Science Virtual Learning

3rd Grade Forces and Motion

April 6, 2020

3rd Grade Math
Lesson: 4/6/20

Learning Target:

I can plan and carry out an experiment to show the effects of balanced and unbalanced forces on an object.

Background:

- Students learn to describe ways to change the motion and direction of an object and amount of force in 2nd grade.
- Students learn the difference between a balanced and unbalanced force in 3rd grade.

Let's Get Started:

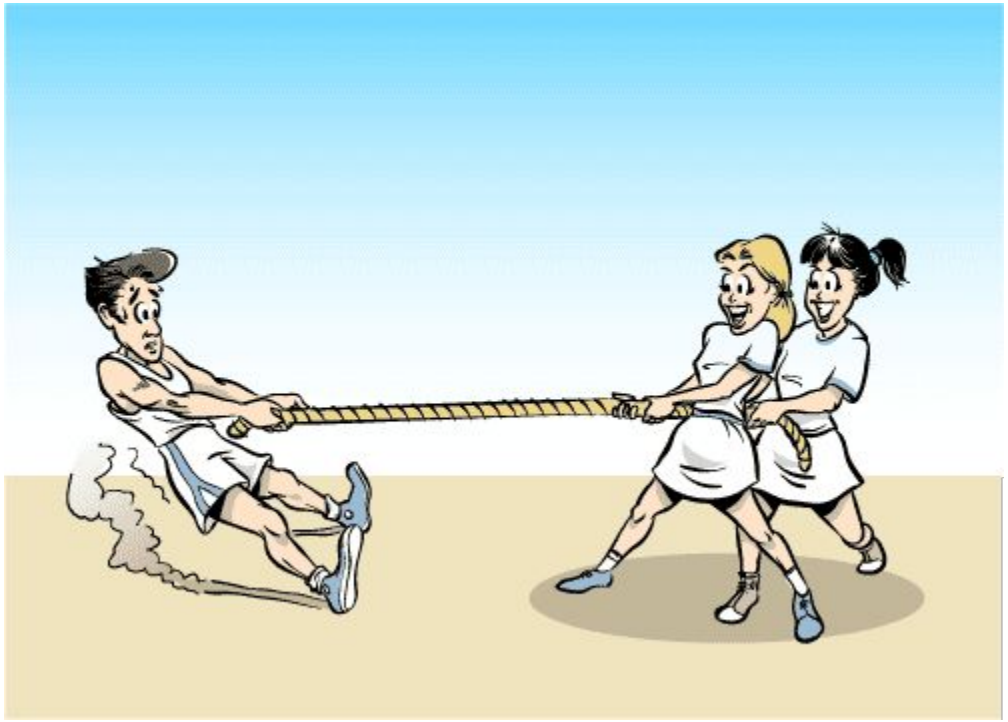
Watch Videos:

1. Bill Nye the Science Guy: Balance
2. Generation Genius- Balanced and Unbalanced Forces
3. Watch this Anchor Lesson

Practice #1:
Is this picture showing a balanced or unbalanced force??

Think back to the

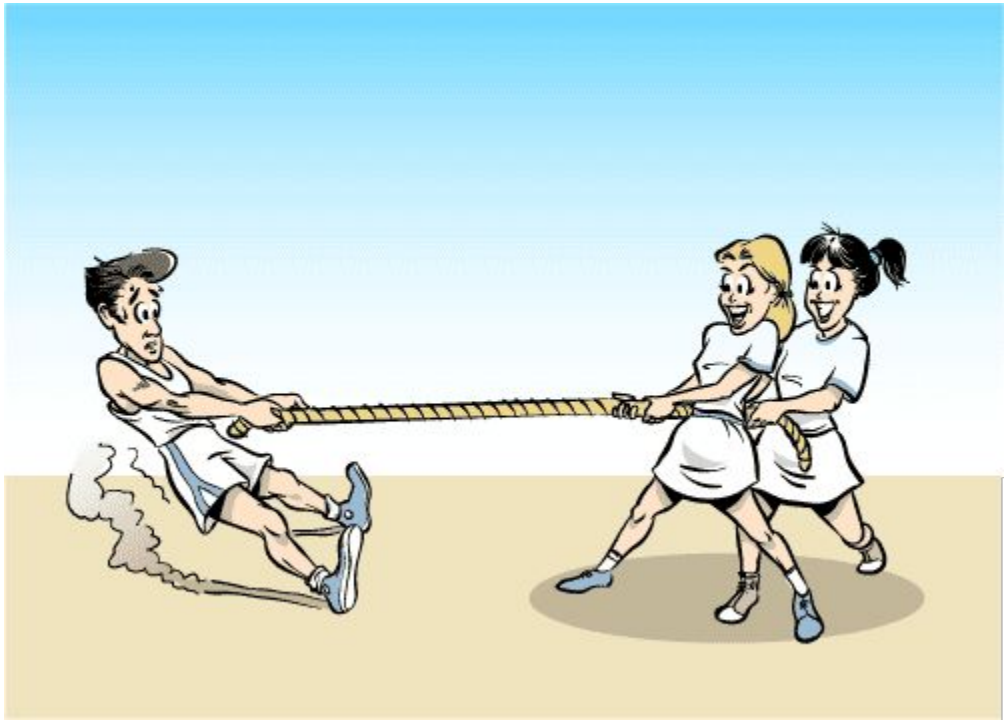
- A balanced force is when two forces pulling in the opposite direction are equal.
- An unbalanced force is when one force is greater than the other.



