**EMERALD ROYAL INT’L SCHOOL**

**LESSON PLAN/NOTE FOR WEEK 3 ENDING: 19TH MAY, 2023**

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| **Term** | 3rd |
| **Week** | 3 |
| **Date** | 19/05/2023 |
| **Class** | SSS 2 |
| **Subject** | Physics |
| **Topic** | Electric field 1 |
| **Sub-topic** | Electric circuit |
| **Period** | 3 |
| **Time** | 09:20-09:55 |
| **Duration** | 35minutes |
| **Number in class** | 2 |
| **Average age** | 14years |
| **Sex** | Mixed |
| **Specific objectives** | By the end of the lesson, the students should be able to explain the methods of production of electric current. They include;   1. Solar energy 2. Chemical energy and 3. Mechanical energy. |
| **Rationale** | To enable the students understand the concepts of producing electric current |
| **Previous knowledge** | Students should have been taught on 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 that a steady current is produced through continuous flow of charge. Such a continuous flow of charge can be generated from:   1. Heat energy 2. Solar energy 3. Mechanical energy 4. Chemical enerrgy. | The students differentiates between static and current electricity. | To give the students a rudimentary understanding the methods of producing electric current. |
| **Step I** | *Electricity from solar energy*  When sunlight falls on a photosensitive surface (e.g surface of potasssium) electrons are produced whose movement constitutes a current. A photocell or photoelectric cell consists of a photosensitive surface as a cathode and a wire ring as the anode. If visible light falls on this surface, electrons are emitted by a process called photoelectric effect and the flow of these electrons can be detected by a micro-ammeter as shown;  Conversion-of-solar-energy-to-electrical-energy | Begin to develop an idea the method of producing electric current. | To ensure proper understanding of the lesson. |
| **Step II** | *Electricity from chemical energy*  Electricity is produced from chemical energy through the use of electric cells which convert chemical energy into electrical energy.  A cell is a device for converting chemical energy to electrical energy. A cell consists of two electrodes (dissimilar metal) placed in a container in which there is a solution of acid or salt called the electrolyte. The positive electrode is the anode while the negative electrode is the cathode. | The students listen attentively the teacher’s explanation. | To ensure that all the students are carried along. |
| **Step III** | *Electricity from mechanical energy*  A generator is used as a device or a machine to convert mechanical energy into electrical energy. It consists of coils of wire attached to an armature that can rotate when exposed to a changing magnetic field. This rotation in a uniform external magnetic field induces an electromotive force (e.m.f) on the rotating coil, allowing current to flow on it and to the external circuit attached to it. This means the input in a generator is mechanical energy, while the output is electric current. | The students listen attentively to the teacher’s explanation. | Consolidate acquired knowledge on production of electric current. |
| **Summary** | Current can be produced produced from:   1. Chemical energy through electric cells. 2. Heat energy through thermo electric effect. 3. Solar energy through solar cells. 4. Mechanical energy through d.c dynamo.   A simplecell has a positive copper and negative zinc electrode and an electrolyte of tetraoxosulphate(vi) acid | 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.  Explain the consequence of hydrogen bubbles in a cell during the production of electric current. | 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 assignment.  Explain the following terms;   1. Thermo electric effect 2. Photoelectric effect. | The students copy the questions into their exercise books. | To encourage critical thinking of students at home. |



20/7/2023

Principal Head Instuctor