substance changes state

Recognize that conservation of weight can be observed by measuring the weight of the object before and after it changes state

## Possible Phenomena or Contexts

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

**Possible contexts include the following:**

* Materials changing from a solid to a liquid and vice versa
* The weight of common foods before and after they have melted or been frozen

## Additional Assessment Boundaries

* Do not assess phase changes to the gaseous state or formation of solutions.

## Additional References

California Science Test Item Specification for 5-PS1-2

<https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-5-ps1-2.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>

*Posted by the California Department of Education, May 2020*