**LESSON DEVELOPMENT 0NE**

**CONVERSION OF BASE 2 AND BASE 10**

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| **STAGE/TIME** | **TEACHER’S ACTIVITIES** | **LEARNER'S ACTIVITIES – MIND/HANDS ON** | **LEARNING POINTS** |
| **Step 1**  **Introduction – Introductory Activities**  **(5 minutes)** | Revises with the pupils, the relationship between base 2 and base 10. | ***To base 10***  111 base 2  = 1 x 2^2 + 1 x 2^1 + 1 x 2^0  = 1 x 4 + 1 x 2 + 1 x 1  = 4 + 2 + 1 = 7 base 10  ***To base 2***  7/2 = 3 R 1  3/ 2 = 1 R 1  1/2 = 0 R 1  7 base 10 = 111 base 2 | Linking the Previous knowledge to the new lesson |
| **Step 2**  **Development**  **(5 minutes)**  **Grouping** | 1. Groups the learners into four groups – A, B, C, and D.  2. Guide the learners to choose a leader and secretary for your group.  3. Gives each group learning materials – Chart showing relationship between base 2 and 10. | 1. Belong to a group.  2. Choose their leader and secretary.  3. Received learning materials for their group. | Learner’s group, leader and secretary confirmed. |
| **Step 3**  **Development – Groups Activities**  **(15 minutes)** | Guides the pupils to convert 110 base 10 to base 2.  Lets them convert 1101110 base 2 to base 10 and state the relationship between both questions. | 110/2 = 55 R 0  55/2 = 27 R 1  27/2 = 13 R 1  13/2 = 6 R 1  6/2 = 3, R is 0  3/2 = 1 R 1  1/2 = 0 R 1  110 base 10 = 1101110 base 2. | Base 2 and base 10 |
| **Step 4**  **Development – Groups Activities and Presentation**  **(10 minutes)** | Presentation |  | Groups Activities and Presentation |
| **Step 5**  **Development**  **(5 minutes)** | To conclude the lesson, the teacher revises the entire lesson and ask the key questions.  **SUMMARY**  To convert an expression in base ten notation to base two notation, just do the arithmetic. | The learners listen, ask and answer questions.  **KEY QUESTIONS**  Convert 88 to base 2 and the result, convert it back to base 2. | Lesson Evaluation and Conclusion |