

3-PS2-1 Motion and Stability: Forces and Interactions

California Alternate Assessment for Science—Item Content Specifications

# 3-PS2-1 Motion and Stability: Forces and Interactions

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
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| Identify through observation and demonstration ways to change the motion of an object (e.g., size or mass of the object, direction of forces).  | 1. Ability to identify ways to change the motion of an object.
 | Identify a push or a pull as a way to change the motion of an object.  |

## CA NGSS Performance Expectation

Students who demonstrate understanding can:

**Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object**. [Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.] *[Assessment Boundary*: *Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.]*

## Mastery Statements

Students will be able to:

* Identify a push
* Identify a pull
* Identify whether a push or a pull is responsible for moving an object
* Identify forces that will move or stop objects
* Identify forces that will change the motion of a moving object

## Possible Phenomena or Contexts

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

**Possible contexts include the following:**

* A force acting on an object initially at rest (e.g., kicking a ball)
* A force acting on an object already in motion (e.g., tapping a rolling marble, stopping a rolling bicycle)

## Additional Assessment Boundaries

* None listed at this time

## Additional References

California Science Test Item Specification for 3-PS2-1

<https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-3-ps2-1.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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