

MS-PS4-2 Waves and Their Applications in Technologies for Information Transfer

California Alternate Assessment for Science—Item Content Specifications

# MS-PS4-2 Waves and Their Applications in Technologies for Information Transfer

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
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| Identify how light waves or sound waves are reflected, absorbed, or transmitted through various materials (e.g., water, air, glass) by using a model. | 1. Ability to identify how light waves are reflected, absorbed, or transmitted through various materials (e.g., water, air, glass) by using a model. 2. Ability to identify how sound waves are reflected, absorbed, or transmitted through various materials (e.g., water, air, glass) by using a model. | Recognize that light can have different brightness and color. |

## **CA NGSS Performance Expectation**

Students who demonstrate understanding can:

**Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.** [Clarification Statement: Emphasis is on both light and mechanical waves. Examples of models could include drawings, simulations, and written descriptions.] *[Assessment Boundary*: *Assessment is limited to qualitative applications pertaining to light and mechanical waves.]*

## Mastery Statements

Students will be able to:

* Recognize an example in which light is changing in intensity (getting brighter or dimmer)
* Recognize when light changes from one color to another
* Identify an example in which light is being reflected, absorbed, or transmitted
* Identify an example in which sound is being reflected, absorbed or transmitted
* Identify why a material reflects (material is shiny), absorbs (material is not clear), or transmits (material is clear) light

## Possible Phenomena or Contexts

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

**Possible contexts include the following:**

* Diagrams of sound or light waves being produced and then reflected, absorbed or transmitted based on everyday experiences such as mirrors, windows or windshields, walls, clothing, etc.

## Additional Assessment Boundaries

* None listed at this time

## Additional References

California Science Test Item Specification for MS-PS4-2

[https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-ms-ps4-2.docx](https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-3-ls4-2.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>

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