Name:_____ **Date:**_____ **Period:**_____

Newton's Laws of Motion - Introduction Notes

Bell Ringer: What do you already know about Newton's Laws?

Learning Target:

Newton's First Law: An object in motion tends to stay in motion and an object at rest tends to stay at rest unless acted upon by an unbalanced force.

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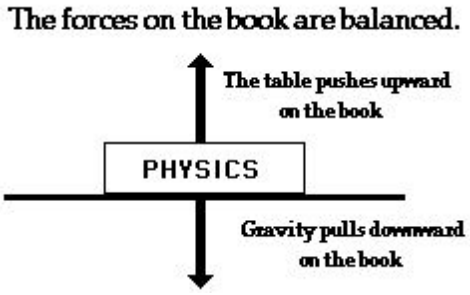
What is an unbalanced Force?



Balanced Forces:

Unbalanced Forces:

First Law Example:

Inertia:

The First Law states that *all objects have inertia*. The more mass an object has, the more Inertia it has (and the harder it is to change its motion).

Learning Check:

Which Object has more inertia?

- Elephant
- Mouse
- bike
- Balloon

Newton's Second Law: Force equals mass times acceleration.

$$F = ma$$

Acceleration:

- Force is

Example:

Learning Check:

Which ball will have the greatest acceleration if the same amount of force was applied to each one.

- 4kg
- 6kg
- 10 kg
- 15kg

Newton's Third Law: For every action there is an equal and opposite reaction.

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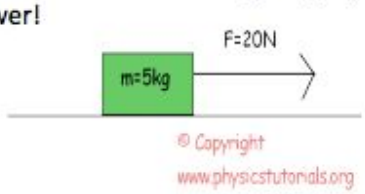
Example:

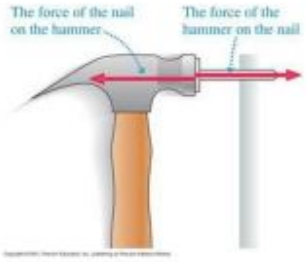
Label each of the following images/descriptions below as being examples of 1st, 2nd, or 3rd law. Then EXPLAIN your answer!



F=m.a
20N=5kg.a
a=4m/s.s

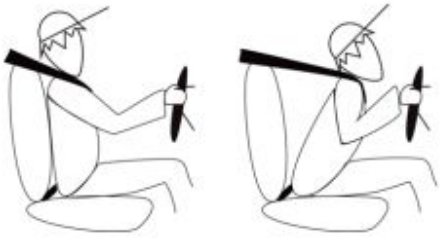
1st law 2nd law 3rd law

Explanation:



1st law 2nd law 3rd law

Explanation:

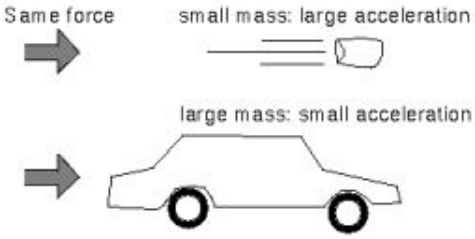


1st law 2nd law 3rd law

Explanation:

1st law 2nd law 3rd law

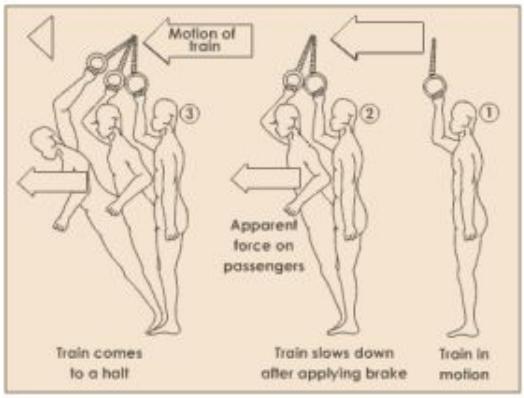
Explanation:



Force = mass x acceleration

1st law 2nd law 3rd law

Explanation:



1st law 2nd law 3rd law

Explanation: