



Coherence and Alignment Among Science Curriculum, Instruction, and Assessment (CASCIA) Project

Grade 8 Unit 1: Forces and Energy

Task 1 Prompt 1 Part A Scored and Annotated Anchor Set

July 2024

Grade 8 Unit 1: Forces and Energy, Task 1 Prompt 1 Part A Scored and Annotated Anchor Set was developed with funding from the U.S. Department of Education under the Competitive Grants for State Assessments Program CFDA 84.368A. The contents of this paper do not represent the policy of the U.S. Department of Education, and no assumption of endorsement by the Federal government should be made.

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CASCIA Grade 8 EOU Assessment 1 Task 1: Storing Grocery Carts

Prompt 1 Part A Score Point 4

Prompt 1 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 1 Part A.	No aspect of the response is correct	Response includes one (1) of the four (4) key aspects	Response includes two (2) of the four (4) key aspects	Response includes three (3) of the four (4) key aspects	Response includes the following key aspects: - Force arrows are labeled - Force arrows are equal in length and opposite in direction - The force of the cart is pointing toward the wall - The force of the wall is pointing toward the cart

Score Point 4 (4/4 aspects met)

- Part A
 - Includes force arrows that are labeled.
 - Includes force arrows of equal length and opposite direction.
 - Includes the arrow showing the force of the cart pointing toward the wall.
 - Includes the arrow showing the force of the wall pointing toward the cart.

Prompt 1

Part A.

The construction engineer decides to develop a model to show the store owner the forces involved in the collision.

Complete **Model 1** to show the forces involved in the collision if a shopper pushes the cart into the wall. Use information in the key to:

- Draw arrows to show the amount and direction of the forces during the collision.
- Label the forces in the model as:
 - Force of the cart
 - Force of the wall

Model 1. Grocery Cart Wall Collision



KEY

- The length of the arrow shows the amount of force:
 - large force
 - small force
- The direction of the arrow shows the direction of the force.

CASCIA Grade 8 EOU Assessment 1 Task 1: Storing Grocery Carts

Prompt 1 Part A Score Point 3

Prompt 1 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 1 Part A.	No aspect of the response is correct	Response includes one (1) of the four (4) key aspects	Response includes two (2) of the four (4) key aspects	Response includes three (3) of the four (4) key aspects	Response includes the following key aspects: - Force arrows are labeled - Force arrows are equal in length and opposite in direction - The force of the cart is pointing toward the wall - The force of the wall is pointing toward the cart

Score Point 3 (3/4 aspects met)

- Part A
 - Includes force arrows that are labeled.
 - Does **NOT** include force arrows of equal length.
 - Includes the arrow showing the force of the cart pointing toward the wall.
 - Includes the arrow showing the force of the wall pointing toward the cart.

Prompt 1

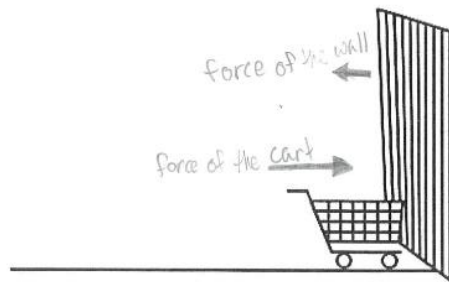
Part A.

The construction engineer decides to develop a model to show the store owner the forces involved in the collision.

Complete **Model 1** to show the forces involved in the collision if a shopper pushes the cart into the wall. Use information in the key to:

- Draw arrows to show the amount and direction of the forces during the collision.
- Label the forces in the model as:
 - Force of the cart
 - Force of the wall

Model 1. Grocery Cart Wall Collision



KEY

- The length of the arrow shows the amount of force:
 - large force

 - small force

- The direction of the arrow shows the direction of the force.

CASCIA Grade 8 EOU Assessment 1 Task 1: Storing Grocery Carts

Prompt 1 Part A Score Point 2

Prompt 1 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 1 Part A.	No aspect of the response is correct	Response includes one (1) of the four (4) key aspects	Response includes two (2) of the four (4) key aspects	Response includes three (3) of the four (4) key aspects	Response includes the following key aspects: - Force arrows are labeled - Force arrows are equal in length and opposite in direction - The force of the cart is pointing toward the wall - The force of the wall is pointing toward the cart

Score Point 2 (2/4 aspects met)

- Part A
 - Includes force arrows that are labeled.
 - Does **NOT** include force arrows of equal length and opposite direction.
 - Does include the arrow showing the force of the cart pointing toward the wall.
 - Does **NOT** include the arrow showing the force of the wall pointing toward the cart (i.e., The student draws the force arrow for the wall but points the arrow downward toward the wall instead of toward the cart.).