Practice #1:
Is this picture showing a balanced or unbalanced force??

Think back to the

- A balanced force is when two forces pulling in the opposite direction are equal.
- An unbalanced force is when one force is greater than the other.



Answer: Unbalanced Force

Practice #2:
Is this picture showing a balanced or unbalanced force??

Think back to the 

- A balanced force is when two forces pulling in the opposite direction are equal.
- An unbalanced force is when one force is greater than the other.

Practice #2:
Is this picture showing a balanced or unbalanced force??

Think back to the

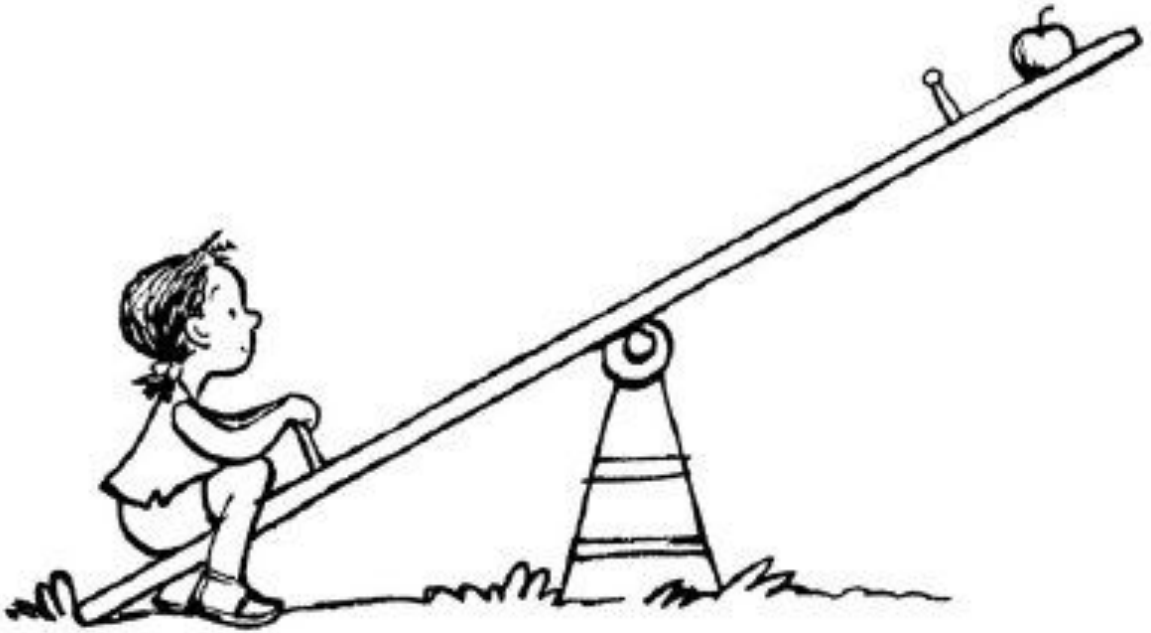
- A balanced force is when two forces pulling in the opposite direction are equal.
- An unbalanced force is when one force is greater than the other.

Answer: Balanced Force

Practice #3:
Is this picture showing a balanced or unbalanced force??

Think back to the

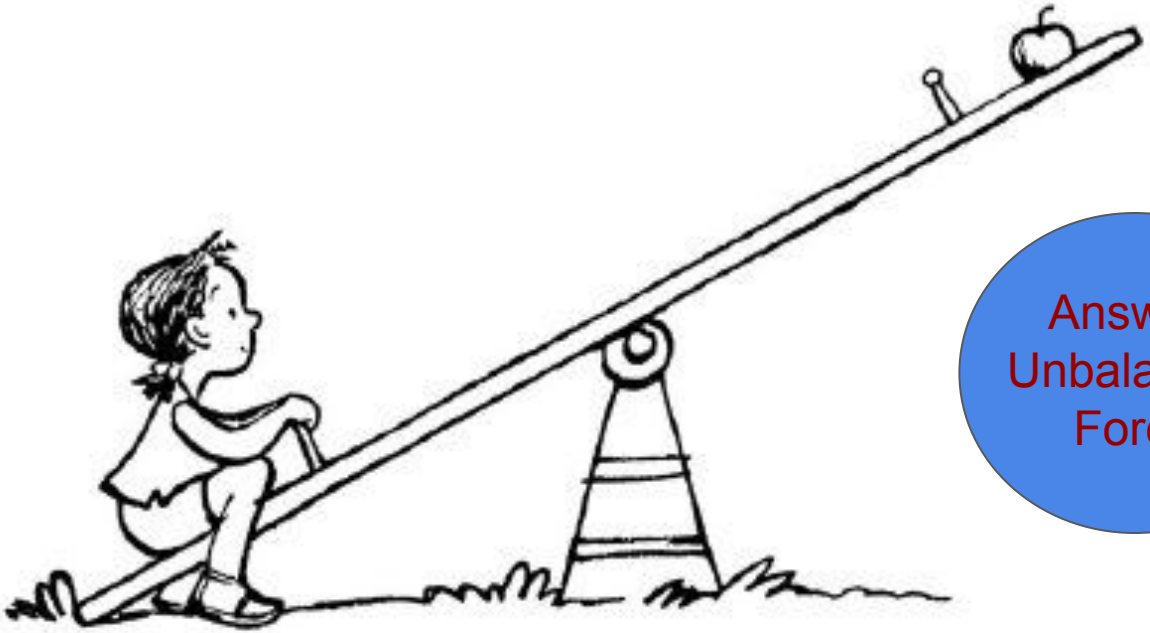
- A balanced force is when two forces pulling in the opposite direction are equal.
- An unbalanced force is when one force is greater than the other.



