**EMERALD ROYAL INT’L SCHOOL**

**LESSON PLAN/NOTE FOR WEEK 4 ENDING: 26TH MAY, 2023**

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| **Term** | 3rd |
| **Week** | 4 |
| **Date** | 26/05/2023 |
| **Class** | SSS 2 |
| **Subject** | Physics |
| **Topic** | Electric field 2 |
| **Sub-topic** | Electric field intensity |
| **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:   1. Explain the electric field intensity 2. Solve simple examples involving the electric field intensity of charges. |
| **Rationale** | To enable the students understand the concepts of electric field intensity of charges. |
| **Previous knowledge** | Students should have been taught on electric forces and coulomb’s law |
| **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 383-392 * P.N. Okeke. Macmillan Senior Secondary Physics. Pearson. Page 233-241 |

**LESSON DEVELOPMENT**

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| **STEPS** | **TEACHER’S ACTIVITIES** | **STUDENTS’ ACTIVITIES** | **LEARNING POINTS** |
| **Introduction** | The teacher introduces the lesson by explaining that the strength of an electric is defined in terms of the force on a positive test charge. The force itself depends on the charge of the body and the field strength or intensity. | The students use electric lines of force to describe the magnitude of electric charges | To give the students a rudimentary understanding of electric field strength. |
| **Step I** | *Electric field intensity*  The strength of an electric field (or electric field intensity) E, at any point is defined as the force per unit positive charge (q) at that point.  It is given mathematically as;  E = -------(1)  but recall that from coulomb’s law, F is given as; F = ------- (2)  Substituting equation (2) into equation (1), we have that the electric field intensity is given as E = -------- (3) | Begin to develop an idea of electric field intensity. | To ensure proper understanding of the lesson. |
| **Step II** | *Examples*  Calculate the electric field intensity in vacuum at a distance of 10cm from a charge of 5 C. (take = 9.0x109 NM2C).  *Solution*  Using, E =  F =  E = 4.5 NC-1 | The students listen attentively the teacher’s explanation. | To ensure that all the students are carried along. |
| **Summary** | Electric field intensity E at any point is defined as the force per unit positive charge (q) at that point. | 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 what is meant by:   1. Electric field intensity 2. Electric lines of force | 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.  A small object carrying a charge of -5 10-9  C experiences a downward force of 10Newtons when placed at a certain point in an electric field. What is the electric field intensity at that point. | The students copy the questions into their exercise books. | To facilitate logical thinking of students at home. |



20/7/2023

Principal Head Instuctor