**MATHEMATICS LESSON PLAN**

**GRADE 9**

**TERM 2: April – June**

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| PROVINCE: |  |
| DISTRICT: |  |
| SCHOOL: |  |
| TEACHER’S NAME: |  |
| DATE: |  |
| DURATION: | 1 Hour |

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| 1. **TOPIC: CONSTRUCTION OF GEOMETRIC FIGURES:** Investigating properties of geometric figures **(Lesson 6)** |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson, learners should know and be able to,** by construction, explore the minimum conditions for two triangles to be congruent. |

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| 1. **RESOURCES:** | DBE workbook, Sasol-Inzalo Book 1, textbook, ruler, protractor, pair of compasses, pencil, eraser. |
| 1. **PRIOR KNOWLEDGE:** | line segments |
| 1. **REVIEW AND CORRECTION OF HOMEWORK** (suggested time: 10 minutes) | |
| Homework provides an opportunity for teachers to track learners’ progress in the mastery of mathematics concepts and to identify the problematic areas which require immediate attention. Therefore, it is recommended that you place more focus on addressing errors from learner responses that may later become misconceptions. | |
| 1. **INTRODUCTION** (Suggested time: 10 Minutes) | |
| **Baseline Assessment:**  Ask the learners to:   * construct intersecting line segment PD = 6 cm and PQ = 7,5 cm. * construct with and . * compare their figures. * explain why their figures are the same or different.   **Note:**   * Learners should realise that the size of is different although their line segments are all equal in length. * Their triangles differ in size although they have angles of the same size. | |

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| 1. **LESSON PRESENTATION/DEVELOPMENT**(Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  **(Learners are expected to:)** |
| Through guided-instruction, do the following constructions with learners:  **Activity 1**   1. Construct with , and . Measure and record the size of the interior angles. 2. Construct with , and . Measure and record the size of the interior angles. 3. Trace the two triangles that you have constructed on a loose sheet of paper. 4. Neatly cut out the traced triangles. | * do the activity together with the teacher. * write down their observations * draw conclusions from observations |
| Take learners through the following steps if necessary:   * Draw a rough sketch of the triangle. * Construct one of the given line segments. * Use one end of the line segment as the centre of a circle with the radius that is equal to the second side. * Use the other end of the line segment as the centre of a circle with the radius that is equal to the third side. * Join one intersection of the circles to the endpoints of the line segment you constructed.   Their first construction should look as follows if they correctly followed the steps:    Ask learners the questions below to consolidate the activity:   1. How do the cut out triangles compare? 2. How do they compare to those of your classmates? 3. What minimum information were you given to come up with the triangles?   Conclude the activity by pointing out that if three sides of one triangle are equal to three sides of another triangle, then the two triangles have the same size and the same shape. The two triangles are congruent to each other.  **Activity 2**   1. Construct with , and . Measure and record the lengths of the sides of the triangle. 2. Trace the two triangles that you have constructed on a loose sheet of paper. 3. Neatly cut out the traced triangles.   Ask learners the questions below to consolidate the activity:   1. How do they compare to those of your classmates? 2. What minimum information were you given to come up with the triangles? |  |
| Conclude the activity by pointing out that if three sides of one triangle are not equal to three sides of another triangle, then the two triangles do not have the same size although they may have the same shape. The two triangles are not congruent to each other. Therefore AAA is not a condition for two triangles to be congruent to each other since you may construct triangles of different sizes that have corresponding angles that are equal. |  |
| **8. CLASSWORK**(Suggested time: 15 minutes) | |
| 1. Complete the table below:  |  |  | | --- | --- | | Conditions | Congruent (Yes or No) | | 3 sides (SSS) |  | | 3 angles (AAA) |  |  1. Sasol-Inzalo Book 1, no. 1 (a) page 188. | |
| **9. CONSOLIDATION/CONCLUSION& HOMEWORK**(Suggested time: 5 minutes) | |
| 1. **Emphasise** the condition (given information) that results in triangles of the same size and same shape.   **Notes for the teacher**:   * Let the learners suggest how the construction could be done (This is done in Grade 8) * Allow them to start with different line segments. * Explain why the circles are drawn. We have two vertices. We want to locate the third vertex. We know how far it is from the other two vertices. This will make them see that arcs are sufficient.  1. **Homework** 2. Sasol-Inzalo Book 1, no. 1 (b) page 188 3. DBE workbook 1, no. 2, page 107. 4. Give reasons why the following pair of triangles are congruent.   F  A  D  E | |