



## Grade LEVEL 8 - (Science)

### Topic Outline

First Quarter - SY 2018 - 2019

Teacher: Christine Artiaga

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#### I. Scientific Method

- A. Parts of a Scientific Method
- B. Methodology
- C. Writing a Methodology

#### II. Atomic Structures and Matter

- A. Properties of Matter
  - 1. Electronic Configuration
  - 2. Valence Electron
- B. Pure substances and Matter
- C. Ionic and Covalent Bonding
  - 1. Nomenclature of substances
  - 2. Naming Acids and Bases
- D. Chemical Reactions
  - 1. Mole and the number of substances
  - 2. Introduction of Stoichiometry
  - 3. Principle of Balanced Chemical Reactions
  - 4. Reactants and Products

#### III. Theories on the different characteristics of Life

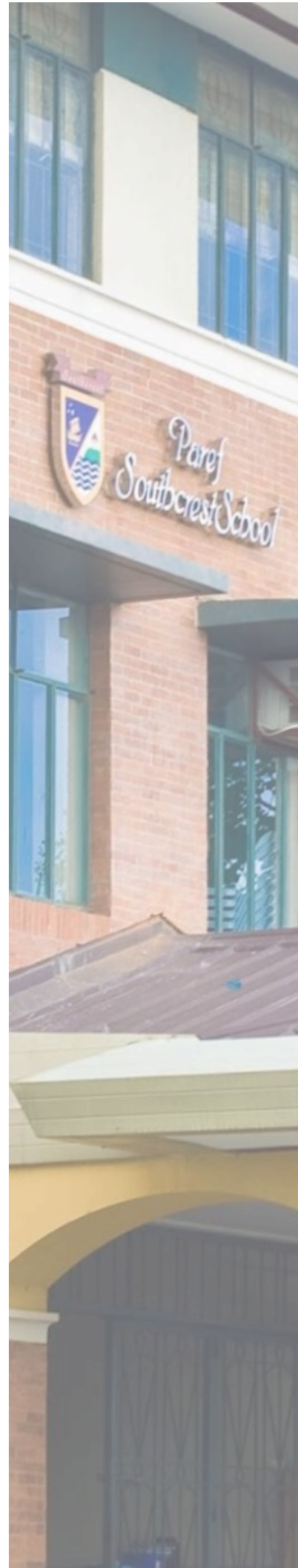
- A. Characteristics of Life
- B. Organization of Life
- C. Oparin and Haldane's Theory
- D. Metabolism first vs. Synthesis First Hypothesis

#### IV. Cell Structure and Functions

- A. Eukaryotic and Prokaryotic Cells
- B. Bacterial Cell Structure and Reproduction
- C. Plant Cell
- D. Animal Cell

#### V. Cellular Processes

- A. Respiration
- B. Photosynthesis
- C. Metabolism





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**VI. Cellular Division**

- A. Mitosis
- B. Meiosis
- C. Asexual Reproduction

**VII. Metric System and Conversion**

- A. Metric System and Unit of Conversion
- B. Law of Inertia
- C. Law of Acceleration
- D. Law of Interaction
- E. Universal Law of Gravitation
- F. Projectile Motion and Satellite Motion
- G. Gravitational Interactions
- H. Vector Quantities
- I. Drawing Vectors

**VIII. Temperature and Heat**

- A. Heat transfer and Phase Changes
- B. Thermodynamics

**IX. Light and Sound Waves: Properties and Characteristics**

- A. Reflection, Refraction, and Colors
- B. Thermodynamics

**X. Electricity**

- A. Ohm's Law
- B. Magnetic Field & Domain: Magnetic Forces

**XI. Earth Cycles**

- A. Water Cycle
- B. Rock Cycle
- C. Land Formation
- D. Water Forms
- E. Nitrogen Cycle
- F. Oxygen-Carbon Cycle

**XII. Weather and Typhoon**

- A. Factors Affecting the Weather
- B. Urban Weather Factors
- C. Typhoon



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- D. Formation of Typhoon
- E. Different Signal of Typhoon
- F. Safety and disaster management for Typhoon

**XIII. Moon Cycles**

- A. Phases of the Moon

**XIV. Solar System and Constellation**

- A. Formation of Solar System
- B. Characteristics of the different solar systems
- C. Formation of Constellations

**XV. Theories of Planetary Births**

- A. Formation of Planets
- B. Formation of moons
- C. Different types of planets
- D. Sustainability of plants

