MATHEMATICAL LITERACY PROGRAMME FOR GRADE 11 LEARNERS FROM 27 APRIL – 8 MAY 2020

TOPIC: MAPS, PLANS AND REPRESENTATIONS OF THE PHYSICAL WORLD
MARKS IN EXAMINATION PAPER: 40% +/- 5% IN PAPER 2
MAIN RESOURCE(S) SUGGESTED: DEPENDS PER SCHOOL
ADDITIONAL RESOURCES: ANY APPROVED TEXTBOOK AND/ OR STUDY GUIDE

MEDIA:
- ➤ SABC TV, OVHD AND DSTV CHANNEL 319.
- ➤ ECDOE WEBSITE http://www.ecdoe.co.za/ http://www.ecexams.co.za/ http://www.eccurriculum.co.za/
- ➤ DBE WEBSITE. https://www.education.gov.za/

WEEK 1: 22 – 24 APRIL 2020

USE THE AVAILABLE TEXTBOOK AS FOLLOWS:

- ➤ Read and follow the explanation about the topic/ concept.
- ➤ Follow and practice Examples indicated 'E.G'.
- ➤ Then do Activities without looking at the solutions first.
- ➤ Then check your solutions against solutions provided.
- ➤ Then do corrections.
- ➤ Double or triple check if you are able to do Activities on your own without looking at the solutions until you master the concept(s).

WEEK 1: 27 APRIL – 1 MAY 2020

DATE	EXAMPLES	ACTIVITY
20/04	Do Example 1 on page 2 of this document and do more examples focusing on the sub-topics under activities using your textbook and/or any study guide you have.	Number and bar scales
21/04		Number and bar scales
22/04		Number and bar scales
23/04		Calculations
24/04		Street maps

WEEK 2: 4 – 8 MAY 2020

DATE	EXAMPLES	ACTIVITY
27/04	Do Example 1 on page 2 of this document and do more examples focusing on the sub-topics under activities using your textbook and/or any study guide you have.	National, provincial and train maps
28/04		Strip chart
29/04		Calculations
30/04		Plans
1/05		2D plans

NOTE: Some questions from previous years question papers have been added in this document for you to have an idea on how the topic is assessed. Use them to practice more!

REMEMBER, PRACTICE MAKES PERFECT!
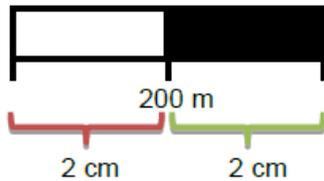
SO, PRACTICE, PRACTICE AND PRACTICE!

building blocks for growth

PGDP
EASTERN CAPE
2004 - 2014

Ikamva eliqaqambileyo!

Example

As an example, consider the bar scale below.

200 m

2 cm   2 cm

- The white rectangle (from 0 m to 200 m) is exactly 2 cm long.
- The black rectangle (from 200 m to 400 m) is also 2 cm long.
- This means that the whole length (from 0 m to 400 m) is 4 cm long.

In other words, the bar scale is telling us that:

- 2 cm measured on the map is equivalent to 200 m in actual distance;
- or that 4 cm measured on the map is equivalent to 400 m in actual distance.

Question:

Using this bar scale, how long will a measured length of 15,5 cm amount to in actual distance?

Answer:

Measuring on the bar scale shows that 2 cm = 200 m → so 1 cm = 100 m.

Therefore 15,5 cm is equivalent to 100 m × 15,5 = 1 550 m

= 1,55 km

WORKED EXAMPLE 1: USING THE BAR AND NUMBER SCALES

QUESTION

1. You are given a map with the number scale of $1 : 40$. You measure a length (on the map) of 10 cm. What is this distance in real life?
2. You are given a map with the number scale of $1 : 500$. You measure a distance on the map of 15 cm with your ruler. What is this distance in real life?

You are given the following bar scale:

0 m   50 m   100 m   150 m
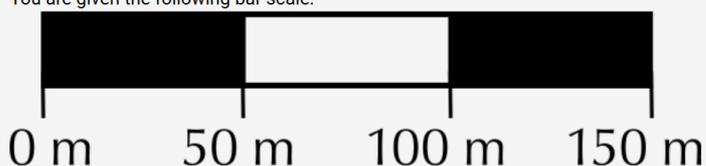
3. You measure the distance on the map to be 15 cm. What is the actual distance?

