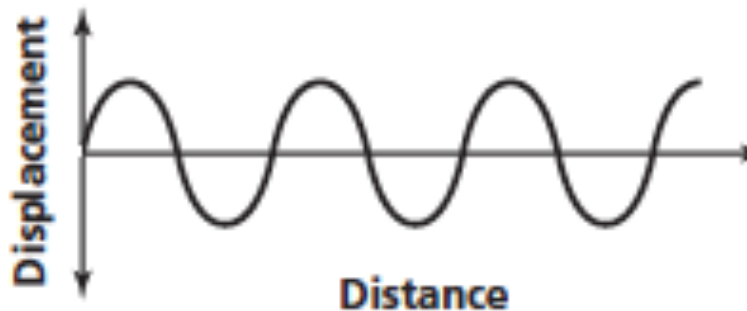


August 15, 2014

5

A wave is shown in the diagram below.



Which best describes the wave?

- A The wavelength ends at the crest.
- B The amplitude equals the wavelength.
- C The amplitude of the crest equals the amplitude of the trough.
- D The wavelength is the height of the crest plus the height of the trough.

You must explain why your answer is correct.

Please write the page number in your book that supports your explanation.

Use the index of your book to help you.

Chapter 13 Day 5 (Lesson 2)

Distinguish between speed and velocity.

Identify and explain how Newton's laws of motion relate to the movement of objects.

FORCE Review

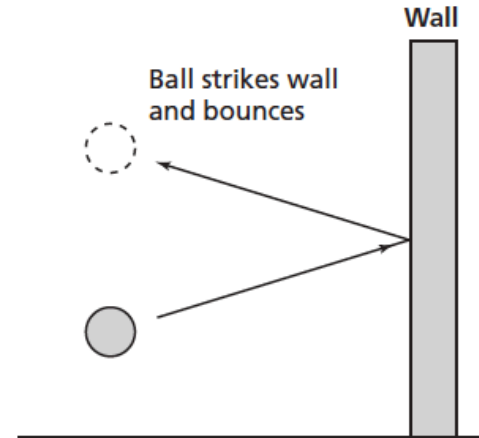
- Brain Pop

What You Will Learn

- The difference between balanced and unbalanced forces
- Examples of contact and non-contact forces
- The effects of friction
- The difference between static and sliding friction
- What buoyancy is
- What air resistance causes

What Mastery Might Look Like

16 A student throws a ball against a wall as shown in the picture below.



Which statement best explains what is happening in the picture?

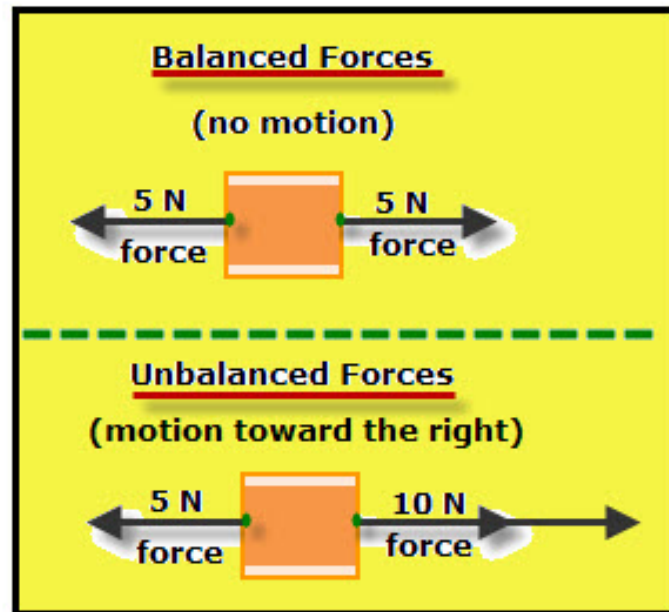
- F** The energy of the ball is destroyed as it strikes the wall.
- G** The energy of the ball becomes negative as it strikes the wall.
- H** The force from the wall on the ball is equal and opposite to the force from the ball on the wall.
- J** The force exerted by the wall on the ball is greater than the force exerted by the ball on the wall.

44 Object X has twice the mass of Object Y. Both objects are accelerating at the same rate. Which statement best describes the motions of Object X and Object Y?

