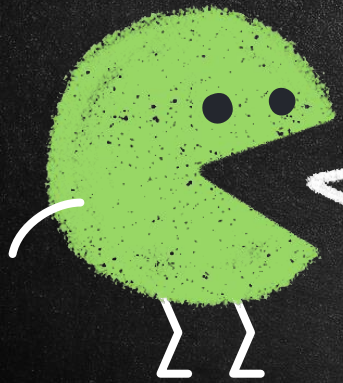
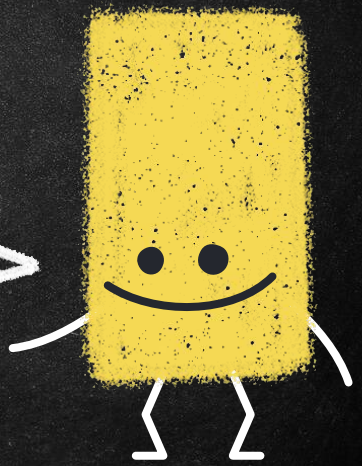
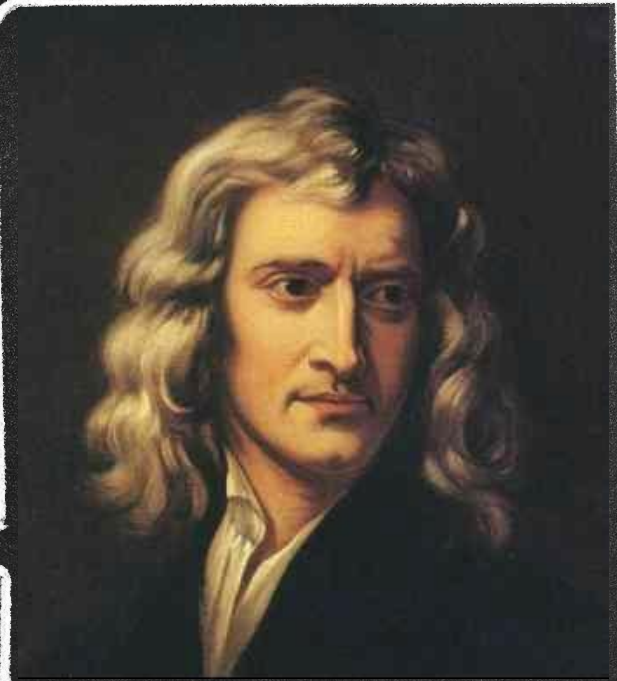
Newton's Law of Motion





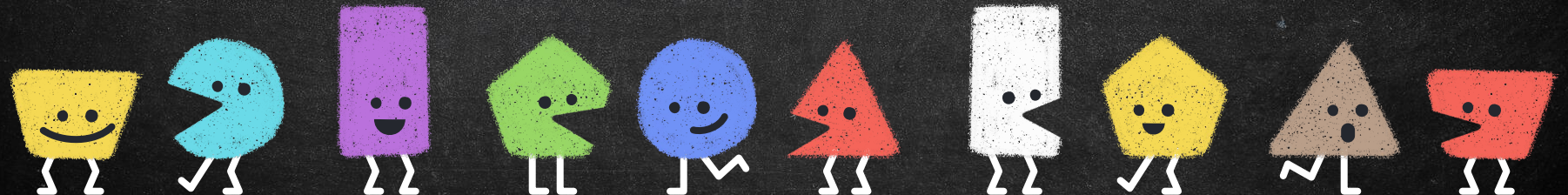
Isaac newton



- Described 3 laws that relate forces to motion
- Force-a push or a pull, all forces have size and direction

VOCABULARY

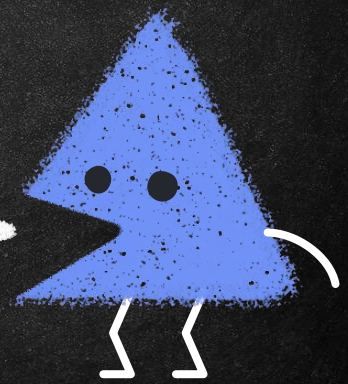
- Friction- a force that opposes motion between 2 objects that are touching
- Inertia-tendency of all objects to stay at rest or in motion
- Mass- the amount of matter an object is made of



Newton's 1st Law of Motion

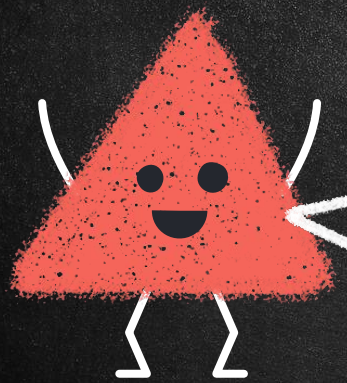
Law of Inertia

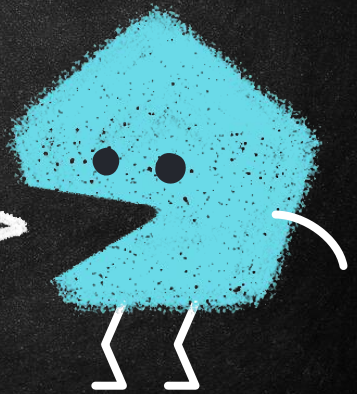
- An object at rest remains at rest and an object in motion remains in motion at constant speed and in a straight line unless acted on by an unbalanced force.