Practice #3:
Is this picture showing a balanced or unbalanced force??

Think back to the

- A balanced force is when two forces pulling in the opposite direction are equal.
- An unbalanced force is when one force is greater than the other.



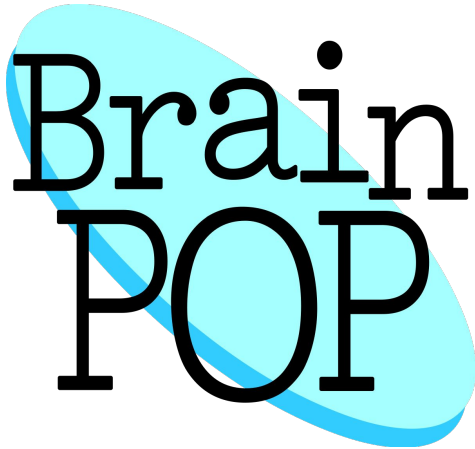
Answer: Unbalanced Force

Practice on your own:

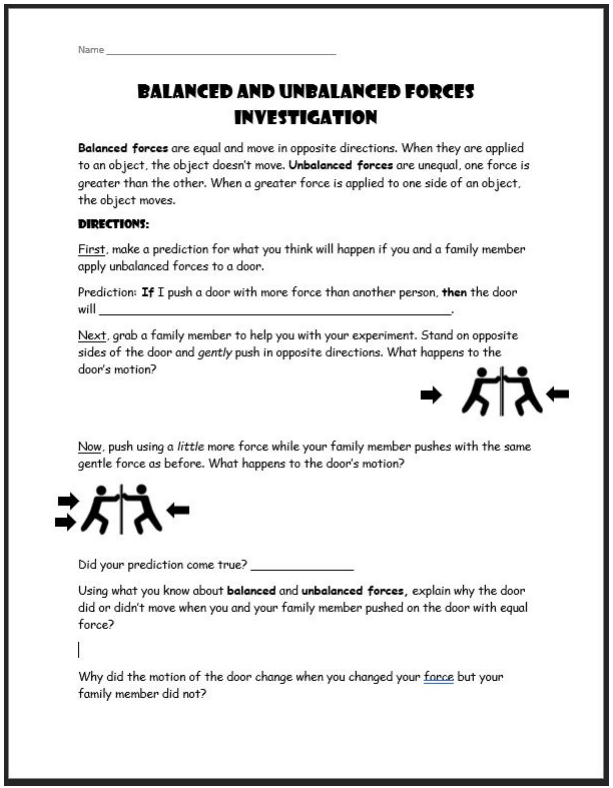
Go to this website:

Brain Pop

1. Click on the intro to practice balancing the forces.
2. Practice balancing forces on the seesaw in the Balance Lab.
3. Play the game to show your understanding of balanced and unbalanced forces.



Practice:
Complete this page in your packet.



Name _____

BALANCED AND UNBALANCED FORCES INVESTIGATION

Balanced forces are equal and move in opposite directions. When they are applied to an object, the object doesn't move. **Unbalanced forces** are unequal, one force is greater than the other. When a greater force is applied to one side of an object, the object moves.

DIRECTIONS:

First, make a prediction for what you think will happen if you and a family member apply unbalanced forces to a door.

Prediction: **If** I push a door with more force than another person, **then** the door will _____.

Next, grab a family member to help you with your experiment. Stand on opposite sides of the door and *gently* push in opposite directions. What happens to the door's motion?

Now, push using a *little* more force while your family member pushes with the same gentle force as before. What happens to the door's motion?

Did your prediction come true? _____

Using what you know about **balanced** and **unbalanced forces**, explain why the door did or didn't move when you and your family member pushed on the door with equal force?

Why did the motion of the door change when you changed your force but your family member did not?

Click here to open worksheet.

Self Check:

1. Was this lesson?
   - ❑ easy,
   - ❑ just right
   - ❑ hard

2. Explain to a family member at home the difference between a balanced and unbalanced force.

Go tell someone in your home your answers!