



**EXAMINATIONS AND ASSESSMENT CHIEF DIRECTORATE**

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## **2018 NSC CHIEF MARKER'S REPORT**

<b>SUBJECT:</b>	<b>Mathematical Literacy</b>
<b>PAPER:</b>	<b>2</b>
<b>DURATION OF PAPER:</b>	<b>3 hours</b>
<b>DATES OF MARKING:</b>	<b>30/11 – 14/12/2018</b>

### **SECTION 1: (General overview of Learner Performance in the question paper as a whole)**

Although the question paper was challenging, some learners performed much better in the 2018 MLIT P2 than the previous years, with rare cases where learners don't have a clue of what is expected from them. Even if it is said the question paper was more accessible to learners, the marking shows another picture of the performance, because where learners were well prepared, the marks look good to excellent as opposed to where learners were not well prepared.

### **SECTION 2: Comment on candidates' performance in individual questions**

**(It is expected that a comment will be provided for each question on a separate sheet).**

#### **QUESTION 1**

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

According to the Rasch, the average percentage performance of the learners is 54% which equates to an average mark of 21 out of 38 for this question. Some questions were answered very well while others were poorly answered.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

1.1.1 Learners could not identify the discount price and selling price to use as a fraction to work out a percentage. They did not follow the instruction to round off to one decimal place. The correct values were used, but with any other operation, such as addition, subtraction and multiplying these values.

1.1.2 Learners took the Total Due and divide it by 1,14 to find the value exclusive of VAT.

1.1.3 Majority of learners could answer this question due to the word "door protector",

otherwise some of them would not be able to understand what “smash and grab” means.

1.1.4 Learners used the compound interest formula which did not work for this question as there was a part of a year that had to be worked out differently. Learners could not change 1,25 million to a number format. They work out the final value and then concluded that it is enough, while the question referred to interest.

1.1.5 Learners work out 15% on the VAT increased price instead of on the original price.

1.2.1 (a) In a given formula, learners changed the operational signs from  $\times$  to  $+$  or vice versa. They could not increase by the 2% (it was omitted), or they only work out the value of 2% without adding it. Some of them rounded down instead of up or did not round at all.

(b) If they did not round up in 1.2.1 (a), they could not find the accurate answer of 1.2.2 (b)

1.2.2 Was a well answered question.

1.3 Instead of adding times, learners also subtracted. They missed out the second 20 minutes because they did not read the information stating that there is a second coat.

(c) Provide suggestions for improvement in relation to Teaching and Learning

- The different ways to calculate percentages should be emphasized in teaching.
- Emphasize the importance of reading instructions.
- Learners should be taught to work from the top down and bottom up.
- Familiarise students with new technology and what is happening for learners to be clued up.
- Refrain from using the compound interest formula.
- Teach learners to work with decimals and how to write it in number format.
- Learners to be taught the difference between final value and interest.
- Teach learners that conclusions cannot be based on incorrect calculations.
- Teachers to make learners aware to read the information to understand the VAT inclusive and VAT exclusive price to use the appropriate VAT.
- Learners should be made aware of not changing signs when a formula is given.
- Learners should be taught that you cannot buy paint in portions.
- Times should be properly taught within the context of the questions.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- Use Lead teachers in cluster to conduct workshops on errors made by learners as explained above.
- Teacher should not be teaching the compound interest formula, but rather a

step-by-step solution for compound interest.

- Measurement remains a challenging topic and should be work shopped by subject advisors or lead teachers.

## QUESTION 2

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

According to the Rasch, the average percentage performance of the learners is 61% which equates to an average mark of 23 out of 38 for this question. Some questions were answered very well while others were poorly answered.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

2.1.1 (a) Learners used incorrect data instead of the % change column. They swapped values

that led to a positive answer. Learners are still not using the BODMAS-rule.

(b) Learners used the correct values as in the table, but excluded the value of A calculated in 2.1.1 (a). They struggled to arrange negative and positive that were mixed.

2.1.2 Learners only referred the trend as increase without referring to the product and the period.

2.1.3 Most of the learners only named the 2 products without explaining fluctuation of the products.

2.1.4 Well answered

2.1.5 Learners could not find the intervals on the vertical axes, especially the values of the thin lines.

2.2.1 Learners only added the values from the table for UberLUX and ignored the given formula that they should have used for the Upfront option.

2.2.2 Learners did not understand the word "maximum" in the context of this question and then it also referred to minimum which confused them more. They did not know what to do. This can be seen from the Rasch that this question was poorly answered.

2.2.3 Learners could not convert 1h9min to hours only. They did not understand that they need to compare two trips to give a conclusion. Most of them only calculated 1 trip and made a conclusion which made them lose marks.

2.2.4 Question was well answered.

(c) Provide suggestions for improvement in relation to Teaching and Learning

- Teachers should drill learners how to substitute correct values from given tables (correct columns) into a given formula.
- Teachers should emphasise the effect of NOT using the BODAMS-rule.
- Learners should be exposed to negative values and the difference between a

negative and a positive value.