Examples of Newton's 1st Law of Motion

1. Car suddenly stops and you strain against the seat belt.
2. Car turns left and you appear to slide to the right.
3. The difficulty of pushing a car that won't start.



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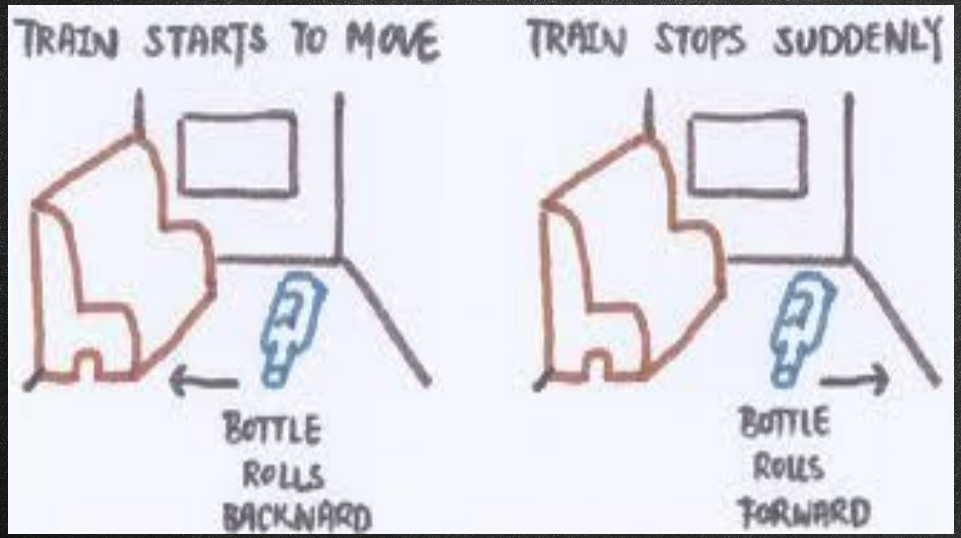
This little car has less inertia than a big truck.

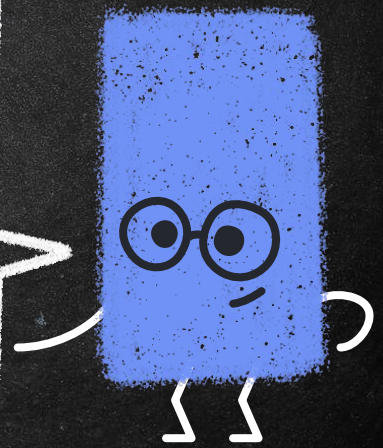
Write about it!

Write down one example of inertia you see in the room.



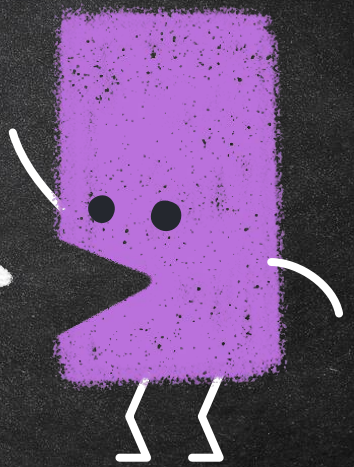
Bell Work

- What is Newton's 1st Law of Motion?
- Is an example of Newton's 1st Law when a car turns left and you appear to slide to the right?
- What is inertia?



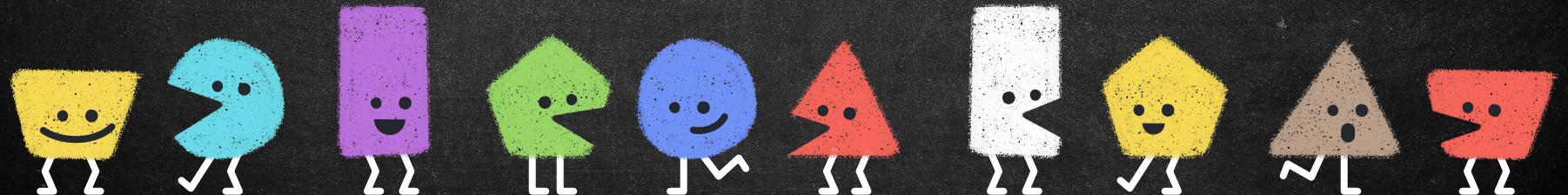
Newton's Second Law of Motion

The acceleration of an object depends on the mass of the object and the amount of the force applied