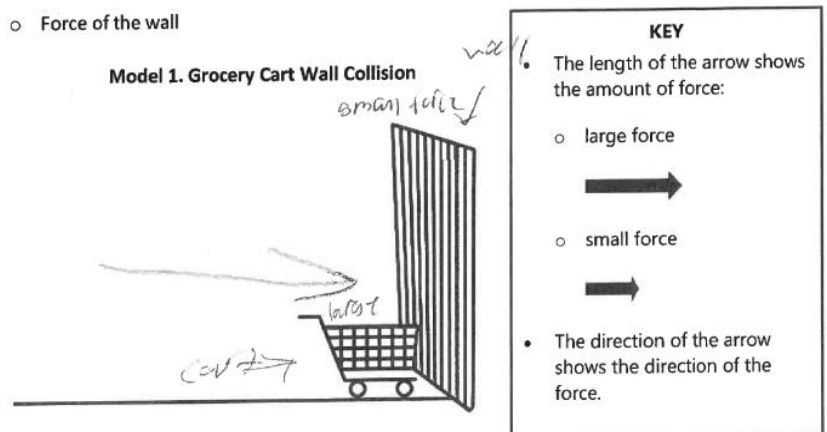
Prompt 1

Part A.

The construction engineer decides to develop a model to show the store owner the forces involved in the collision.

Complete **Model 1** to show the forces involved in the collision if a shopper pushes the cart into the wall. Use information in the key to:

- Draw arrows to show the amount and direction of the forces during the collision.
- Label the forces in the model as:
 - Force of the cart
 - Force of the wall



CASCIA Grade 8 EOU Assessment 1 Task 1: Storing Grocery Carts

Prompt 1 Part A Score Point 1

Prompt 1 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 1 Part A.	No aspect of the response is correct	Response includes one (1) of the four (4) key aspects	Response includes two (2) of the four (4) key aspects	Response includes three (3) of the four (4) key aspects	Response includes the following key aspects: - Force arrows are labeled - Force arrows are equal in length and opposite in direction - The force of the cart is pointing toward the wall - The force of the wall is pointing toward the cart

Score Point 1 (1/4 aspects met)

- Part A
 - Does **NOT** include force arrows that are labeled (i.e., The force arrows are not labeled “cart” and “wall.”).
 - Does **NOT** include force arrows of equal length.
 - Does **NOT** include the arrow showing the force of the cart pointing toward the wall (i.e., The large force arrow is not near the cart, nor is it labeled as “cart.”).
 - Includes the arrow showing the force of the wall pointing toward the cart.

Prompt 1

Part A.

The construction engineer decides to develop a model to show the store owner the forces involved in the collision.

Complete **Model 1** to show the forces involved in the collision if a shopper pushes the cart into the wall. Use information in the key to:

- Draw arrows to show the amount and direction of the forces during the collision.
- Label the forces in the model as:
 - Force of the cart
 - Force of the wall

Model 1. Grocery Cart Wall Collision



KEY

- The length of the arrow shows the amount of force:
 - large force
 - small force
- The direction of the arrow shows the direction of the force.

CASCIA Grade 8 EOU Assessment 1 Task 1: Storing Grocery Carts

Prompt 1 Part A Score Point 0

Prompt 1 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 1 Part A.	No aspect of the response is correct	Response includes one (1) of the four (4) key aspects	Response includes two (2) of the four (4) key aspects	Response includes three (3) of the four (4) key aspects	Response includes the following key aspects: - Force arrows are labeled - Force arrows are equal in length and opposite in direction - The force of the cart is pointing toward the wall - The force of the wall is pointing toward the cart

Score Point 0 (0/4 aspects met)

- Part A
 - Does **NOT** include force arrows that are labeled.
 - Does **NOT** include force arrows of equal length and opposite direction.
 - Does **NOT** include the arrow showing the force of the cart pointing toward the wall (i.e., The student has an arrow behind the cart that is pointed toward the wall. However, it is unclear if it was meant to represent the force of the cart.).
 - Does **NOT** include the arrow showing the force of the wall pointing toward the cart.

Prompt 1

Part A.

The construction engineer decides to develop a model to show the store owner the forces involved in the collision.

Complete **Model 1** to show the forces involved in the collision if a shopper pushes the cart into the wall. Use information in the key to:

- Draw arrows to show the amount and direction of the forces during the collision.
- Label the forces in the model as:
 - Force of the cart
 - Force of the wall

Model 1. Grocery Cart Wall Collision



KEY

- The length of the arrow shows the amount of force:
 - large force
 - small force
- The direction of the arrow shows the direction of the force.