Pearson Edexcel

Examiners' Report
Principal Examiner Feedback

June 2021

Pearson Edexcel International Primary Lower Secondary (iPLS)

Year 6 Mathematics (JMA11/01)

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General comments

This paper was accessible for many students, in line with previous papers in this specification. Students were able to access most of the questions well. As in previous sittings of this specification, the paper has more questions where method marks are possible, and centres must continue to encourage their students to show working for these marks to be allocated. It is pleasing to see that centres are continuing to encourage students to show their working in the space provided on the examination paper, thus allowing for the award of method marks where possible.

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

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

Question 21: Data Handling – Pie Chart & Key

This question was poorly answered with 50% of students scoring no marks. Where students knew the term Pictogram the vast majority were able to obtain all available marks. There were some who forgot to include the key, however, use of a 1:1 key at this level was acceptable. Students should be encouraged to make their pictures simple structures that represent an easy value, 'one square = 2'. Students who did not score on this question tended to draw a tally chart or repeated the frequency table.

Question 22: Number Pyramid

Most students were able to attempt and solve this question with over 80% scoring at least 1 mark. Most students we able to gain at least 1 mark for showing that the 2 numbers in the middle line had to add to 10. Several students clearly got the answer wrong initially and then amended their answer to make it correct which was pleasing to see.

Question 23: Read & Write Numbers

Part (a) was well answered, with less than 10% of students making mistakes. There were also many correct answers seen for Part (b); spelling was an issue, but not penalised if the intention was clear. The majority of errors seen were from students who were unable to write thirty seven thousand.

Question 24: Sequencing

Although many correct answers were seen, many students were unable to understand the sequence and appeared to write any number in the spaces provided.

Question 25: Weight conversion

A surprisingly weak question with over 40% of students scoring no marks at all. The method mark in this question was regularly earned for converting one value to a compatible format for finding the total weight. Many students however found it difficult to convert ¼ Kg into 250 grams or a 0.25kg. Students would do well to remember that ¼ = 0.25 and make the connection in cases such as this.

Question 26: Square numbers

Many students were able to identify at least one square number however many were unable to identify all four of the square numbers. Even where correct, square numbers were identified marks were lost for including numbers which were not square numbers, with less than 50% of students picking up both marks. Students who performed best wrote out the square numbers from 1^2 to 10^2 to help them with identification.

Question 27: Translation description

Students found this question particularly challenging; many confusing translation with transformation giving answers such as rotation or reflection. Others described the type of triangle or commented that they were the same, whilst others wrote down all the coordinates but nothing more. Some knew what was needed, but gave the translation from B onto A, rather than the required A onto B, which did pick up a mark if fully correct. Almost 60% gained no marks at all on this question. Centres should encourage students to give the right/left movement before the up/down movement to support them towards using vectors.

Question 28: Long Multiplication

As seen regularly now, this was a well answered question with over 80% of students achieving at least 1 mark. Students tended for the standard long multiplication algorithm showing three clear lines of working. Most errors were from poor multiplication, but students were still able to pick up a method mark if there was only one arithmetic error. There were occasional place value errors, but this was not often seen.

Question 29: Angles of a Triangle

Most students were successful at calculating the missing angle in Part (a) understanding the internal angles of a triangle sum to 180. Part (b) was a

difficult question for many of the students who thought that because it looked like a right-angle then it was a right-angle, rather than working with the actual angles given. Only 30% of students successfully answered this question; those who lost the mark tended to be individuals who did not make the connection that the internal angles of a triangle sum to 180°. Where 53° and 36° were used in their workings students mostly went on to obtain credit for their answer.

Question 30: Working with money

Although 65% of students managed to gain at least one mark on this question, it would have been nice to see a higher proportion of students succeeding. Many did not read the question carefully to find out what they were being asked for. There were, however, some nicely worked out solutions. The main reason for loss of marks was arithmetic errors, however if a student showed sufficient working to demonstrate a complete correct process, then a method mark could be awarded. When problem solving centres should encourage students to include a few simple labels such as "pallets"," Brushes", "cost" and "change".

