Examiners' Report
Principal Examiner Feedback

October 2021

Pearson Edexcel iPrimary Mathematics
Year 6 Mathematics (JMA11)
Paper 01

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Principal Examiner's Report on paper JMA11

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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: Addition & Subtraction

An extremely well answered question to open Section B of this paper. Over 90% of students gaining the mark for addition, including 'carrying'. Subtraction, including decomposition, proved to be a little more challenging, however still gaining almost 80% success.

Question 22: Fractions, Decimals & Percentages

Over 95% of students were able to achieve one mark, usually by linking 0.75 to 75%, unfortunately only around 50% were able to continue to gain full marks. The most common error was to link 30% to 3.0.

Question 23: Data Handling – Pie Chart & Tally

Many students correctly scored both marks on the tally chart. Of those that didn't, most picked up one mark for completing at least two sections correctly. The most common error was not using a gated '5'. Other errors seen were stating yellow tally represented 8 or simply not completing the tally chart as requested.

Representing the tally chart data on the Pie chart proved to be a very challenging question with just over 25% gaining the full marks available. Many students had no idea how to complete the Pie chart with 43% gaining 0 marks at all.

Blue was often correctly identified correctly as being 1/4 of the Pie chart.

Very often Purple was incorrectly represented by one complete section and Green by 2 sections, this led to Yellow being represented by 4 sections – students were still able to achieve 2 marks if they represented Blue and Red successfully.

Question 24: Ratio

Only half of the students achieved full marks on this question, with around 60% of students gaining at least 1 mark. Students were able to score 1 mark by finding one part as 60. A common error was to divide 180 by 2 rather than 3, giving an answer of 90.

Question 25: Coordinates

Translating point Q proved difficult for almost half of the students in part (a). However, plotting point R in part (b) was much more successful. The most common error was to reverse the coordinates, plotting (-5, -2). Candidates should be encouraged to plot points with a cross, some identified the point just by writing the letter R, without a cross or dot. It is difficult to be sufficiently accurate with this method.

Question 26: Angles

Recognising the right angle, in part (a) was answered well, however the students struggled to work with 'angles in a triangle' and 'angles on a straight line'. Many students did not recognise the relationship with angle b and the 145° degree angle, therefore not realising that they needed to use angles on a straight line equal 180°. This hindered a correct calculation for angle c; however, this third mark could be recovered if students recognised that angle b + angle c = 90°.

Question 27: Long Multiplication

Almost 60% of students scored full marks on this question. It is encouraging to see students are more often solving long multiplication by displaying their working clearly. It is extremely pleasing to see few candidates being awarded no marks due to providing a correct answer without showing working.

Question 28: Algebra

Algebra is still proving a very difficult concept, many students finding these questions difficult.

Expanding the bracket, in Part (a) was only 40% successful; students tended to forget that both terms needed to be multiplied by 5. Other students thought they could add the two values together and seemed unaware that 'only like terms' can be combined.

Solving the equation, in part (b) was much more successful. Fully correct answers were seen almost 60% of the time. Common errors here were to add 6 to 22 rather than subtract, and multiply by 4 rather than divide.

Many students lack an understanding of substitution. It was common to see 35 instead of 3x5 or 15 for the first term; students should be reminded that 3a means 3 multiplied by a. Some retained the letters after substituting, leading to 115a –12b +7c. Some substituted correctly but then calculated 15 – 12 + 7 as 15 - (12 + 7). A few stopped at 15 – 12 + 7 as their answer, when a single value was required, however they did gain the method mark.

Question 29a: Reflective Symmetry

A very well answered question with students working carefully to correctly reflect the shape over the mirror line. It was pleasing to see some students check and correct errors.

Question 29b: Volume

Many correctly calculated the volume of the cuboid, knowing that they needed to multiply the three given values (3cm x 4cm x 6cm). The most common errors seen were to find the sum of the three lengths, sometimes doubling this, and occasionally finding the sum of all twelve edges. A few calculated areas of some or all of the faces.

Question 30: Ordering Decimals

Over half of the students correctly ordered the decimals. Many lost the mark by thinking 0.4 < 0.04 or that 0.44 was the largest number.

Question 31: Fractions

It was good to see that over 50% of students were able to work with improper and mixed number fractions. This is a skill that will be required in mathematics as students progress and centres should ensure that the process of converting between them is understood.

Question 32: Mean and Median

Surprisingly few correct answers were seen here with around 50% correctly working out the median, but only around 40% calculating the mean. 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 33: Division

Long division is now a commonly assessed question, and one where working must be seen to be awarded marks. It was disappointing to see fewer students successfully achieving marks here this session, with over 40% gaining no marks at all. Those who used long division are generally more successful. Those using short division should be advised to leave sufficient space between digits so that remainders can easily be seen and worked with. It was however pleasing to see few candidates being awarded no marks due to providing a correct answer without showing working.

Question 34: Radius & Diameter

A relatively new area to be tested; it was nice to see 70% of students correctly drawing the diameter on the circle. A few drew the radius, achieving no marks but most did not score as they left their circle blank or they drew both the radius and diameter.

Over 50% were also able to correctly measure the length of the radius.

Question 35: Working with Measures

Understandably, as the penultimate question, most students found this difficult. Only 20% were able to correctly convert and subtract 0.4m from 168.4cm to find the height of Melinda's sister, many who converted correctly then added.

To find the height of Melinda's brother, many students knew that they needed to find 75/100 x168.4 but had difficulty in calculating this correctly. It was rare to see 75% converted to ¾ first, which made the calculations much simpler. Long multiplication by 75 was time-consuming, and many made errors in the calculation.

Question 36:

This was a well answered question with 75% of students gaining at least 1 mark. Most understood that they needed to find the cost for each fruit, total these values and compare them to $11. Many made arithmetic errors that stopped them scoring full marks, though these students were able to gain 2 method marks if their process was correct. A few students correctly found the total but did not answer the question by stating 'no' and subsequently lost the accuracy mark.

A few clearly did not realise the quantities needed for each fruit and just added the cost of one Pineapple, one Strawberry and one Orange scoring no marks.

General:

- It was good to see students continuing to show their working on the paper, something which centres need to continue to encourage.
- **Presenting Data -** centres need to be aware that students might be asked to display and present data in a variety of ways and should ensure the different methods highlighted in the specification and scheme objectives are taught.
- **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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