You are given the following bar scale:

0 m   200 m   300 m
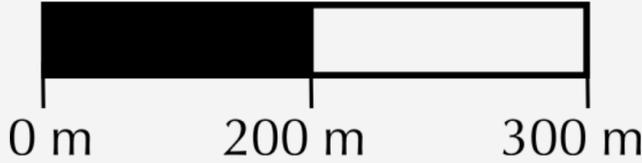
4. You measure the distance between two points on the map to be 11 cm. What is the distance on the ground?

SOLUTION

1. Scale is 1 : 40. 10 cm × 40 = 400 cm = 4 m The distance on the ground (in real life) is 4 m.

2. Scale is 1 : 500 Therefore actual distance is 15 cm × 500 = 7 500 cm = 75 m.

3. 1 segment = 1,5 cm long, and represents 50 m. 15 cm ÷ 1,5 cm (length of segment) = 10 so you have measured 10 segments in total. 10 segments = 10 × 50 m = 750 m

4. 1 segment = 2 cm long and represents 200 m. 11 cm ÷ 2 cm (length of segment) = 5,5, so you have measured 5,5 segments in total. 5,5 segments = 5,5 × 200 m = 1 100 m = 1,1 km.

Questions (Nov 2019, Paper 1)

Study the map below and answer the questions that follow.
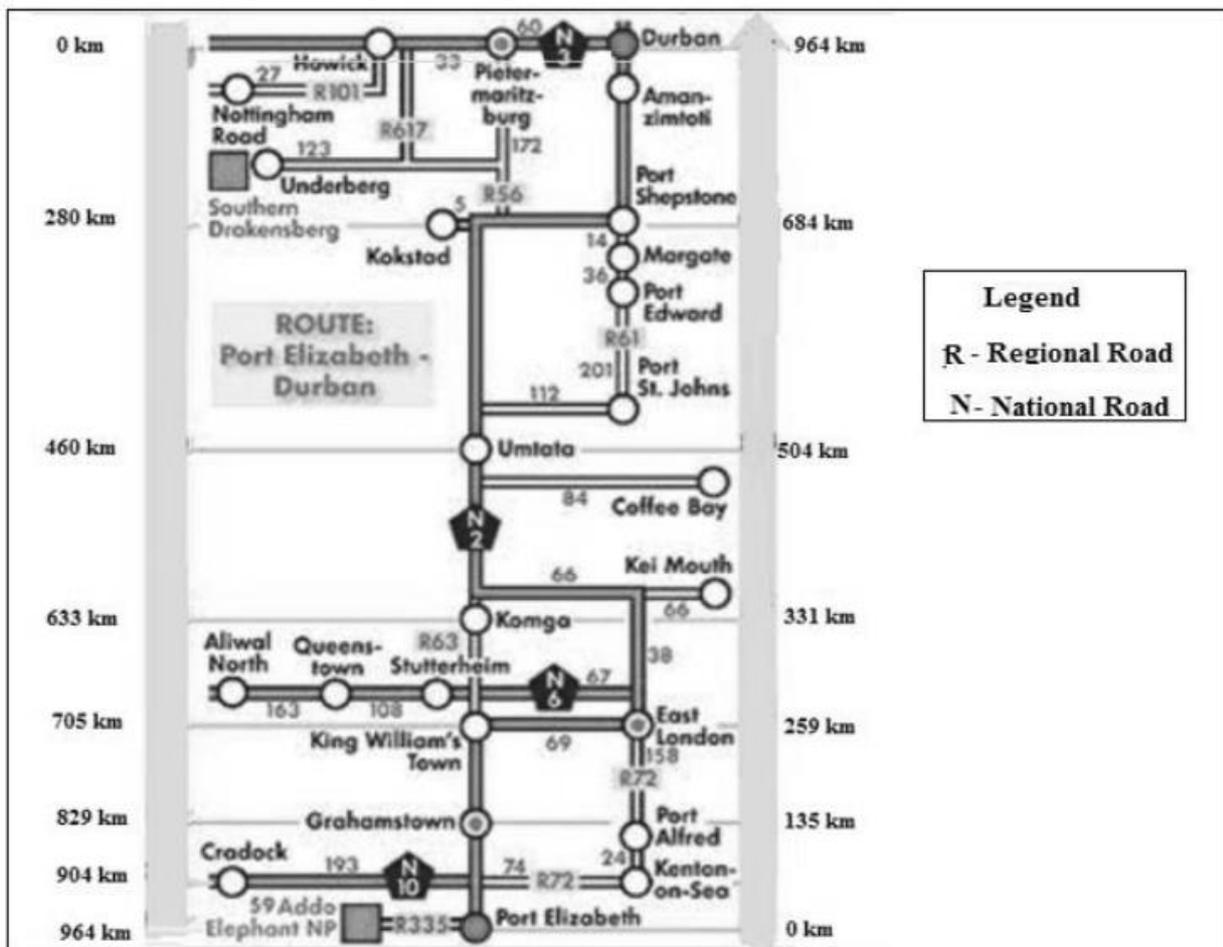

