• Speed
  o The distance an object travels per unit of time
  o Scalar quantity – only a magnitude is needed
• Constant vs. Changing Speed
  o Constant Speed
    ♠ The rate of change if position in which the same distance is
      traveled per unit of time
  o Changing Speed
    ♠ The rate and change of position in which the distance is not the
      same per unit of time
  o Instantaneous Speed
    ♠ Speed at a specific instance in time
      • Speedometer on a car measures this
• Average Speed
  o Total distance traveled divided by the total time taken to travel that
distance
  o Average Speed = \( \frac{D}{T} \)
    ♠ Distance = \( S \times T \)
• Velocity
  o A description of an object’s speed and direction
    ♠ A vector quantity
  o Can be represented using arrows drawn in the direction of the motion
    ♠ Relative length of the arrow indicated the relative speed of the
      motion
    ♠ Arrow points in the direction of motion
• Acceleration
  o When velocity changes we call that acceleration
  o Measure of change of velocity during a period of time
    ♠ Increasing speed
    ♠ Decreasing speed
    ♠ Change of direction
  o Vector quantity
• Calculating Acceleration
  o \( A = \frac{V}{T} \)
    ♠ \( V = \frac{V_2 - V_1}{T_2 - T_1} \) m/s
      squared