Pearson Edexcel

Examiners' Report

Principal Examiner Feedback

Autumn 2022

Pearson Edexcel iPrimary Lower Secondary (iPLS)

Year 6 Mathematics (JMA11/01)

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Autumn 2022 Principal Examiner's Report
iPrimary Lower Secondary Curriculum
JMA11 Paper 01

Overall, the candidates entered for this paper were able to make a good attempt at many of the questions. It is pleasing to see that centres continue to encourage students to show their working allowing for the award of method marks where possible, however there are still students who risk losing method marks by not using the working space provided.

Section A, as always, is a 20-question multiple choice section, each question worth 1 mark. Students continued to do well on this section, especially on the accessible, more straight forward questions, with students scoring well throughout.

In this section, students choose from given four answers. They are expected to put a cross in the box below their selected choice. It is essential that students are practiced and understand the importance of this skill. These questions are computer marked and answers left written within the question will not be picked up by the computer and marks WILL be missed out on. Candidates who do not place a cross in any of the boxes will not score any marks, even if there is evidence of the correct answer elsewhere within the question.

Section B is made up of 1-mark and 2-mark questions; the final question being a 3-mark problem solving question. Students who show their working can pick up more marks for their method. Those who do not show working sometimes miss out on awardable marks following arithmetic errors, as the working for these errors could not be followed. As with the iGCSE it will become more common to see marks only awarded on some questions if working is seen.

Question 21:

The students were required to interpret a bar chart and think how this information would have been represented in a tally chart. Many did not appear to have encountered tally marks. Frequencies were often put in the tally column. Those who used tallies usually gained both marks, though a few did not group their tallies in 5s. A common error was misreading the scale, so the frequency of black was given as 8.5

Question 22:

It was pleasing that most students were able to gain at least one of the marks on this early question, with most managing to pick up both. Students performed well in the first part of this ordering question with fewer able to work with negative numbers. A common error was to order the negative numbers as if they we natural numbers e.g. -2, -6, -9, 5, 8

Part (b) was less successful with many students unable to work with ordering fractions, decimals, and percentages. A good number of students did attempt to convert the fractions into decimals, which allowed one mark to be awarded in most cases.

Question 23:

Whilst some students were able to gain marks for working with a protractor or a ruler, a surprising amount were unsuccessful.

Part (a) required a labelled angle to be measured. Centres must encourage the correct use of a protractor. Too many students clearly used the incorrect scale, offering the acute value of 50° rather than 130°.

Part (b) required students to measure a straight line and give their answer in millimetres; it was surprising that almost 70% of students were unable to do this. Centre's must ensure that students are taught to correctly use a ruler, know where to begin measuring and how to convert between centimetres and millimetres.

Question 24:

A well answered question. Many students managed were able to find the missing factors of 24. Some unfortunately repeated factors which were already on the diagram, which lost them the chance of gaining the mark here. Most students were also able to list the factors of 16, though some omitted 16 and lost the mark. Of the students who were able to list factors, the majority went on to state the highest common factor.

Question 25:

Working with 2-D and 3-D properties was challenging for many students this series. The most successful question here was recognising faces on a triangular based pyramid. However it was surprising how few students were able to correctly state how many edges were on the cuboid, especially as the 3-dimentional image was given.

Question 26:

Students had a good idea of what they needed to do, with 85% gaining at least one mark. This most commonly was for setting up the calculation 32/100 x 150. Most students who were able to set up the calculation went on to correctly calculate the answer gaining the accuracy mark. However many students made errors working with this calculation and did not arrive at 48.

Students appear to have been taught how to cancel before multiplying fractions out, which is pleasing, however more practice is needed to avoid the errors that were seen.

Question 27:

Students seemed well rehearsed at completing this style of question, where they had to deal with calculations following the rules of BIDMAS. It was pleasing to see over 65% of students successfully calculating the simple question, and over 50% continuing to calculate the more challenging one.

Centre's need to ensure that students are taught the importance of the order of operation in this style of question.

Question 28:

Candidates found this question difficult. Many thought it showed reflection, and others just commented that the shapes were the same. For those who had the correct idea of describing a translation, miscounting was common for one or both directions. Some students unfortunately gave the reverse translation from B to A.

