Lesson 1: Balanced and Unbalanced Forces

What is force?
Simply put, force is a push or pull applied to an object.
Newtons are units of force measurement. One newton is the amount of force needed to accelerate one kilogram one meter per second each second.

\[ 1 \text{ N} = 1 \text{ kg} \times 1 \text{ m/s}^2 \]

Discovery Education Video

**Science Video Vocab:**

**Force**

Provides insight into the way force can change an object's motion. The segment also defines such terms as contact force, friction, normal force, and applied force.
Forces can be balanced or unbalanced.

Balanced Force – Two equal forces applied to an object in opposite directions.

When an object is being pushed or pulled by balanced forces, the object will be at rest (not moving).

When you sit on a chair you don't fall to the ground. This is because the downward force you apply to the chair when you sit down is equal to the upward force the chair is pushing on you.
Discovery Education Video

**Science Video Vocab: Balanced Force**

Describes how balanced forces keep objects in one place.

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Unbalanced Force – A force that is not opposed by an equal force.

When an object is being pushed or pulled by an unbalanced force, the object will move.

When a ball is dropped, it falls to the ground because the pulling force of gravity is stronger than the force of the air molecules pushing on the ball.
Describe three examples of force that you have observed and explain whether each of these forces is balanced or unbalanced.
Key Questions

1. What is the difference between a balanced and an unbalanced force?

2. Do all objects on earth have forces pushing or pulling on them at all times? Explain your answer.

3. Is a force always necessary to create motion? Explain your answer.