



**DATE: TERM 3 2021**

**TIME: 3 HOURS**

**TOTAL: 50**

**NAME OF LEARNER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ GRADE 9: \_\_\_**

**STREET DESIGN PROJECT**

| **TIME:** | Three periods each 1 hour |
| --- | --- |
| **TARGET AUDIENCE:** | Grade 7 learners |
| **REQUIRED PREVIOUS KNOWLEDGE:** | Identify and describe lines.  Identify and classify 2d shapes. |
| **REQUIRED MATERIALS:** | Rulers, A4 paper, pencils , colour pens or pencils, protractor. |

Learners will demonstrate their knowledge of parallel and perpendicular lines and properties of the six quadrilaterals.

**STREET DESIGN PROJECT**

For this project, each learner will make his or her own map for a fictional residential area. This residential area will consist of streets comprising of parallel lines, perpendicular lines and diagrams constructed from 2d shapes, such as houses, shops, cars trees and plants etc.

There are three sections to the project:

1. Section A is a teacher guided activity on Properties of quadrilaterals. This section is marked using a memorandum.
2. Section B is a teacher guided activity on Geometry straight lines. This section is marked using a memorandum.
3. Section C is an individual learner activity and is marked using a rubric.

**SECTION A**

**THIS IS A TEACHER GUIDED SECTION**

1. What do the following terms mean:
   1. parallel lines

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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(1)

* 1. perpendicular lines

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* 1. complementary angles

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* 1. supplementary angles

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1.5 vertically opposite angles

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1. Study each diagram and then use geometric terms to describe what is shown.

Graphical user interface, application, table

Description automatically generated

(5)

1. Use a protractor to measure the size of each of the angles in the diagram below and then indicate the size and name of the angle in the table provided.

A screenshot of a computer

Description automatically generated with medium confidence

| Name of angle | Measure of angle size | Type of angle |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

(10)

**Total 20**

**SECTION B**

**THIS IS A TEACHER GUIDED SECTION**

For each diagram:

1. answer the questions on the quadrilateral.

EXAMPLE:

The diagram below is a quadrilateral.

Graphical user interface

Description automatically generated

Identify the type of quadrilateral represented in the diagram.

| Square |
| --- |

Use the diagram to provide 3 properties of the quadrilateral identified .

| 1. All 4 sides are equal |
| --- |
| 1. Two pairs of Opposite sides are parallel |
| 1. All 4 interior angles are equal to 900 |

DIAGRAM ONE

The diagram below is a quadrilateral.

Graphical user interface

Description automatically generated

Identify the type of quadrilateral represented in the diagram.

| (1) |
| --- |

Use the diagram to provide 3 properties of the quadrilateral identified

|  |
| --- |
|  |
|  |
|  |
|  |
| (3) |

DIAGRAM TWO

The diagram below is a quadrilateral.

Graphical user interface

Description automatically generated

Identify the type of quadrilateral represented in the diagram.

| (1) |
| --- |

Use the diagram to provide 3 properties of the quadrilateral identified

|  |
| --- |
|  |
|  |
|  |
|  |
| (3) |

DIAGRAM THREE

The diagram below is a quadrilateral.

Graphical user interface

Description automatically generated

Identify the type of quadrilateral represented in the diagram.

| (1) |
| --- |

Use the diagram to provide 3 properties of the quadrilateral identified

|  |
| --- |
|  |
|  |
|  |
|  |
| (3) |

DIAGRAM FOUR

The diagram below is a quadrilateral.

Graphical user interface

Description automatically generated

Identify the type of quadrilateral represented in the diagram.

| (1) |
| --- |

Use the diagram to provide 3 properties of the quadrilateral identified

|  |
| --- |
|  |
|  |
|  |
| (3) |

DIAGRAM FIVE

The diagram below is a quadrilateral.

Graphical user interface, application

Description automatically generated

Identify the type of quadrilateral represented in the diagram.

| (1) |
| --- |

Use the diagram to provide 3 properties of the quadrilateral identified

|  |
| --- |
|  |
|  |
|  |
|  |
| (3) |

**Total 20**

**Section C**

**This is a learner activity that should be presented in class.**

Use the information that you have learnt about geometry of straight lines and geometry of 2d shapes to create a poster on a map for a fictional residential area.

1. **Appearance**

* **The project must be done on A3 paper .**
* **It must be drawn neatly and in colour.**
* **Neatly print your name in the top right corner of the project.**
* **You may add detail as long as it does not interfere with the requirements or the appearance of the map.**
* **Make use of the different 2d shapes that you have learnt about to construct the buildings.**
* **Remember to be creative.**
* **Your project must be unique to you.**

1. **Drawing the Streets**

* **At the top left corner of the poster, indicate the name of your residential area and indicate the number of houses in the residential area.**
* **There must be two or more parallel streets. Each street should be named for reference.**
* **There should be Two (2) or more perpendicular streets. These should be named as well.**
* **There should be two other intersections.**
* **Draw Traffic lights or stop signs at the different intersections.**

1. **Adding the Buildings**
2. **Your map must include the following buildings.**
3. **Spaza shop**
4. **School**
5. **Library**

**c. Petrol station**

**d. Your own house**

**e. Place of prayer (Church, Temple, Mosque, etc)**

1. **Ensure that your buildings are drawn according to the type of quadrilaterals and 2D shapes that you have learnt about.**
2. **Appropriate building names must be placed on “signs” on or near the building.**
3. **Location of the Buildings**

**The buildings must be placed in the following locations.**

**1. The school and the library adjacent to each other.**

**2. The spaza shop and your house on opposite sides of a street.**

**3. The Church and police station at corresponding angles.**

**4. The library and petrol station at *vertically*  opposite angles.**

**5. The Petrol station and Spaza shop at supplementary angles.**

**6. The Place of prayer and Your house should be two streets away from each other.**

1. **Including a Park**

**In the lower left corner of your residential map, you will create a park.**

**The park must meet the following criteria:**

* + **The park is a square.**
  + **Within this square draw a round sandbox.**
  + **Finally, draw an isosceles triangle for the picnic area.**

1. **Additions**

* **You must add 5 (five) other items to your map.**
* **Some possibilities are, slide and swings for the park, picnic tables in the picnic area of your park, extra roads, people, trees/plants, cars and trucks on the roads, traffic signs, a railroad, a bus station, a river, etc**

**(10)**

**Well done! … you're reached the end!**

**Total : 50**