Science Virtual Learning

6th Grade Science: Momentum

April 22, 2020

6th Grade Science
Lesson: April 22, 2020

Objective/Learning Target:

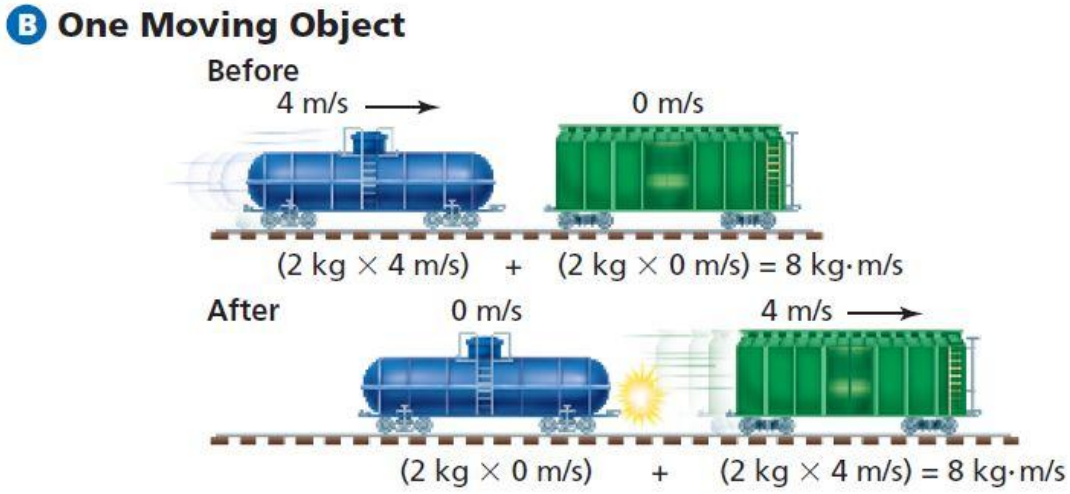
I can explain and demonstrate how energy is transferred to or from an object as it moves.

Essential Question:

How can you determine the amount of motion of an object?

Warm-Up:

Before the cars collide, the blue car has a momentum of 8kg·m/s. Afterwards, what is its momentum? Why?

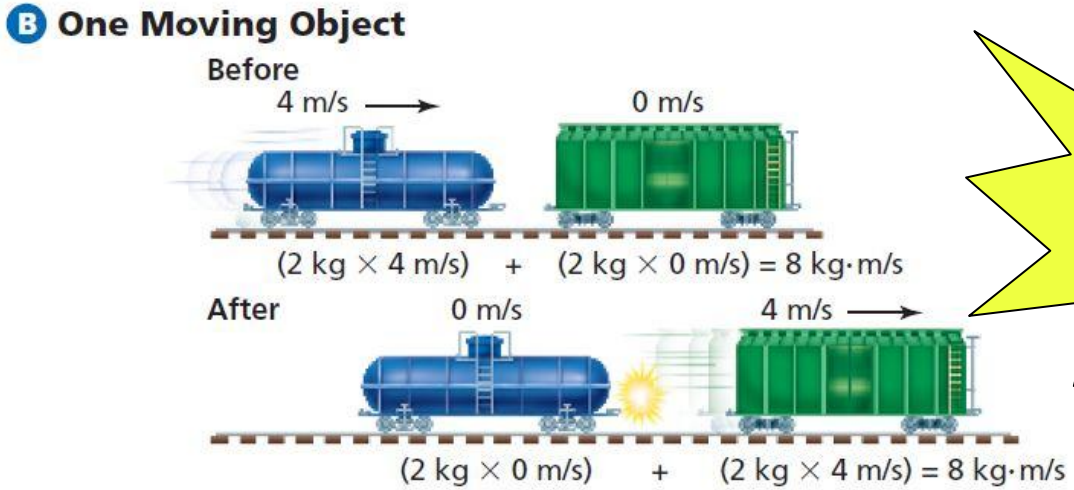


Warm-Up: Answer

Before the cars collide the blue car has a momentum of 8kg·m/s. Afterwards, what is its momentum? Why?

Answer:

No momentum. All of the momentum of the blue car was transferred to the green car. This is The Law of Conservation of Momentum.



