

## Physics Fundamentals

### Newton's Laws of Motion:

$$1. \sum \vec{F} = 0 \implies \vec{v} = \text{const}$$

$$2. \vec{F} = m\vec{a} = \frac{d\vec{p}}{dt}$$

$$3. \vec{F}_{12} = -\vec{F}_{21}$$

**Work, Energy, and Power:**  $W = \int \vec{F} \cdot d\vec{r}$ ,  $K = \frac{1}{2}mv^2$ ,  $U_g = mgh$ ,  $P = \frac{dW}{dt} = \vec{F} \cdot \vec{v}$

## Chemistry Essentials

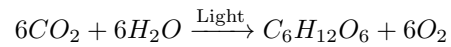
### Ideal Gas Law:

$$PV = nRT$$

$$R = 8.314$$

## Biology & Cell Structure

### Photosynthesis Equation:



### Cellular Respiration:

