

Name _____

Pd: _____

OBJECTIVE: 7.P.1.2

Balanced & Unbalanced Forces

Essential Question: How do balanced and unbalanced forces affect an object's motion?

What is Inertia?

_____ : the _____ of any physical object to any _____ in its state of motion, including changes to its speed and direction.

- Inertia tells us that we need a _____ to get an object to move or stop an object from moving.

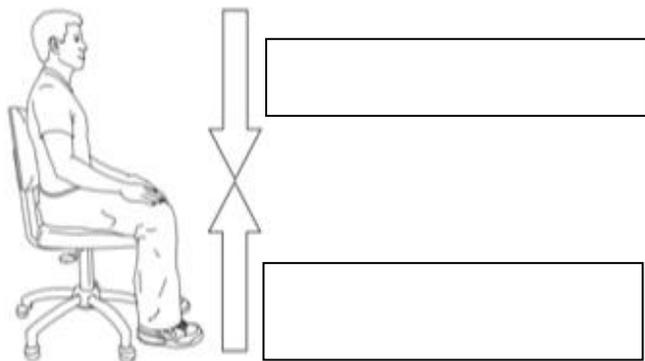
What is a Force?

In science, a force is a _____ or a _____

- All forces have two properties: _____ and _____
 - A _____ (N) is the _____ that describes the _____ of a force.

Example:

- The student is **pushing** down on the chair, but the chair does not move.
- The floor is **balancing** the force by pushing on the chair.



A person sitting on a chair.

The student is _____
down on the chair, but the
chair does not move.

- The floor is _____
the force by pushing on the
chair.

Combining Forces

More than one _____ often acts on an _____

- When all the forces acting on an object are _____ together, you determine the _____ on the object.
- An object with a net force _____ on it will change its state of _____.

Forces in the Same Direction

When _____ are applied in the _____ direction, they are _____ to determine the _____ of the net force.



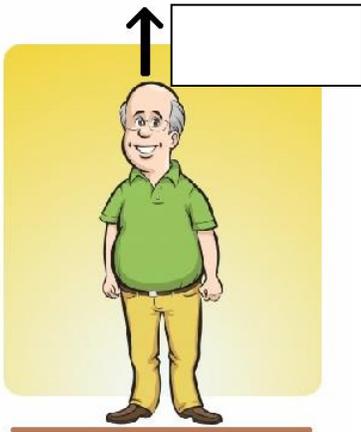
Forces in Different Directions

When two forces act in _____ directions, you _____ the **smaller** force from the **larger** force to determine the _____.

- The net force will be in the _____ as the _____ force.



The forces on the person are balanced



Balanced Forces

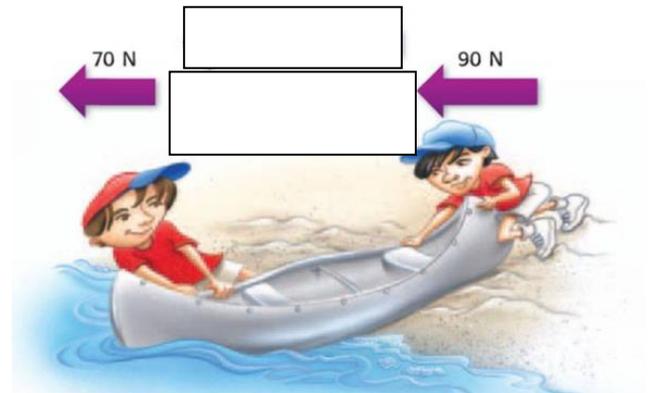
When the forces on an object _____ a _____ of _____, the forces are _____.

- There is _____ in the _____ of the object.

Unbalanced Forces

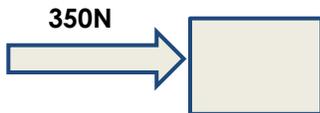
When the _____ on an object is _____, the forces on the object are _____.

Unbalanced forces produce a _____ of an object.



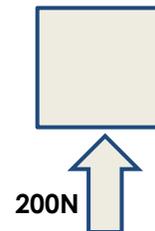
PRACTICE

1.



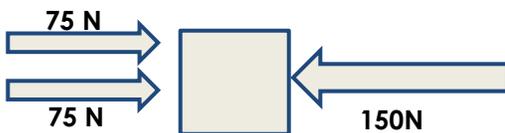
Net Force: _____

2.



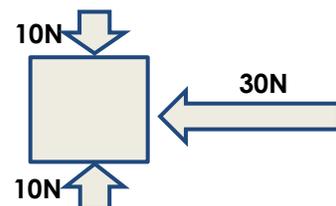
Net Force: _____

3.



Net Force: _____

4.



Net Force: _____

Gravity

Gravity is the force of _____ between matter.

Gravity depends on: _____ and _____

Mass and Gravity

The _____ an object the more it can _____ objects to itself.

- For example, the Sun has a larger gravitational effect than the Earth.

Distance and Gravity

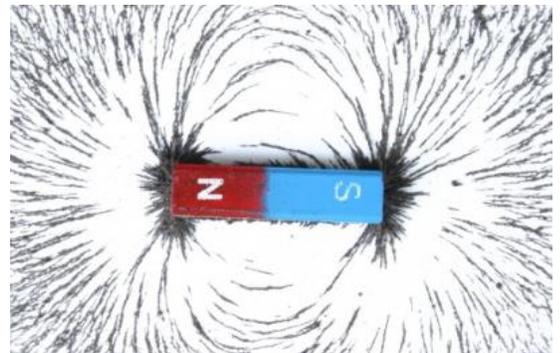
The _____ objects get from one another, the _____ gravitational attraction can be found.

Magnets

A _____: an object with a north and south pole that produces a _____ and exerts a _____.

A _____ is the force field that surrounds the magnet.

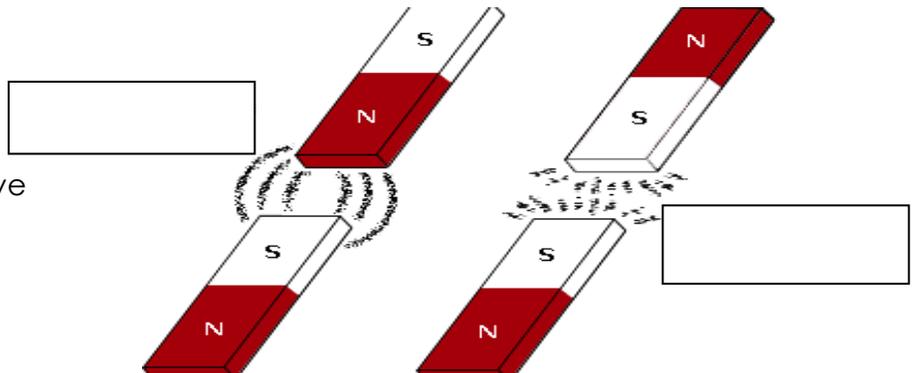
A _____ can cause objects to _____ or _____ without needing to touch the magnet!



How do magnets affect motion?

_____ poles will _____ or move _____ from one another.

_____ poles will _____ or move _____ one another.



Example:

A **compass** uses the Earth's magnetic field and magnets to help a person determine direction. The magnet's poles will line up with the Earth's north magnetic pole and south magnetic pole.

