**LESSON DEVELOPMENT FOUR**

**ADVANTAGES AND DISADVANTAGES OF FRICTION**

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| **STAGE/TIME** | **TEACHER’S ACTIVITIES** | **LEARNER'S ACTIVITIES – MIND/HANDS ON** | **LEARNING POINTS** |
| **Step 1**  **Introduction – Introductory Activities**  **(5 minutes)** | ***Asks pupils –***  1. What is friction?  2. List 4 ways of overcoming?  2. What are the effects of friction? | ***As in lesson development 1, 2 and 3.*** | 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 – | 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**  **(10 minutes)** | Since friction is very useful in some cases while harmful in some cases.  ***Guides and Ask pupils –***  1. What are advantages of friction?  2. What are the disadvantages of friction? | **Advantages of friction:**  1. It enables us to walk freely.  2. It helps to support ladder against wall.  3. It is friction which holds the nail.  4. Objects can be piled up without slipping.  5. It generates heat.  6. It enable to be aware of defects machines.  **Disadvantages of friction:**  1. It prevents movement.  2. It causes wear and tear of machines.  3. It makes machines not to last long.  4. It produces heat from machines. | Ways of reducing friction. |
| **Step 4**  **Development – Groups Presentation**  **(10 minutes)** | Asks each group to present their results/solutions so that you can compare responses with those in other groups. | **Presentation – Call on any member of at least two pairs in each to make presentation to the class.** | Group Presentation |
| **Step 5**  **Conclusion**  **(10 minutes)** | To conclude the lesson, the teacher revises the entire lesson and ask the key questions.  **SUMMARY –**  Friction plays a vital role in our daily life. Without friction we are handicap.  Despite the fact that the friction is very important in our daily life. It also has some disadvantages. | The learners listen, ask and answer questions.  **KEY QUESTIONS –**  ***As discussed in your group, state the advantages and disadvantages of friction.*** | Lesson Evaluation and Conclusion |

***Reference book – Primary 4, 5 & 6 Basic Science & Technology***