- F** Object X is traveling at twice the speed as Object Y.
- G** Object X is traveling at half the speed as Object Y.
- H** Object X requires twice the force to accelerate at the same rate as Object Y.
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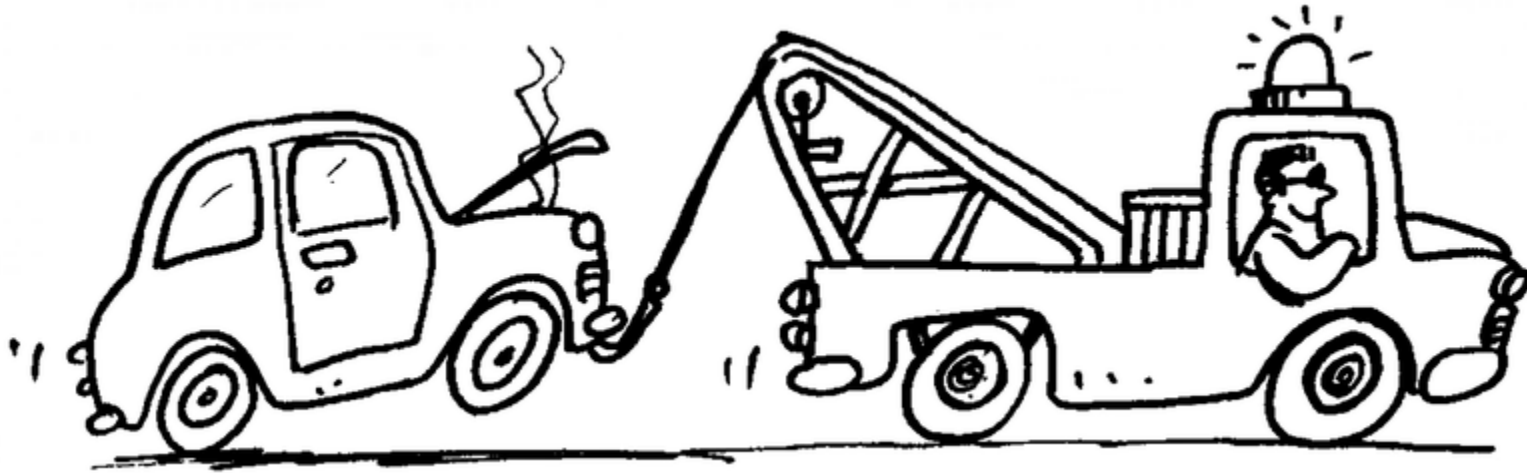
Balanced vs. Unbalanced

- **Balanced Forces** – The forces acting on an object are balanced forces if the net force is zero. Balanced forces do not change the motion of an object.
- **Unbalanced Forces** – If the net force of forces is NOT zero.



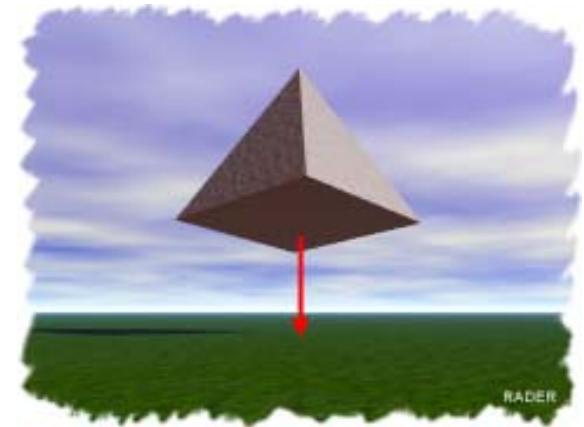
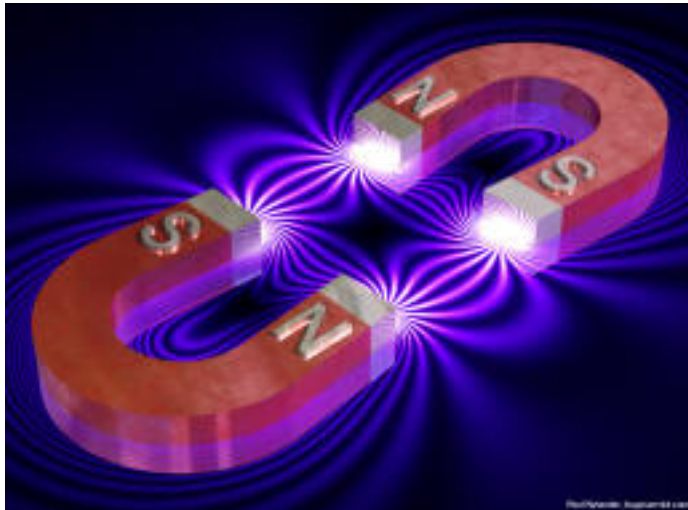
Contact vs. Non-Contact Forces

- **Contact Force** – a force that is exerted only when two objects are touching.



Contact vs. Non-Contact Force

- **Non-contact Force** – forces that can be exerted by one object on another even when the objects aren't touching.

