5.2 Notes Outline

Velocity & Momentum

Velocity & Escalators Free Write

* Write your answers to the free write questions in the space below
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: includes the **speed** of an object and the **direction** of its motion
  + Units for velocity are the same units used for speed (\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
* Because velocity depends on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the velocity of an object can change even though \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_remains constant
  + Ex: Ascending and descending escalators
    - Same speed, different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (because of different direction)
* Have you ever watched cars pass you on the highway? Those passing in the same direction seem to be moving \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, while those traveling in opposite direction seem to \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_.
* The choice of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ affects how you describe motion.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ always depend on the point of reference chosen.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the product of an object’s mass and velocity
  + Momentum (kg × m/s) = mass (kg) × velocity (m/s)

**p = mv**

* + Ex: Calculate the momentum of a car with the following stats in the space below:

mass = 47.0 kg

velocity = 15.0 m/s West

p = ?

ACTIVITY – Momentum in Sports

* Choose one sport that you think momentum plays an important role in (football, basketball, soccer, etc)
* Write down two things a player of that sport could do to increase there momentum
* Make sure to justify/explain your answers in the space provided
* Keep in mind the definition of momentum when working on this activity