Notice the equation for momentum (p=mv)

Key Terms:

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

Background:

- Momentum is a measurement of an object's motion.
- Momentum is calculated with the equation p=mv; p stands for momentum, m stands for mass and v stands for velocity (speed and direction).
- Momentum isn't destroyed, only transferred to other objects.

Watch a really short video

Background:

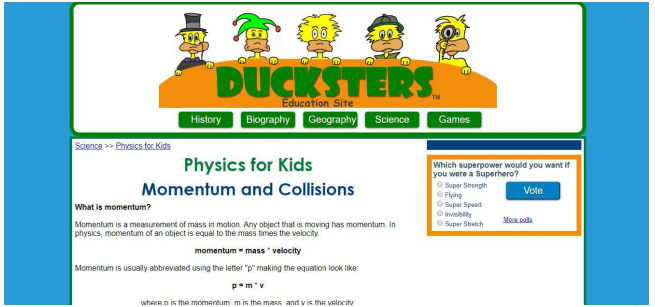
- Last week you completed a lesson on Newton's Third Law of Motion, which is called the Law of Momentum.
- You also learned how to calculate momentum.
- If you haven't done so, you may want to go back and do those lessons now. Use the links below:

Last Week's Lesson on the Third Law of Motion

Last Week's Lesson on Calculating Momentum

Practice 1:

Ducksters: Physics for Kids

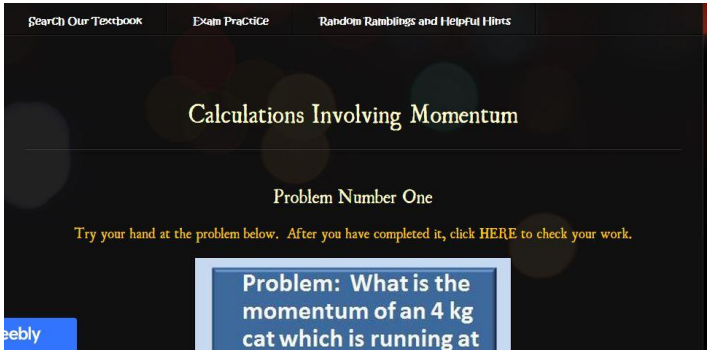


Read the Ducksters article on *Momentum and Collisions.*

Do the practice quiz at the bottom of the page.

Practice 2:

Calculations Involving Momentum



Go to Calculations Involving Momentum.

Solve the problems using the formula for momentum (you may want to use scratch paper).

Click the link below each problem to check your answer.

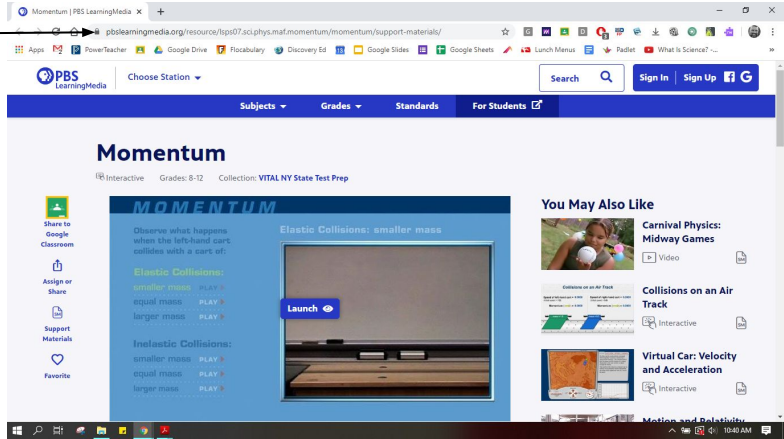
Summary:

- Momentum is the amount of motion an object has (think “kinetic energy”)
- Momentum of an object can be mathematically calculated with the equation p=mv
- Momentum is never created or destroyed but can be transferred from one object to another.

Additional Practice: *I recommend you at least watch the video experiment.

Momentum Virtual Lab: PBS Learning Media

Allow Flash Player by clicking on the lock icon in the upper left.



Click “Launch” to begin the lab.

Link to Data Table

Momentum Calculator