Term 3

Year 7 Science Curriculum Overview – Term 3

Welcome to the Year 7 Science curriculum overview for this half term. Following the AQA KS3 Science curriculum, Year 7 students will be delving into topics from biology and physics: *Photosynthesis* and *Circuits*. These exciting and practical units will introduce key scientific concepts while fostering critical thinking and investigative skills. Below is an outline of the topics your child will study this term.

Photosynthesis

In this biology unit, students will explore the process of photosynthesis, understanding how plants produce their own food and contribute to life on Earth.

1. **The Process of Photosynthesis**
    - Students will learn about photosynthesis as the process by which plants convert light energy, carbon dioxide, and water into glucose and oxygen.
    - We will explore the importance of this process for plant growth and its critical role in producing oxygen for the atmosphere.
2. **Structure of Leaves and Adaptations**
    - Students will examine the structure of leaves, identifying key parts such as the chloroplasts, stomata, and veins, and their roles in photosynthesis.
    - We will discuss how leaves are adapted to maximize light absorption and gas exchange, such as their broad shape and thin structure.
3. **Factors Affecting Photosynthesis**
    - Students will investigate the factors that affect the rate of photosynthesis, including light intensity, carbon dioxide concentration, and temperature.
    - Practical experiments will help students measure and analyze how these factors influence photosynthetic rates.
4. **Photosynthesis in the Ecosystem**
    - We will discuss the role of plants as primary producers in the food chain, emphasizing their importance in sustaining ecosystems.
    - Students will learn how photosynthesis supports plant growth, which in turn provides food and oxygen for animals and humans.

Circuits

In this physics unit, students will study electricity and circuits, gaining an understanding of how electrical components interact and function in practical applications.

1. **Introduction to Electricity**
    - Students will explore what electricity is and how it flows through a circuit, learning about the concepts of current, voltage, and resistance.

    - They will discuss the importance of electricity in everyday life and the safety considerations when working with electrical systems.
2. **Circuit Components and Symbols**
    - Students will learn about the basic components of a circuit, such as cells, batteries, switches, bulbs, and resistors, and understand their functions.
    - They will be introduced to standard circuit symbols and how to use them to represent circuits in diagrams.
3. **Building and Testing Circuits**
    - Practical activities will allow students to build and test both series and parallel circuits, exploring how electricity flows differently in each type.
    - They will analyze how the arrangement of components affects the performance of circuits, such as brightness of bulbs and energy usage.
4. **Measuring Electricity**
    - Students will use ammeters and voltmeters to measure current and voltage in a circuit.
    - We will discuss the concept of resistance and its impact on the flow of electricity, linking it to real-world applications.
5. **Applications of Circuits**
    - This section will highlight how circuits are used in everyday devices and systems, from lighting to electronic gadgets.
    - Students will also explore innovations in electrical technology, such as renewable energy sources and energy-efficient devices.

Assessment and Skills Development

Students will participate in hands-on investigations, such as measuring photosynthesis rates and constructing functional electrical circuits, to develop practical and analytical skills. Assessments will include quizzes, practical evaluations, and an end-of-term test to track progress and understanding.

We look forward to an engaging term full of discovery and exploration in science!