

Name \_\_\_\_\_

Date 10/22/18  
Science 7 **NOTES**

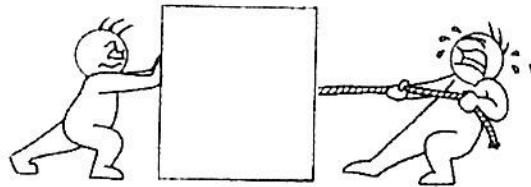
Nearpod Forces Notes

**In this lesson students will:**

- Understand what a force is.
- Understand the difference between balanced and unbalanced forces.
- Be able to calculate net force.

What is a force?

A force is a push or a pull  
on an object.



How are forces measured?

Forces are measured in Newtons (N)  
Unit of force is a Newton (N)

An arrow is drawn to show both magnitude (strength) and direction of the force applied.

**Types of Forces:**

**Balanced Forces**

**Unbalanced Forces**

Equal in strength	Not equal in strength
Do not change an object's motion	Causes a change in the object's motion

## Rules for Calculating Net Force

- To calculate the net force, you subtract the smaller force from the larger force.
- Net force answers give you the strength of the net force in Newtons (N), and an arrow showing the direction of movement.
- When two or more forces act in the same direction they are added together.


### **Big Idea Question:**

What causes objects to move or stay still?

Open up PhET simulation "Forces and Motion."

#### **TASK 1**

- Place 2 people that are the same size the same distance away from the cart.
- Make a prediction about the movement of the cart.
- Click Go!
- AFTER you have observed the actual movement, click on the sum of the forces box and on values at the top right hand corner of the simulation. Record the number in the data chart.

	<b>Predicted Movement</b>	<b>Actual Movement (none, left, right)</b>	<b>Sum of Forces and direction of the cart.</b>
Same size, same placement on rope. 	no movement	none	0N no movement

Exit Card:  
What causes objects to move or stay still?

Claim: (Answer the Big Idea Question.)

Forces cause an object to move or stay still.

Evidence: (Provide support for your claim.)

When a ball is rolling friction causes it to slow down  
The same amount of force on each side causes an object to  
stay still

Analysis Questions/Reasoning:

- Give an example of a balanced force. When an object is not moving  
OR when an object is moving at  
a constant speed
- Give an example of an unbalanced force. Anything moving - Ex dropping a  
pencil.
- True or false? Balanced forces cause a change in motion. T/F (F)  
How do you know this?

Balanced forces do not cause a change in motion  
because the sum of the forces is zero