It was disappointing that only half of the students were able to add two points to create a square. It was common to see rectangles rather than squares. Some seemed to be looking at reflecting the given points in the x-axis.

Centre's need to encourage students to read carefully and think about what they are being asked to do; both parts of this question had errors which could have been correctly answered with care.

Question 29:

This was a two-part question where students needed to calculate a total spend followed by working out the change required from a payment. It was pleasing that this was well answered this series with high percentages of students gaining and least one of the marks, if not both.

Where a calculation error was made in part (a) candidates were able to gain the second mark if they were able to correctly use their value to calculate the change; this helped some students achieve an extra mark.

Centre's need to ensure students can practice basic arithmetic without a calculator.

Question 30:

It was very pleasing to see many students having a clear understanding of how to complete this type of multiplication question; one which is common question for this paper. Most students approached the question as a standard written, long multiplication, algorithm. It is pleasing to see fewer students giving the answer with no visible working. What was disappointing was the number of students who had both rows of multiplication correct but made an error adding them together. As usual there were many students who made an error with at least one row of working but were able to recover one mark for a correct method to calculate a total. Very few students used the grid method although it did occur.

There seemed fewer students making place value errors which was encouraging. Again, centre's need to ensure students can practice basic arithmetic without a calculator.

Question 31:

The terms mean and median seemed to be understood by the higher achieving students, as these questions were well answered for reasonably late questions in the paper. As always students mixed up the two terms, with others mistakenly working out range and mode.

These are terms which students will use as they progress with their mathematics curriculums and centres would be well placed to ensure they taught early.

Question 32:

Division is another common question for this paper which students are now accessing successfully. Working was well set out with the majority using the traditional long division method, although short division was seen and completed effectively. Few students failed to score at least one mark, and many gained both for their response.

The main error was thinking 18 went into 72 five times which resulted in the answer of 325 and the loss of the accuracy mark.

Question 33:

Candidates found this ratio question very difficult. This was set as a higher-level question than usual, with the more difficult concept of working with the given amount of one variable rather than being given the total and finding one variable.

Almost all students took the 112 to be the total number of people, not the adults, and began by dividing 112 by 7. It was pleasing that the question was accessible to some students, who were aware that the given value was for the adults and correctly calculated the number of children.

Question 34:

Algebra is still proving a very difficult concept for many students at this level; however, around half of the students managed to gain at least 1 mark on each question.

Part (a) required the students to expand and simplify an expression. This has become a common algebra question and it was pleasing to see a higher success rate this series than previously with 55% of students gaining at least one mark. Most students correctly expanded at least one of the brackets, gaining the method mark with about half of those continuing to gain the second mark for simplification.

Understandably for the penultimate question, some students did not attempt it.

Solving a simple equation, in part (b), was completed by most students, however, is was less successful than previously.

Algebra is assessed on all series and centre's need to ensure students are covering these areas of the specification.

Question 35:

Understanding the relationship between the size of the pie chart section and the size of the data being represented was challenging in this question. Very few students were able to access this ratio and proportion question. Quoting that half was bigger than a quarter and ticking the 'yes' box.

A few students were able to gain one mark for working out 60 lions on either diagram. Students who realised that the number of animals for each Pie chart was given, went on to correctly work out the proportion of Lions was 60 on both charts and gained both marks.

Using data from pie charts (in part b) was a different approach to problem solving on this paper. It was pleasing to see so many students gaining at least one mark for this 3-mark question. The most common approach was working with 1/3 x 240. This was commonly seen and many successfully found 80 animals were Monkeys. For most students this was as much as they wrote. Unfortunately being the final question, it is difficult to know if they ran out of time or were unable to continue to find the number of giraffes. Few students were able to continue with a complete method to find the number of giraffes achieving the remaining two marks.

General:

- It is pleasing to see most students now showing their working on the paper, something which centres need to continue to encourage.
- **Algebra -** centres need to be aware that students might be asked to work with any of the algebraic methods highlighted in the specification and ensure that the scheme objectives are taught.
- **Problem Solving –** Problem solving at this stage is a difficult skill to master and students will only improve at these types of questions if they are exposed to situations where they must apply their mathematical knowledge to solve a particular problem.
- **Properties of 2-D and 3-D shapes –** was an area this series that demonstrated more reinforcement was needed from centres

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