**EMERALD ROYAL INT’L SCHOOL**

**LESSON PLAN/NOTE FOR WEEK 1 ENDING: 5TH MAY, 2023**

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| **Term** | 3rd |
| **Week** | 1 |
| **Date** | 1/05/2023 |
| **Class** | SSS 1 |
| **Subject** | Physics |
| **Topic** | Electric field |
| **Sub-topic** | Electric field circuit |
| **Period** | 1 and 2 |
| **Time** | 11:50-1:00 |
| **Duration** | 80minutes |
| **Number in class** | 8 |
| **Average age** | 13years |
| **Sex** | Mixed |
| **Specific objectives** | By the end of the lesson, the students should be able to:   1. Explain the concepts of electric field. 2. Explain electric current. 3. Set up a simple electric current. |
| **Rationale** | To enable the students understand the concepts of electric field. |
| **Previous knowledge** | Students have been taught electric charges. |
| **Instructional aid** | One guide sheet for each student, a cell, an ammeter, a voltmeter, a science notebook and a science textbook. |
| **Reference** | * M.W. Anyakoha. New school physics for secondary schools. Africana first publishers PLC. page 74-88 * P.N. Okeke. Macmillan Senior Secondary Physics. Pearson. Page 44-57 |

**LESSON DEVELOPMENT**

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| **STEPS** | **TEACHER’S ACTIVITIES** | **STUDENTS’ ACTIVITIES** | **LEARNING POINTS** |
| **Introduction** | The teacher introduces the lesson by explaining charges as an atom that has undergone ionization. I.e. the loss or gain of electrons. | The students state the different types of charges. | To give the students a rudimentary understanding of electric field. |
| **Step I** | *Concept of electric field*  An electric field is a region of space where a charged body experiences an electric force. The electric field is an example of a force field. | Begin to develop an idea of what a field is in a physics context as well as what properties a field has. | To ensure proper understanding of the lesson. |
| **Step II** | *Electric currents*  An electric charge can be at rest or in motion. We speak of static electricity when the charge is at rest, but when the charge is in motion; it is referred to as current electricity. Electric current, I, is defined as the rate of flow of electric charge along a conductor.  Current, I, is given mathematically by the expression:  Current (I)  I = | The students listen attentively the teacher’s explanation. | To ensure that all the students are carried along. |
| **Step III** | *Setting up simple electric current*  We can set up a simple electric current by creating a potential difference between the ends of the conductor. We can think of potential difference between any two points as the electrical pressure difference between these points. | The students listen attentively to the teacher’s explanation. | Consolidate acquired knowledge on electric fields. |
| **Summary** | An **electric field** is a region or space in which a charged body or charges can experience an electric force. The electric field can described using the electric lines of forces.  An **electric line of force** is an imaginary line drawn in an electric field such that the direction at any point gives the direction of the field at that point or the line giving the path which an isolated small positive charge would follow if placed in the field.  Electric current is the rate of flow of charge through a conductor.  The **electromotive force** (e.m.f) of a cell is the p.d. between its terminals when it is not delivering current in an external circuit. The continuous flow of charge can be produced from   1. Chemical energy through electric cells. 2. Heat energy – the thermoelectric effect. 3. Mechanical energy through the dynamo. 4. Solar energy through solar cells. | The students listen attentively to the teacher’s explanation. | For reference purpose. |
| **Evaluation** | The teacher evaluates the students by giving the students the following classwork.   1. What is ionization? 2. How are charges produced 3. Explain the potential difference. | The students answer the question in their science notebook. | To ascertain the students level of understanding of the lesson. |
| **Conclusion** | The teacher makes correction of the classwork. | The students copy the correction in their exercise books. | For reference purpose |
| **Assignment (Homework)** | The teacher gives the students the following assignments.  Plot electric line of force around   1. Isolated positive charge 2. Isolated negative charge 3. Two like charges 4. Two unlike charges | The students copy the questions into their exercise books. | To encourage critical thinking of students at home. |



12/7/2023

Principal Head Instuctor