3. How Do We Identify Motion?

= Time and distance are two factors that help us to determine how an object is moving
- **Distance (d):** how far an object has travelled.
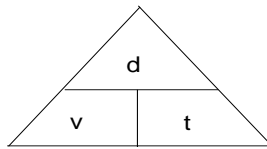 - : is often measured in metres.

- **Time (t):** is the duration between two events
  - : is usually measured in seconds, minutes or hours.

- When objects on earth are placed in motion, they travel certain distances in a given time
  - **Speed (v):** the distance travelled by a moving object per unit of time

$$v = \frac{d}{t}$$

: Units for speed are generally m/s or km/hr, but can be any distance unit over any time unit.
  - there are two types of speed:
    - a) **Instantaneous speed** = speed at a given instant in time
      - ie. Looking down at your speedometer
    - b) **Average speed** = total distance traveled in a given time span
      - it is the best approximation of uniform motion
      - ie. On a trip, a vehicle's speed will fluctuate

$$V_{av} = \frac{\text{total distance}}{\text{total time}}$$

Examples:

Two hikers walked the Trans Canada Trail for 6.0h and covered 31km. What was their speed?

What length of time would it take for two hikers to walk 25.0km if they traveled at a speed of 5.2km/h?

If the hikers continued at a pace of 5.2 km/h for 7 h, what distance would they travel?

2. How Do We Identify Motion?

= Time and distance are two factors that help us to determine how an object is moving
- **Distance (d):** _____
        : is often measured in metres.

- **Time (t):**_____
        : is usually measured in seconds, minutes or hours.

- When objects on earth are placed in motion, they travel certain distances in a given time
  - **Speed (v)**: _____

        : Units for speed are generally _____or _____but can be any distance unit over
         any time unit.

    - there are two types of speed:
        a) **Instantaneous speed** = speed at a given instant in time
                - ie. _____
        b) **Average speed** = total distance traveled in a given time span
                - it is the best approximation of _____
                - ie. _____

Examples:
    Two hikers walked the Trans Canada Trail for 6.0h and covered 31km. What was their speed?