

Newton's Second Law (see p. 69-70 for more info)

- The acceleration of an object is in the same direction as the net force acting on it.
- Newton's 2<sup>nd</sup> Law follows the equation:

$$\text{acceleration} = \frac{\text{net force}}{\text{mass}} \quad / \quad a = \frac{F}{m}$$

or

$$\text{Force} = \text{mass} \times \text{acceleration} \quad / \quad F = ma$$

(kg)                      (m/s<sup>2</sup>)

The units for force are Newtons (N)

↳ kg · m/s<sup>2</sup>

Example:

What is the force of a rocket engine if the rocket's mass is .050 kg (50 grams) and its acceleration is 5 m/s<sup>2</sup>?

$$F = .050 \times 5 = .25 \text{ N}$$

(m)                      x (a)

The force of the rocket engine is .25 N.