building blocks for growth.

4.1 Name the type of map shown above. (2)

4.2 Write down the total distance from Durban to Port Elizabeth. (2)

4.3 Determine the number of regional roads found on the map. (2)

4.4 Name the national road from Durban to Port Elizabeth via East London. (2)

4.5 Calculate the total distance from Grahamstown to Umtata (Mthatha). (2)

4.6 Ivani took 2,5 hours to travel from East London to Port Elizabeth. Calculate Ivani's speed (in km/h).

You may use the formula:
$$\text{Speed} = \frac{\text{distance}}{\text{time}}$$
(3)

4.7 Explain how a person will travel from Port Edward to Umtata. (2)

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Questions (Nov 2019, Paper 2)

2.3 Study the following maps on flight distances and duration of flights from various cities to the Kruger National Park.

Flight Distances to Kruger National Park

Duration of flights to Kruger National Park
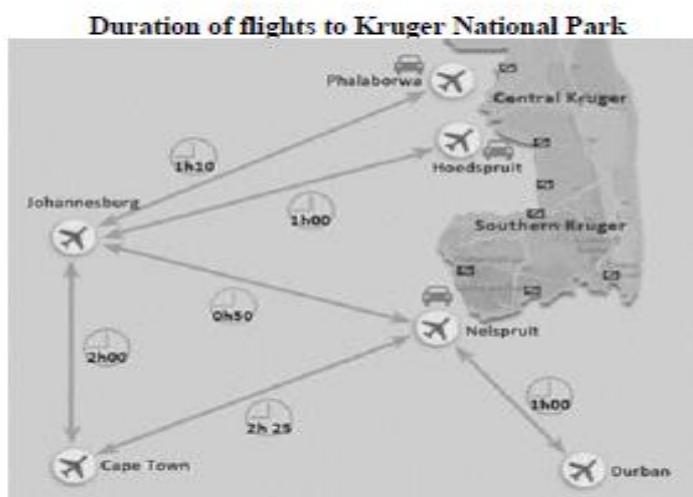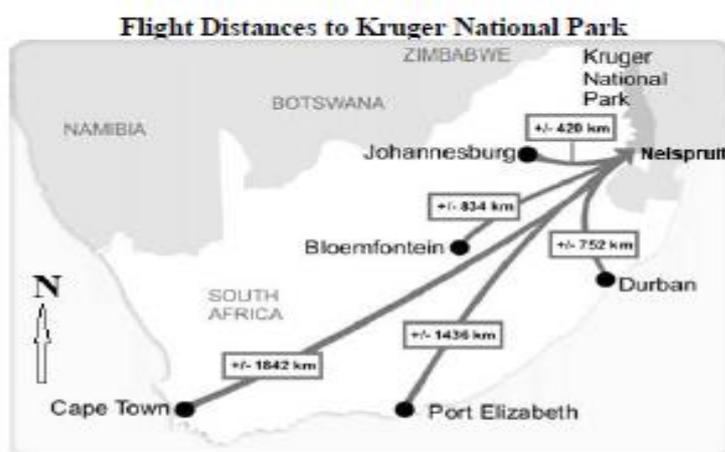
2.3.1 In which direction does the plane travel from Port Elizabeth to the Kruger National Park? (2)

2.3.2 A businessman needs to be at the Kruger National Park (Nelspruit) for a meeting at 13:30. He is first going to meet a business partner for two hours at OR Tambo International Airport (Johannesburg).

