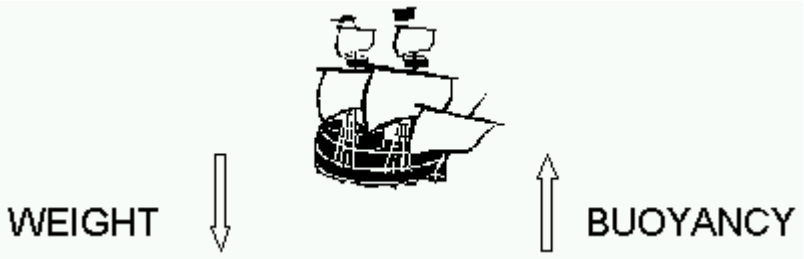
Newton's 3 Laws of Motion

NEWTON'S FIRST LAW OF MOTION

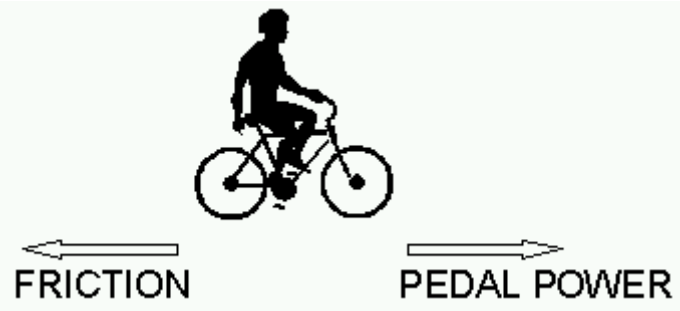
An object remains at rest or moving at a constant speed unless acted on by an unbalanced force.

Example 1 -



The downward force of gravity (or weight) of the old sailing ship is equal to the upward force of the water (or buoyancy). The forces are balanced, there is no net or overall force and the ship is still in the water.

Example 2 –



Since the forward force of the cyclist is equal to the backward force of friction, the forces are _____, there is on net or _____ force and the cyclist is moving at a _____ speed.

You draw another example of Newton's 1st Law of Motion. (Remember to draw arrows that are equal.)

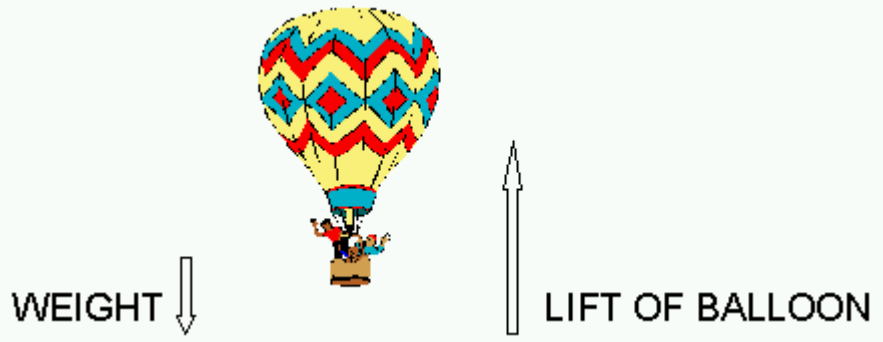
NEWTON'S SECOND LAW OF MOTION

A net or overall force on an object will accelerate it. The object will change speed.

Example 1 -

The forces on the ambulance are not _____, there is a net or overall forward force and the ambulance is _____.

Example 2 –



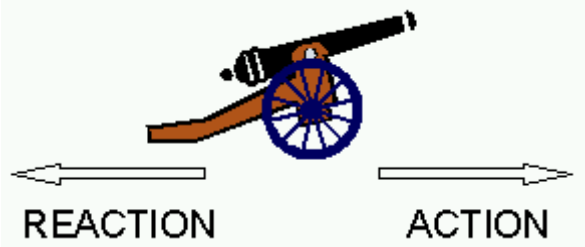
If the downward weight of the hot air balloon is 1000 Newtons and the upward lift is 2500 Newtons, then the overall resultant force is _____ Newtons upward.

You draw another example of Newton's 2nd Law of Motion. (Remember to draw arrows that are not equal.)

NEWTON'S THIRD LAW OF MOTION

For every action, there must is an equal and opposite reaction.

Example 1 –



When the cannon is fired, the cartridge fires out of the barrel. This is the _____. A moment later, the cannon recoils backwards. This is the _____.

Draw the Action and Reaction arrows in the diagram showing the moment when the firehose is first turned on.

Now, you draw another example of Newton's 3rd Law of Motion. (Remember to draw arrows that are equal.)