WEEK ENDING.....07/10/2022.....

SUBJECT...INTEGRATED SCIENCE

REFERENCE...SYLLABUS(CRDD,2007), SCIENCE FOR JHS .....

FORM.....BASIC 8.....WEEK.....4.....

DAY/DURATION	***TOPIC/SUB-TOPIC/ASPECT***	***OBJECTIVES/R.P.K***	***TEACHER-LEARNER ACTIVITIES***	**T/L MATERIALS**	CORE POINTS	**EVALUATION AND REMARKS**
TUESDAY **04-10-2022** **1:20PM – 2:40PM** **80min**	**Topic;** Basic Electronics **Sub-Topic;** Characteristics of Transistors	By the end of the lesson the Pupil will be able to; Identify the characteristics of transistors. **RPK** Pupils were taught lessons on transistors in basic 7.	**Introduction;** Review Pupils knowledge on the previous lesson. **Activities;** 1. Pupils in small groups to discuss about the characteristics of a transistor. 2. Pupils brainstorm to explain the characteristics of transistors. **Closure** Assist Pupils to use transistors in electric appliances.	**Battery, Switch, led bulb, Wire, Pictures.**	**Characteristics of Transistor** Transistor Characteristics is the basis that represents the relationship between the Electric Current and Electric Voltage of a circuit. There are three types of Transistor characteristic curves based on the configuration of the circuit. 1. **Input Characteristic** - The Input characteristics describe any changes that occur in the Input Current because of the variation of	**Exercise;** State and explain the characteristics of Transistors.

					the Input Voltage by keeping the Output Voltage constant. 2. **Output Characteristic -** This is a graph of Output Current on one axis and Output Voltage on another, at a constant Input Current. 3. **Current Transfer Characteristic -** This is a characteristic curve that points to the fluctuation of the Output Current to that of the Input Current. Here, the Output Voltage is kept constant	

THURSDAY **06-10-2022** **8:05AM – 9:15AM** **70min**	**Topic;** Basic Electronics **Sub-Topic;** Importance of Transistors	**Objective;** By the end of the lesson the Pupil will be able to; Explain 4 importance of transistors in electrical circuits. **RPK** Pupils have been taught the uses of transistors	**Introduction;** Through questions and answers, review Pupils knowledge on the previous lesson. **Activities;** 1. Pupils brainstorm to mention the uses of Transistors 2. Discuss the importance of Transistors with the Pupils. **Closure;** Pupils in groups to practice using transistors in electrical circuits.		**Importance of Transistors in circuits;** • The core use of transistors includes switching applications or both amplification and switching. • There is a kind of transistors that produce current flow depending on the amount of light shined upon them; those are known as phototransistors. • Bipolar Junction Transistors(BJT) can cause a greater current flow from the emitter to the collector when a small amount of current is passed through the base.	**Exercise;** 1.State 4 uses of Transistors in circuits. 2. Explain the importance of Transistors. **REMARKS**

					• Field-Effect Transistors act as voltage controlled devices. Field-Effect Transistors (FETs) have very high input impedance and it helps to run very little current through them. This is helpful for not causing the power source to load down as they are not disturbing the original circuit power elements to which they are connected. FETs are cheaper and easier to manufacture and cause less loading. • Heterojunction Bipolar Transistors (HBT) can provide faster switching speeds	

					and are used in analog and digital microwave applications. They are priceless to fabricate and can provide better lithographic yield. They are used in mobile and laser drivers as power amplifiers. • Darlington Transistors have a much higher ability to gain current. Because of its sensitivity, it can pick currents from human skin, which is why it is used to create a touch-sensitive button. • Schottky Transistors divert high input currents and prevent the transistors from saturating.	

					• Multiple Emitter Transistors are used in Transistor-Transistor Logic (TTL) and NAND logic gates. • Dual Gate MOSFETs are used in RF mixers/multipliers and RF amplifiers where two controlled gates are required in a series.	