**EMERALD ROYAL INT’L SCHOOL**

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

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| **Term** | 3rd |
| **Week** | 1 |
| **Date** | 5/05/2023 |
| **Class** | SSS 1 |
| **Subject** | Physics |
| **Topic** | Electric field |
| **Sub-topic** | Electric field circuit |
| **Period** | 3 |
| **Time** | 10:15-10:50 |
| **Duration** | 35minutes |
| **Number in class** | 8 |
| **Average age** | 13years |
| **Sex** | Mixed |
| **Specific objectives** | By the end of the lesson, the students should be able to:   1. Distinguish between conductors and insulators. 2. Understand the meaning of resistance. 3. Calculate the electrical work done in a given circuit. |
| **Rationale** | To enable the students understand the concepts of electric field. |
| **Previous knowledge** | Students should have been taught on the electric charges. |
| **Instructional aid** | One guide sheet for each student, 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. Page44-57 |

**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 give the different types of charges. | To give the students a rudimentary understanding of electric field. |
| **Step I** | *Conductors and insulators*  Conductors are materials which allow electric currents to flow through them easily e.g. all metals, inorganic acids etc.  Insulators are materials which do not allow electric current to flow through them easily. E.g. dry wood, glass, plastic etc. | To differentiate between a conductor and an insulator. | To ensure proper understanding of the lesson. |
| **Step II** | *Resistance*  Resistance is defined as the opposition to the flow of charges (electrons) or current. Its unit is the ohm. | The students listen attentively the teacher’s explanation. | To ensure that all the students are carried along. |
| **Step III** | *Calculate the electrical work done in an electrical circuit*  Work is done when electricity flows from one point to another of different potential. If **Q** coulombs of electricity flows between the two points whose differences in potential is **V** volts, then the work done (**W**) is given by;  **W = QV** **(joules) (J) --------(1)**  **W = IVT ---------------(2)**  **W = I2RT** **------------(3)**  Where;  **W** is work done in joules (**J**)  **Q** is charges in coulombs (**C**)  **V** is potential difference in volts (**v**)  **I** is electric current in ampere (**A**)  **t** is time in seconds (**s**)  and **R** is resistance in ohms (**Ω**) | The students listen attentively the teacher’s explanation. | Consolidate acquired knowledge on electric circuit |
| **Summary** | **Conductors** are materials which allow electric current to flow through them easily.  **Insulators** are materials which do not allow electric current to flow through them easily.  **Resistance** is the opposition to the flow of electric current. Its unit is the ohm (Ω)  For series connection of resistances;  **R = R1 + R2 + R3 +…+ Rn**  For parallel connection of resistances; | 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 an electric circuit? 2. Why are resistors in an electric circuit 3. Draw the types of electric circuit | The students answer the questions 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)** | * + - 1. The headlamp of a car takes a current of 0.4 ampere from a 12 volt supply. The energy produced in 5 minutes is?       2. An electric appliance takes 5A when operated on a 220v supply. Find the cost of operating the appliance for 12hours at 10kobo per KWh. | The students copy the questions into their exercise books and take home for solving. | To encourage critical thinking of the students at home. |



12/7/2023

Principal Head Instuctor