Science Virtual Learning

6th Grade Science

Force

April 10th, 2020

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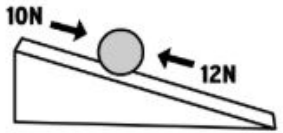
Lesson: April 10th, 2020

Objective/Learning Target:

I can calculate the net force acting on an object.

Warm Up:

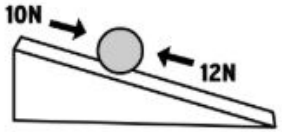
What direction will the hot air balloon move?



Will the ball move up or down the ramp?

Warm Up: Answer Key

What direction will the hot air balloon move?



Will the ball move up or down the ramp?

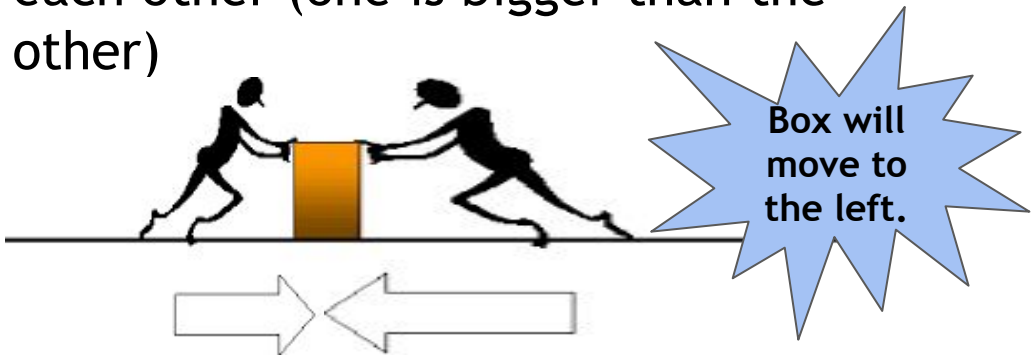
If you think that both objects will move **up**, you are correct.

Now let's explore more about calculating Net Force.

Video: Calculating Net Force

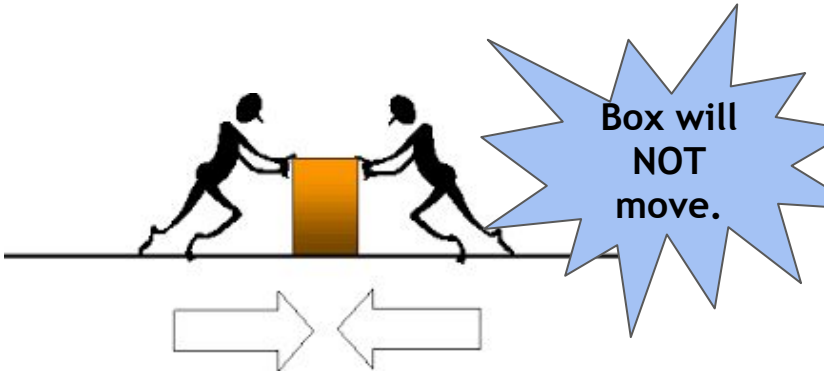
Unbalanced force: Can cause an object to start moving, stop moving, or change direction

Ex: 2 people pushing a box towards each other (one is bigger than the other)



Balanced force: Equal forces acting on one object in opposite directions

Ex: 2 people pushing a box towards each other (they are the same size)



Net force: The overall force on an object when all the individual forces acting on an object are added together

The net force would be 5N to the left.

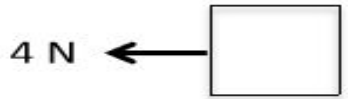
Vector (arrow): Shows the magnitude and direction of a force

Remember: If vectors are pointing in **same direction, add** the forces together. If vectors are pointing in **opposite directions, subtract.**

Practice:

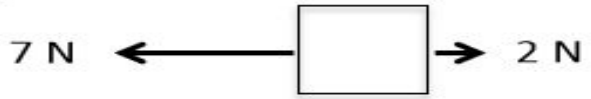
Calculate the net force of the box in each problem. Be sure to include the direction of the force as well (left or right).

1.



Net Force:

2.

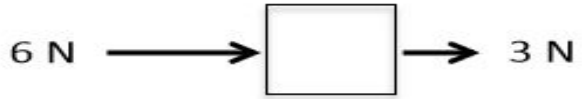


Net Force:

3.

Net Force:

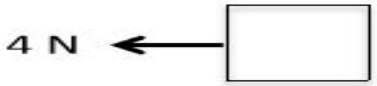
4.



Net Force:

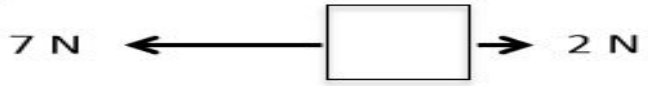
Practice: Answer Key

1.



Net Force: 4 N to the left (Unbalanced Force)

2.

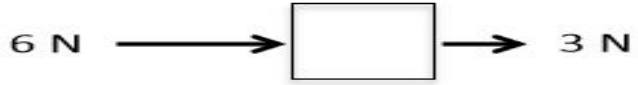


Net Force: 5 N to the left (Unbalanced Force)

3.

Net Force: 0 N (Balanced Force)

4.

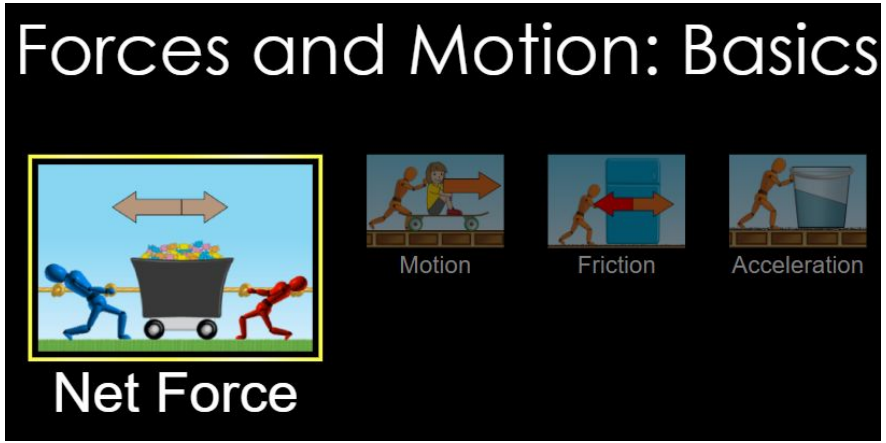


Net Force: 9 N to the right (Unbalanced Force)

Practice:

Use the Net Force simulation to play a game of tug-of-war to learn more about balanced and unbalanced forces!

SELECT



Practice:

Complete this Quizizz to test your understanding of calculating Net Force.

Additional Practice:

Net Force Game

You may use a calculator for the game if you'd like.

Net Forces Powerpoint