Will the businessman be on time for his meeting if his flights depart at 08:20 from Cape Town International Airport and then again at 12:55 from OR Tambo International Airport (Johannesburg)? (4)

2.3.3 Determine the speed that the aeroplane is travelling at from Cape Town to Nelspruit. Give your final answer to the nearest kilometre per hour.

You may use the following formula:
Distance = Speed × Time (5)

2.3.4 Use the map for the flight distances and determine the probability that a aeroplane that is randomly selected, will travel from a coastal city. (2)

Questions (Nov 2018, paper 1)

QUESTION 4

4.1 Rochester is in the north east of New York state. Study the map below and answer the questions that follow.
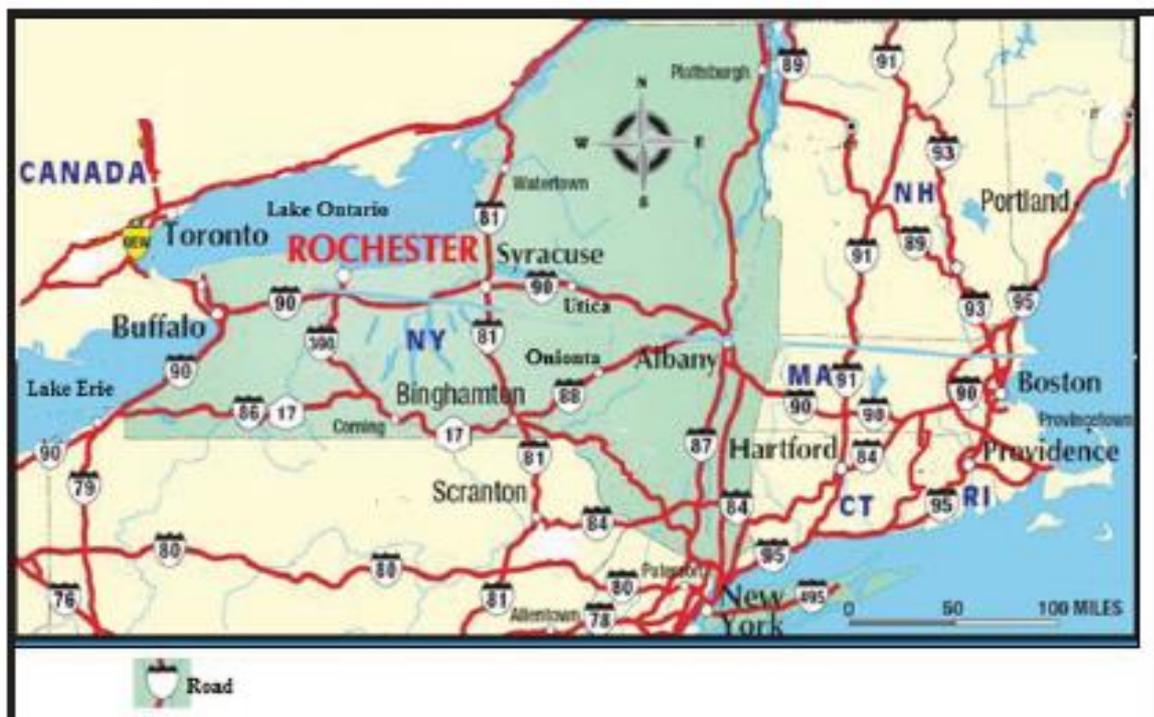
[Source: filmrochester.org]

4.1.1 Write down the name of the city where Roads 84, 91 and 95 meet. (2)

4.1.2 Using the given scale, determine the actual distance in miles between Buffalo and Albany, if the distance on the map between these two places is 7,5 cm. (3)

4.1.3 Identify the roads that Bande will use to travel from Scranton to Albany. (2)

4.1.4 Write down the compass direction when travelling from Hartford to Boston. (2)

4.1.5 Identify the road that will help you to travel from New York to the far west of the map. (2)

4.1.6 Determine the probability of randomly selecting a road on the map with an even number. (2)

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