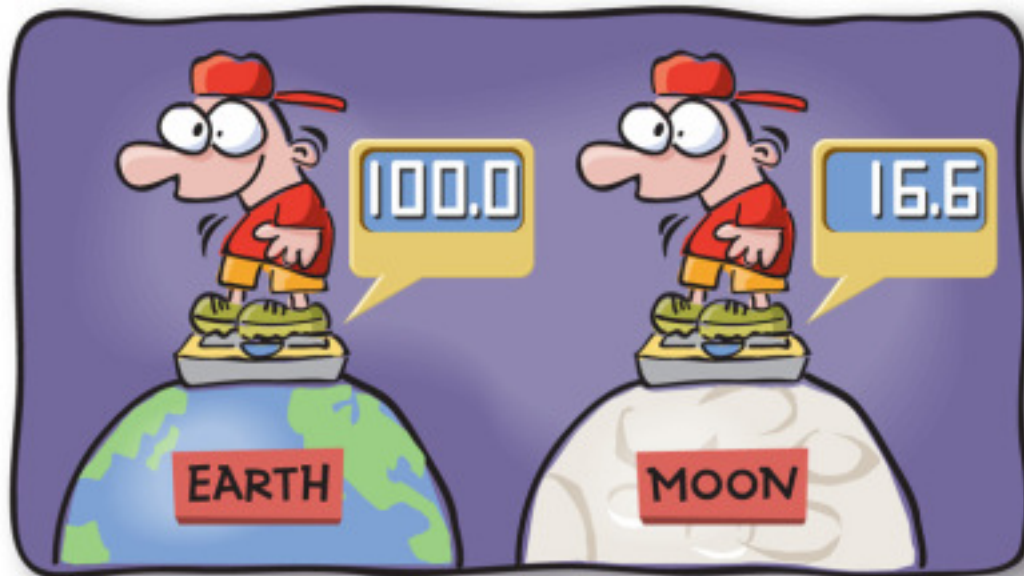


GRAVITY OF THE EARTH PULLS
OBJECTS TOWARDS THE
CENTER OF THE PLANET.

- What are some examples of non-contact forces you might see?

Weight

- The gravitational force Earth exerts on an object is the weight of an object.
- Because weight is a force, it is measured in Newtons.



Friction

- https://www.youtube.com/watch?v=AX_ICOjLCTo

- Why does this happen?
- FRICTION!



- Friction is a contact force that resists the sliding motion of two surfaces that are touching. *****

Static Friction

- Static means “not moving.”
- Static friction is the force between two surfaces in contact that keeps them from sliding when a force is applied.
- When you stand on a ramp, you don't slide down because of the static friction between the ramp and your shoes.



Sliding Friction

- Sliding friction is the force that opposes the motion of two sliding surfaces in contact.
- If you push hard enough on the cardboard box filled with books, it will start sliding.
- If you stop pushing after the box starts sliding, it will slow down and stop.