- Emphasis should be placed on how trends work such as two or more things that needs to be referred to.
- Learners should be taught to read the whole question before they answer it.
- Understanding of scale should be taught.
- Units such as hours and minutes should not be mixed.
- Teachers should encourage discussion whereby learners analyse and interpret the scenarios before answering the questions.
- Encourage reading newspapers and magazines to improve language.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- Work shop teachers on the importance of negative values.
- Comparing, concluding and decision make remains a concern.
- Units and rounding need to be emphasised.
- Focus on the interpretation of questions before answering them.

### QUESTION 3

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

According to the Rasch, the average percentage performance of the learners is 41% which equates to an average mark of 16 out of 39 for this question. Some questions were answered very well while others were poorly answered. Overall this question was poorly answer as seen from the Rasch.

(b) Why the question was poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

3.1.1 The learners could not identify the number of stations nor the stations with only coke and water.

3.1.2 Poorly answered due to the language used in the question.

3.1.3 (a) Learners could not explain that the height is increasing from the start mark to 10 km. Learners cannot express them clearly.

(b) Learners could not identify the lowest and highest height. And if they did, they could not simplify the ratio as 1 : ...

3.1.4 Although the explanation for cut-off times were given, learners could not explain the reason for cut-off times.

3.1.5 Learners only gave 1 calculation and concluded without comparing. Learners are sill struggling to change the subject of the formula.

3.2.1 First error was that learners did not subtract the two thicknesses of the bucket or they

only subtracted one thickness. And, had trouble with the conversion from litres to  $\text{cm}^3$ . Changing the subject of the formula was also a challenge in this question. Learners still not dividing the diameter by 2 to get the radius.

3.2.2 (a) Learners still not dividing the diameter by 2 to get the radius. Some of them still don't know the meaning of squaring and only multiply by 2.

(b) They could not interpret the diagram especially the importance of the diameter across the length of which C is part of.

3.2.3 Very poorly answered. They couldn't see that the diagram in the information part should have been used to solve 3.2.3, especially the use of the diameter.

(c) Provide suggestions for improvement in relation to Teaching and Learning

- Probability remains a challenge to learners as if it is not being taught to learners.
- In depth teaching of maps is needed.
- Learners should be taught to express themselves clearly and to be on point.
- Ratios as well as simplifying of fraction or ratios remain a problem. Should be taught throughout the year.
- Basic skills such as ratios, percentage, etc should be taught thoroughly in Grade 10 and to be used in different contexts.
- Encourage your learners when 2 things are mentioned, it means 2 calculations that must be compared and then a conclusion should be given.
- More revision should be given on changing the subject of the formula.
- Learners should be taught how conversions are being done with the given conversions.
- Difference between diameter and radius should be emphasised.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- Probability should be workshopped by subject advisors and expert teachers.
- More workshops to be conducted on Maps.
- Geography teachers can be approached to assist with the teaching of Maps.
- Packaging should be taught thoroughly and how it can be integrated between two different diagrams.
- More support material should be provided to teachers.

- Learners must get used to unfamiliar contexts.

#### QUESTION 4

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

According to the Rasch, the average percentage performance of the learners is 52% which equates to an average mark of 16 out of 35 for this question. Some questions were answered very well while others were poorly answered.

(b) Why the question was poorly answered? Also provide specific examples, indicate common

errors committed by learners in this question, and any misconceptions.

4.1.1 Learners left out the discount for online tickets. For the conversion to Rand, learners divided instead of multiplying.

4.1.2 (a) Well answered.

(b) They only managed to do the conversion, but did not divide by the number of capsules. And those who answered correctly, did not round up or down.

4.2.1 Well answered, but thousands or the number format of the decimal were omitted in the final answer.

4.2.2 The question referred to only Midlands, therefore learners did not add the total for East and West Midlands.

4.2.3 Well answered.

4.2.4 First of all, they could not arrange the values and used it as is. Some could not find the quartiles. Some also used incorrect data instead of the VFR. Learners confuse Interquartile range with range.

4.2.5 Well answered.

4.2.6 Very poorly answered. Although they had an idea to work with mean, the greatest challenge was to work with two unknown values.

(c) Provide suggestions for improvement in relation to Teaching and Learning

- Conversions should be dealt with thoroughly.
- Encourage learners first to make sense of the information before attempting the

questions.

- Tables coupled with reading, understanding and interpreting should be highly encouraged for learners to do the correct calculations.
- Teachers to encourage learners to look how value are given, eg. 115,3 thousand OR 115 300 for learners not to give answers in decimals.
- Quartiles must be taught thoroughly starting with the arrangement.
- Emphasise the difference between range and interquartile range.
- Conceptual understanding of concept is important to learners. First explain the concept before embarking on calculations.

(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.

- Subject advisors should conduct workshops on the Measures of spread for Data Handling.
- More focus should be placed on Grade 10 where the basic skills need to be taught.
- Content gap workshops are needed where teachers have difficulties.
- Subject advisors to use lead teachers to present how their strategies of teaching can improve those who are experiencing difficulties.
- Teachers must be more informed in terms of getting information from various sources such as the internet.
- Teachers should refrain from teaching outdated information and allow their teaching to be reality based.
- Lessons should be planned thoroughly to target areas which are challenging to learners.
- Alert teachers that the LOTL is English because answers were given in isiXhosa which are challenging for markers who don't know the language.