Science Virtual Learning

6th Grade Science:
Forces & Newton's Laws Review

April 24, 2020

6th Grade Science
Lesson: April 24, 2020

Objective/Learning Target:

- Students will review forces and Newton's Three Laws of Motion.

Essential Question:

- How can we describe an object's motion?

Warm-Up:

Q: If you are pedaling a bicycle down the street, and stop pedaling eventually the friction between the tires and the ground will make the bike stop. Which of the Three Laws of Motion explain this? Why?

Warm-Up: **Answer**

Q: If you are pedaling a bicycle down the street, and stop pedaling eventually the friction between the tires and the ground will make the bike stop. Which of the Three Laws of Motion explain this? Why?

A: The First Law. *The first law states that an object in motion remains in motion unless acted upon by an unbalanced force. Friction from the ground is an unbalanced force.*

Key Terms:

acceleration- how quickly an object increases its speed.

force- a push or a pull. The strength of a force is measured in Newtons (N).

inertia- the tendency of an object to resist a change in its motion.

mass- the amount of matter in an object

momentum- a measurement of the amount of motion an object has.
momentum= mass x velocity (p=mv)

velocity- speed in a certain direction

Forces Review: What is a Force?

- A *force* is a push or a pull.
- Similarly, we can see that forces either repel or attract.
- *Repel* means to push apart and *attract* means to pull towards.
- There are some basic forces such as gravity and electromagnetism.

Basic (Fundamental) Forces:

- Gravity
- Electromagnetism*

*(sometimes referred to separately as *electrical force* and *magnetic force*)

Other Forces:

- Applied Force
- Friction
- Air Resistance (Fluid Friction)
- Tension Force
- Spring Force

Review: Laws of Motion

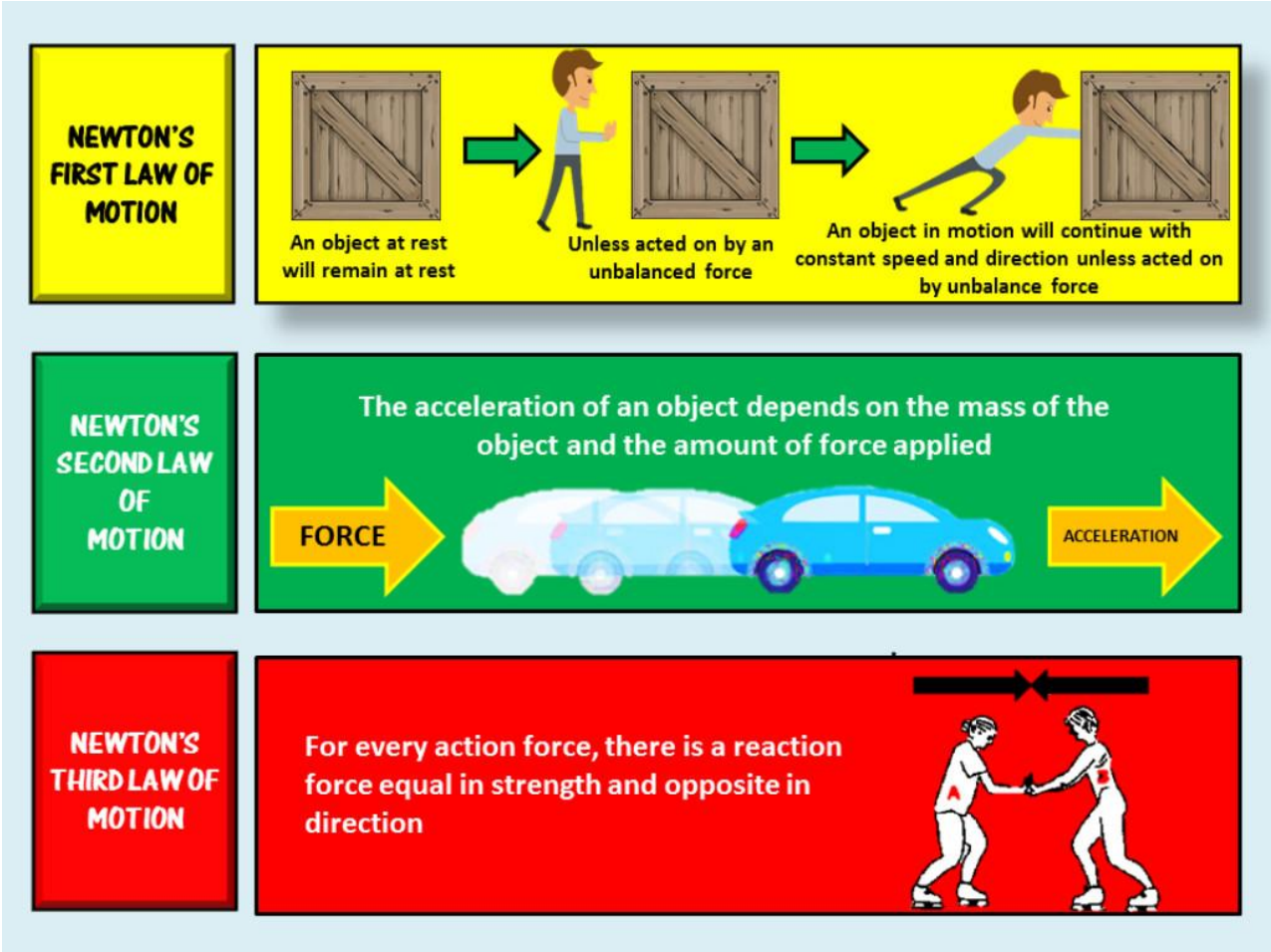
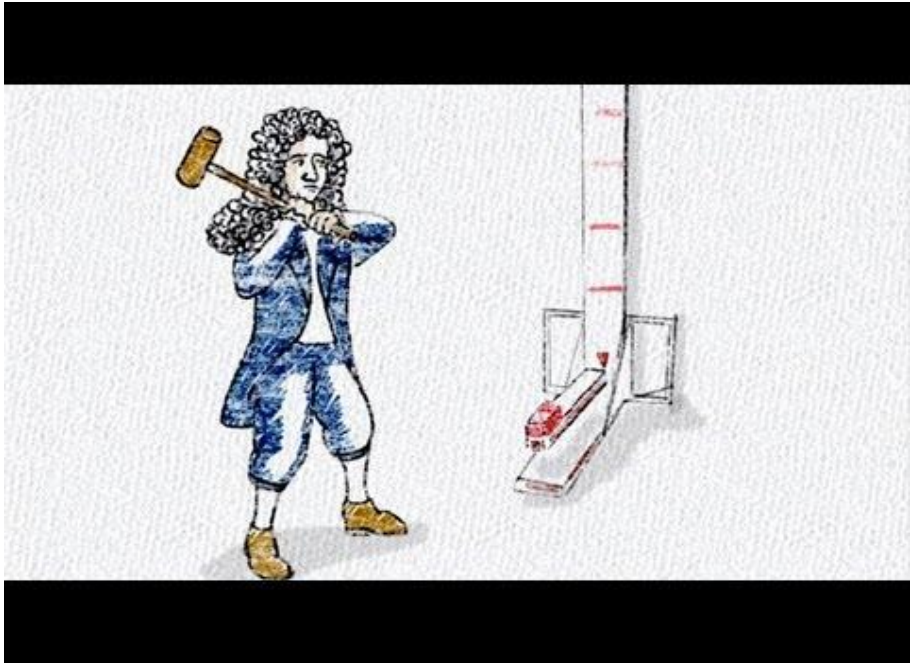


