- Sphere: $V = \frac{4}{3} \pi r^3$.

3. Key Topics in Trigonometry:

- **Sine, Cosine, and Tangent Ratios:**
  - Use to solve right-angled triangles.
  - $\sin(\theta) = \frac{\text{opposite}}{\text{hypotenuse}}$,
  - $\cos(\theta) = \frac{\text{adjacent}}{\text{hypotenuse}}$,
  - $\tan(\theta) = \frac{\text{opposite}}{\text{adjacent}}$.

Grade 9 Science Study Guide

1. Key Topics in Biology:

- **Cell Structure and Function:**
  - Cell membrane, nucleus, mitochondria, ribosomes.
  - Difference between prokaryotic and eukaryotic cells.
- **Photosynthesis and Cellular Respiration:**
  - Photosynthesis: $6CO_2 + 6H_2O + light \rightarrow C_6H_{12}O_6 + 6O_2$.
  - Cellular respiration: $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + ATP$.

2. Key Topics in Chemistry:

- **Atomic Structure:**
  - Atoms consist of protons, neutrons, and electrons.
  - Atomic number: Number of protons.
  - Mass number: Protons + neutrons.
- **Periodic Table Trends:**