1. Know the difference between scalar and vector and which physics units are scalar and which vector
   1. Ex. Velocity is a vector because it has both magnitude (amount) AND direction
2. Know how vector arrows demonstrate motion; how they add to each other and how they subtract from each other.
   1. When one arrow is 180° from other arrow they subtract from each other.
   2. Object would be moving slightly to the left
3. Know how to use Pythagorean theory to resolve vectors
4. Know difference between distance and displacement and how to calculate displacement
   1. Ex. Walk 3m North then walk 4m West displacement is 5m NW
5. **Kinematics**: Know how to use the K.U.F.S. table with the first 5 formulas on the Physics Ref Table
   1. Velocity; acceleration (change in velocity); distance; time
6. **Friction**: how to calculate coefficient of friction
   1. Know what Normal Force is and what Weight is
7. **Weight**: know that weight IS the force of gravity of an object
8. Know Newton’s 3 Laws and how to use K.U.F.S. with Newton’s 2nd Law
9. **Basics**: know approximate sizes, shapes, lengths of common objects in Metric
   1. Ex. Mass of a high school student = 75kg
10. **Free Fall**: know how to calculate all variables in **d = ½ at2** formula
11. Know F = ma and how to solve for all variables AND that an **unbalanced force** is required to accelerate and object.
12. Know that change in direction is also considered acceleration.
13. Know how to determine a scale using a ruler
    1. Ex. If a 10cm line represents 10N then a proper scale would be: **1cm = 1N**
14. Know how to use a protractor to determine an angle