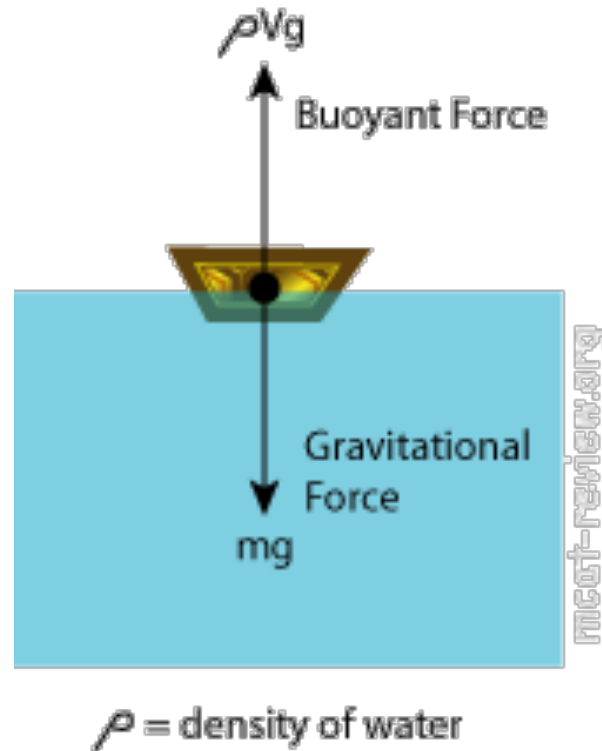


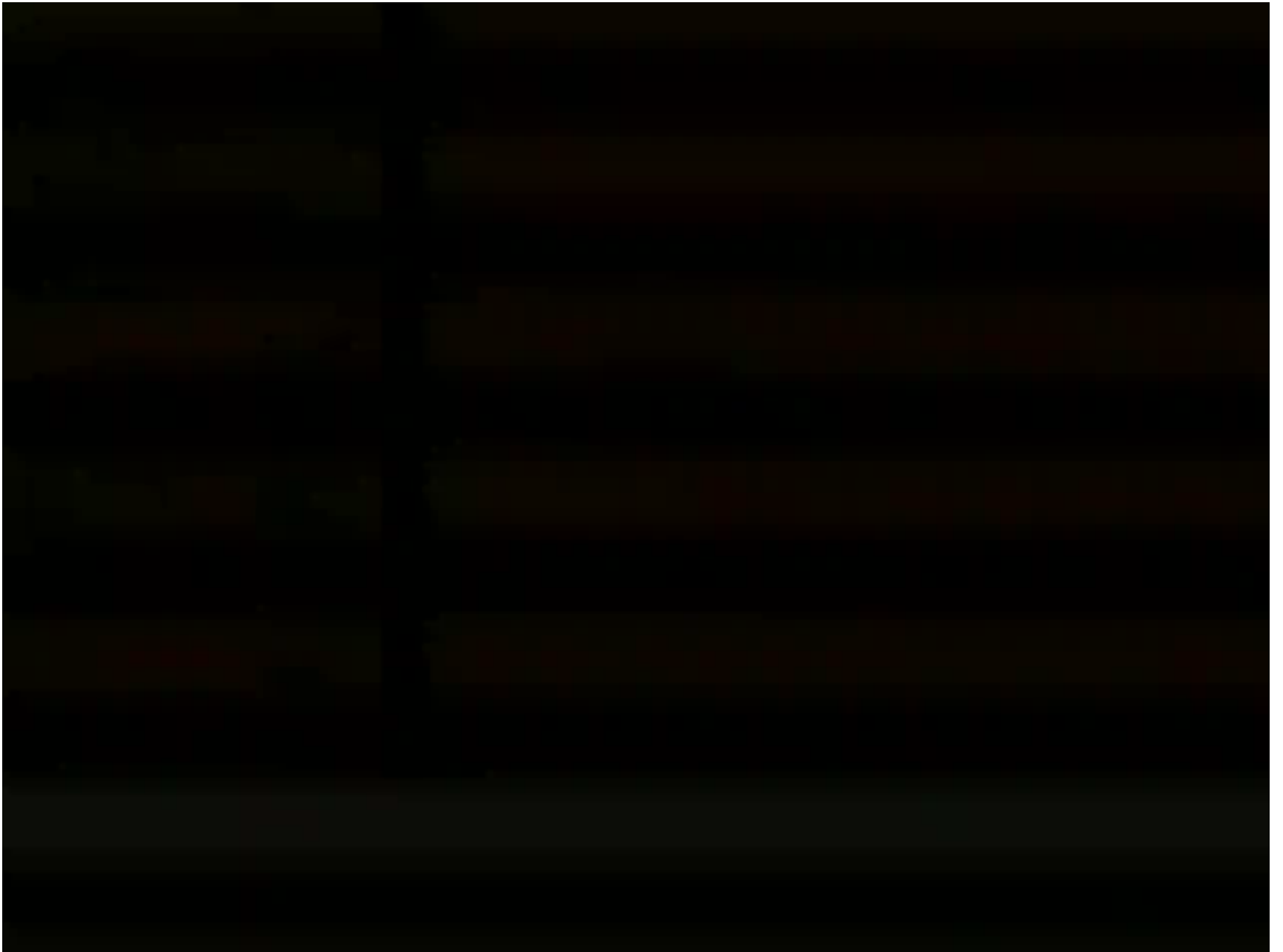
Friction

- What causes friction?
- <https://www.youtube.com/watch?v=IOAlvTwPsZQ>
- 0:00 – 5:30
- All surfaces are covered with microscopic dips and bumps. Friction is caused by sticking of the two surfaces at these bumps and dips.

The Buoyant Force

- The buoyant force is a force exerted by a fluid on an object that is in the fluid. The buoyant force is always upward.





Air Resistance

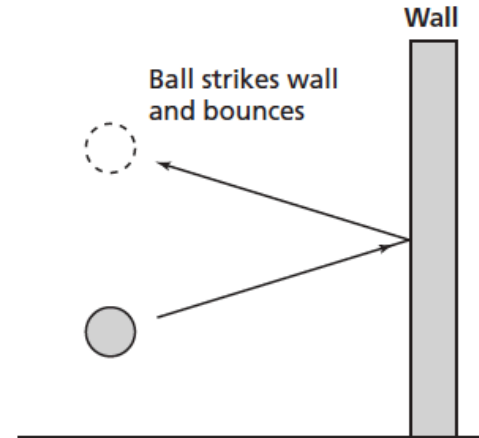


- A sheet of crumpled paper falls faster than an identical flat, horizontal sheet of paper. This is thanks to air resistance.
- Air resistance is a contact force that opposes the motion of objects moving in air.



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