Vocabulary: Pith Ball Lab

Vocabulary

- Coulomb's law – a law that describes the *electrostatic force* between two charged objects.
  - Coulomb's law states that the electrostatic force between two charged objects (*Fq*) is equal to a constant (*k*) multiplied by the product of the charges (q_1 and q_2) divided by the square of the distance between them (*R*):

$$Fq = k\frac{q_1 q_2}{R^2}$$

- Electrostatic force – the force between charged objects.
  - Opposite charges (positive and negative) will attract one another.
  - Similar charges (positive-positive or negative-negative) will repel one another.
- Gravitational force – the force of attraction between all objects in the universe.
  - The magnitude of the gravitational force between two objects depends on the masses of the two objects and the distance between them.
- Induced charge – the separation of charges in a neutral object caused by a nearby charged object.
  - If the charged object is positive, electrons in the neutral object move toward the charged object. This results in a negative charge on the near side of the neutral object.
  - If the charged object is negative, electrons in the neutral object move away from the charged object. This results in a positive charge on the near side of the neutral object.
- Pith ball – a lightweight sphere made of cork or pith (a plant material) that can easily acquire a positive or negative charge.
- Pythagorean Theorem – a law stating that the square of the length of a right triangle's hypotenuse (*c*) is equal to the sum of the squares of the lengths of the two legs (*a* and *b*): $a^2 + b^2 = c^2$.
- Tension – the magnitude of a pulling force exerted by a string, chain, cable, or similar object on another object.
- Vector – a representation that specifies the direction and magnitude of a quantity.
  - In physics, vectors are used to represent displacement, velocity, acceleration, force, and other quantities that have a specific direction.
  - Vectors are represented visually by arrows.