Question 31: Ratio

Where students knew to share the value by the ratio sum most were able to give the correct number of blue cars. However, this type of ratio question is common on this specification, so it was surprising that many found it challenging, with almost 40% not picking up either mark. Common errors included dividing the total by 2 or 3, rather than by the total number of parts, 5. Arithmetical errors lost a mark for many. Some knew that they needed 2/5 of 155 but did not know how to carry this out. Build up methods were almost never successful.

Question 32: Calculating Fractions

Students managed to add together the two fractions well in Part (a); answers were presented as an improper fraction or mixed number in almost equal proportion. The most common incorrect answer here was $\frac{4}{6}$, where students lacked in the understanding of the processes of adding fractions. Multiplying fractions in Part (b) was also well attempted. Several students attempted to find a common denominator, mixing the processes for adding and multiplying fraction. A disappointingly number of students used the correct method, but multiplied the numerators as 1 x1 = 2, losing them the mark. Least successful of the fraction questions, yet still 50% were able to answer Part (c). Students need practice at dividing by a whole number, especially remembering to write 2 as $\frac{2}{1}$ in the first instance.

Question 33: Mean and Median

Surprisingly few correct answers were seen here. In Part (a) some students confused what they were finding, while others knew they needed to add all the values but then did not divide. Slightly more successful in Part (b); students understood the need to find the middle value, however forgetting that the data needed ordering first. Centres would do well to practice the different process to

find the mean, median and range of data sets, as these are common questions at all levels.

Question 34: Percentages

It was positive to see plenty of correct answers to the percentage questions with over 70% of students gaining marks on the first 3 questions. In Part (a) the main error was seeing students writing their answer as a fraction. Part (b) was very successful. Pleasingly, students showed working to both Parts (c) and (d) of this question, many going on to reach the correct answers. Unfortunately, some then lost the marks for writing % after their answer. Centres need to ensure students understand that if they are finding a percentage, the answer will be a number (not another percentage).

Question 35: Long Division

Long division is now a commonly assessed question, and one where working must be seen to be awarded marks. It is pleasing to see more and more students successfully achieving marks here for quality working with over 70% gaining at least one mark. Those who used long division were generally successful. Those using short division should be advised to leave sufficient space between digits so that remainders can easily be seen and worked with.

Question 36: Algebra

Understandably, as the penultimate question, many students found these questions difficult. A common error in Part (a) was forgetting that b also needed to be multiplied by 3. Other students thought they could add the two values together and seemed unaware of the 'only like terms' can be combined. Fully correct answers were seen 50% of the time for Part (b), still showing a lack of understanding of substitution by many. It was common to see 44 instead of 4x4 or 16 for the first term; students should be reminded that 4a means 4 multiplied by a. Some retained the letters after substituting, leading to 16d –12e +5f. Some substituted correctly but then calculated 16 – 12 + 5 as 16 - (12 + 5). A few stopped at 16 – 12 + 5 as their answer, when a single value was required, however did gain the method mark here.

Question 37: Problem Solving

Many students obtained partial credit for this question by realising it was to do with area, but fully correct answers were not seen very often. 50% of students did not score here; of those who attempted the question, they tended to work out the perimeter rather than area which immediately scored them nothing. Many students went on to work out 2 areas forgetting to calculate the third, with only 20% achieving full marks. 2m x 1.5m appeared to be the most problematic for the students. Problem solving is a useful practical application of all the mathematics that students have been exposed to during their education and Centres should use as many activities as possible to help students apply their mathematical knowledge to everyday situations.

General:

- It was very pleasing to see many more students showing their working on the paper, in pen, and not working out in pencil then erasing their working.
- **Presenting Data -** centres need to be aware that students might be asked to display and present data in a variety of ways and should look at different methods for this; as highlighted in the specification and scheme objectives.
- **Problem Solving –** centres need to encourage students to break down problems; to identify what information they are given, what they are being asked to find and what steps they might need to take.

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