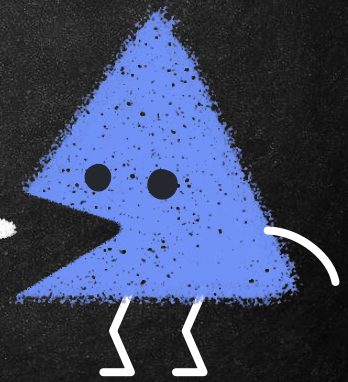
Newton's Second Law of Motion

- Force = mass x acceleration F=m x a
- **Force**- a push or pull, all forces have size and direction
- **Mass**- the amount of matter an object is made of
- **Acceleration**-the rate at which velocity changes; and object accelerates if its speed changes, if its direction changes and if both speed and direction changes



Examples of Second Law of Motion

1. Hitting a softball, the harder the hit, the faster the ball goes
2. Football players and their positions
3. Loaded versus an unloaded truck



Examples of Second Law of Motion

Figure No. 1

Figure No. 2

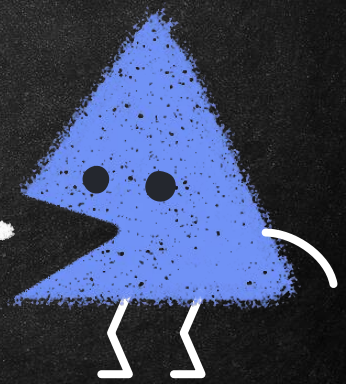
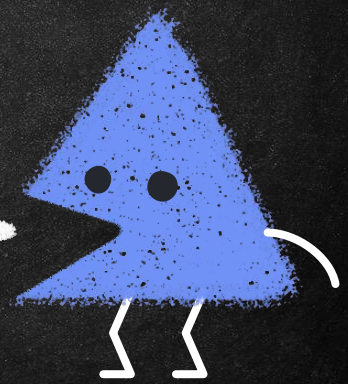


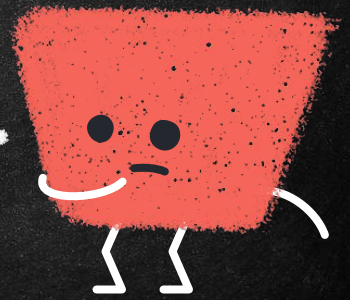
Figure No. 1 and 2 exhibited the statement of the Law of Acceleration that object's' acceleration is affected by its mass.

the higher the mass, more force is required for an acceleration.



Bell Work

1. What is Newton's 2nd Law of Motion?
2. What is an example of Newton's 2nd Law?
3. What is friction?

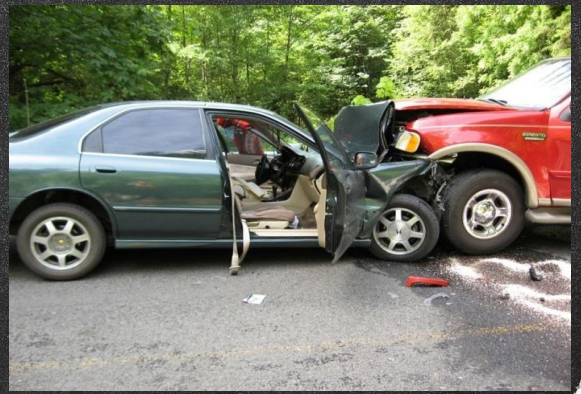


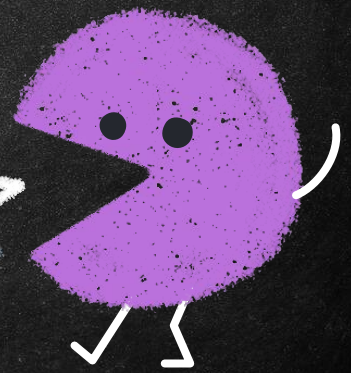
Newton's Third Law of Motion

- For every force, there is an equal and opposite force
- Action and Reaction

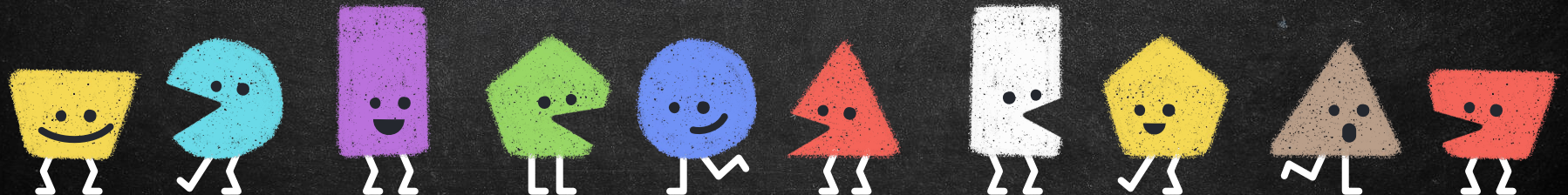
Examples of Newton's 3rd Law

1. 2 cars hit head on
2. Jumping out of a boat onto a dock
3. Astronauts in space





Thank you



Reference

(2021). Retrieved 16 August 2021, from https://www.romaisd.com/cms/lib/TX02215271/Centricity/Domain/1991/Newtons%20Laws%20of%20Motion%202018.pptx