

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 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
* Comparing the relative amounts of a substance before and after a change in state of matter

## 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>

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>

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