Vocabulary: Golf Range

Vocabulary

- Acceleration – the change in velocity per unit time.
  - Acceleration is calculated by dividing the change in velocity by the elapsed time: $a = \Delta v / \Delta t$.
  - For example, if an object accelerates from 0 m/s to 10 m/s in 2 seconds, the acceleration is 5 m/s/s, or 5 m/s^2.
  - Acceleration is considered positive when the velocity is increasing and negative when the velocity is decreasing. For a falling object, velocity is becoming more negative (decreasing), so acceleration is also negative.
- Air resistance – the force of air pushing against a moving object.
  - Air resistance is also called *drag*.
  - Air resistance increases as speed increases.
  - Air resistance also increases as surface area (size) increases.
- Gravity – the force of attraction between all objects in the universe.
  - The strength of gravity depends on two factors: mass and distance. As mass increases and distance decreases, the pull of gravity becomes stronger.
- Hang time – the total time a projectile spends in the air along its trajectory.
- Launch angle – (θ) the angle a projectile's path makes with the launch surface.
- Projectile motion – the motion of an object launched into the air at an angle.
  - The motion of a projectile can be divided into horizontal and vertical components.
- Trajectory – the path of an object through space.
- Vector – a quantity that has both magnitude and direction.
  - Vectors are represented graphically as arrows.
    - The magnitude of the vector is shown by the length of the arrow.
    - The direction of the vector is shown by the direction of the arrow.
  - Vector quantities include displacement, velocity, acceleration, and force.
- Velocity – the speed and direction of a moving object.
  - Rightward displacement is considered positive and leftward motion is negative. Therefore, the velocity of an object moving from left to right is positive.
  - Upward motion is positive and downward motion is negative. The velocity of a rising object is positive and the velocity of a falling object is negative.