Physical Science -Forces and Motion Vocabulary

1. **scientific method -** The way we learn and study the world around us through a process of steps. (**S**ix **G**iant **H**ippos **E**at **R**ed & **O**range **C**andy)
2. **position –** the exact location of an object.
3. **direction –** the line or course along which something moves.
4. **speed** – measures how fast an object is moving in a given amount of time.
5. **motion –** the change in position of an object.
6. **constant –** remaining steady and unchanged (stays the same.)
7. **force** – push or pull
8. **interaction** – the action or influence of people, groups or things on one another.
9. **exert** – to put forth as strength (exert a force)
10. **friction -** a force that opposes (goes against) motion. Friction is created when two surfaces rub together. Effects of friction: slowing down or stopping an object, producing heat, or wearing away an object.
11. **Newton's 1st Law of Motion**: an object at rest will stay at rest and an object in motion will stay in motion until a force acts upon it.
12. **inertia** – the tendency for an object to keep doing what it is doing (resting or moving)
13. **mass** – the amount of matter ("stuff") - in an object.
14. **weight** - the amount of force (pull) that gravity has on an object's mass. Your weight depends on the gravitational pull of your location.
15. **gravity** – a force that attracts (pulls) all objects to the center of the Earth
16. **acceleration** – the changes in an object's motion. This can be speeding up, slowing down or changing direction. An object's acceleration depends on the object's mass and the force applied.
17. **Newton's 2nd Law of Motion** – the acceleration of an object depends on its mass and the force used to move it
    F=MA
    F = force
    M = mass
    A = acceleration
18. **velocity** – measures how fast an object is moving (speed) AND the direction in which it is moving
19. **momentum** - the higher the velocity and mass, the more momentum an object has. One way to think of momentum is that momentum measures how hard it will be to stop the object once it is in motion. Momentum can be transferred when two objects collide.
20. **Newton's 3rd Law of Motion** – for every action there is an equal and opposite reaction
21. **net force** – the overall force(s) acting on an object.
22. **balanced force -** does not cause a change in motion. Is **equal** in size and **opposite** in direction. Net force = ZERO
23. **unbalanced force -** always causes a change in motion. Is **not** equal and opposite. Net force is GREATER than zero.
24. **energy** – the ability to do work
25. **kinetic energy –** energy of motion.
26. **potential energy –** stored energy in a body or system due to its position.