Image from www.owlcation.com

- Watch the video reviewing Newton's Laws of Motion.

Write one of the following from the video:

- **a fact**
- **a question**
- **a drawing**
- **a vocabulary term**



- Watch the video reviewing Newton's Laws of Motion.

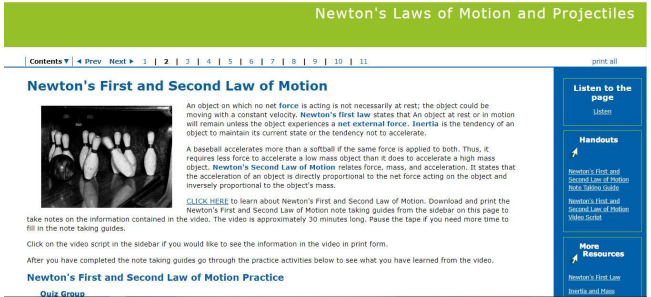
Sample Answers:

- **1st Law = Inertia**
- **What would happen if everyone on Earth pedaled a bike in the same direction at once?**
- **a drawing: answers will vary**
- **Momentum is the amount of motion**

Practice 1:

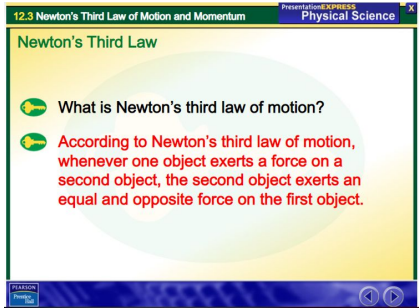
- Read the review of Newton's First and Second Law of Motion.

- Answer the questions below the article, then click "Submit Answers" to check your answers.



Practice 2:

- Read the slides of Newton's Third Law of Motion.
- Do the five practice problems. You may use scratch paper. The answer key is on each slide after the problem.



Summary:

- A force is a push or a pull.
- Newton's Laws of Motion are three laws that describe the movement of objects.
- Each law describes an object's motion in regards to other objects, force or kinetic energy.
- Each law can describe an object's motion using math (i.e. quantitatively).

Additional Practice:

- Forces Quizizz
- Physics for Kids Review of Newton's Laws.
- Practice quiz on Newton's Laws.
- IXL problems on the First and Second Laws.
- IXL problems on the Third Law.

Remember you do not need to log in to IXL. Just complete the 5 practice questions.