Pearson Edexcel

Examiners' Report
Principal Examiner Feedback

October 2020

Pearson Edexcel International Award in iPrimary In Science (JSC11/01)
Paper 01

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Grade Boundaries

Grade boundaries for all papers can be found on the website at:
https://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html

Autumn 2020
Publications Code JSC11_01_2010_ER

Question 11

(a) This question was well answered, with the majority of students providing a good response, stating it was a substance that does not dissolve. Many gave some additional detail, stating that it is a solid that does not dissolve in a liquid.

(b) Many students correctly stated filtration and gave appropriate detail, stating that the chalk would remain in the filter paper and the water would pass through it. Some students simply stated filtration. Students should be directed to look at the number of marks available for a question and use that to help them understand that more detail was required.

Some students suggested other methods, such as evaporation, which could be used to obtain chalk, but not the water, unless the water was condensed after evaporation. This made it harder for a student to achieve both marks using an alternative method.

Question 12

The majority of students scored at least one mark, knowing that the function of leaves is to manufacture food. The most common error was to confuse the function of the root and the stem.

Question 19

Students were able to provide a large variety of ways of reducing the risk of food poisoning, with many suggestions for long term storage of food demonstrating knowledge beyond the requirements of the specification.

Accepted responses included methods such as canning, smoking or drying, as well as those directly from the specification of hand washing, surface cleaning, and refrigeration. Many students scored at least one mark.

Question 20

The majority of students scored at least one mark here, with 'dissolving sugar in tea' incorrectly identified as irreversible being the most common error for students.

Question 21

This was a more challenging question, particularly for P1 and P2 students. Students needed to recognise that 11:00am was very close to midday, so the shadow would be long by 11:00am, and that 7:00pm was a long time after midday, so the shadow would have lengthened considerably.

Many students did not recall that the length of a shadow is smallest at midday, and either had the shadow getting longer throughout the day or the converse.

Question 22

(a) While many students had an understanding of this, many tried to describe the effects in non-scientific terminology, e.g. '(the helmet) cuts through the wind' rather than saying it reduces air resistance. Many students restated the 'special shape of the helmet and crouching low' rather than recognising that this gave a streamlined shape.

Most students correctly identified more streamlined or aerodynamic (there were a few that put less). A small number of students referred to the safety elements of the helmet or talked about friction with the road impacting speed.

(b) The majority of students were able to identify the correct statement. A small number of students ticked more than one box.

Question 27

This proved a challenging question for all levels, as students may not have noted the keyword of 'place' in the question. Students were required to identify **where** the friction may be useful or not useful. The majority of students explained how friction may be useful, e.g. 'the lady will not slip over', without saying that friction is useful between the shoe and the ground, or 'on the sole of the shoe'. For 'not useful' some students made statements such as 'it is harder for the lady to pull the sledge' without stating where that problem occurred.

A small number of students referred to the picture and correctly identified the place but confused useful and not useful friction.

A small number of students did not link the question to the picture, and identified other ways or places that friction can be useful or not useful.

Question 28

(a) The majority of students who achieved a grade knew this was the ovary, with a few stating ovule, carpel or seeds.

(b) This is an aspect of the specification which students find challenging. A common error was seed and ovule being confused.

P1 students found this a difficult question, and may have stated that pollination occurs there rather than fertilisation.

P2 students were generally able to achieve one mark, often stating that ovules were present there, that seeds were made, that fertilisation occurred, or sometimes, that it turned into the fruit. Answers were often not clear, e.g. 'it forms seeds called ovules', demonstrating these students have not yet acquired a full understanding of the processes occurring in the ovary.

P3 students demonstrated a better understanding, often scoring both marks here, with statements such as 'the ovules turn into the seeds after fertilisation and the ovule becomes the fruit'.

Question 29

(a) The majority of students who achieved a grade answered this correctly, stating a direction to move either the torch or the bat puppet, or occasionally the screen. A few students referred to a larger light source or brighter light.

(b) The majority of students selected 'opaque' as the correct answer. 'Transparent' was the most common incorrect answer, so some students have not yet fully understood the difference in these properties.

Question 30

P2 and P3 students often recognized that either the plants in Pot 7, or sand and light, were unhealthy or had pale leaves and yellow stems, or that the plants in Pot 5, or soil and light, were healthier with large green leaves and green stems.

A few gave this reasoning, but then gave the wrong conclusion, usually because they assumed the plant being discussed in the student's conclusion was the moist soil and light rather than the moist sand and light.

A few students compared heights alone, indicating that plants in the dark grew better, not understanding they were growing rapidly in order to reach light.

Question 31

Students who scored marks often answered that the anthers were high or outside of the flower, so the pollen could be carried away by the wind. A few answered that the anthers were large and made pollen, some of which reached the stigma. Several students made reference to the flower or petals being open to allow pollination, or that the flowers were lightweight or shaped to allow the **flower** to be blown by the wind, so could not be awarded the marks.

As an 'explain' question students needed to expand on one feature of the flower that demonstrated it was wind pollinated. Some students gave two or three ways it was adapted to wind pollination, but did not expand on any of them, so could only achieve one mark.

A few students only discussed insect pollination, so had not identified the keyword of 'wind' pollination and some confused seed and seed dispersal with methods of pollen distribution.

Question 32

(a) Many students had difficulty in identifying a measuring cylinder for measuring the volume of a liquid. It is appreciated that many primary school centres may have limited scientific equipment, but perhaps matching games could be played, where students identify and state the use for different pieces of equipment from photographs or drawings of the equipment.

(b) The majority of students correctly identified the same volume (150 cm^3) of water, or to leave the dishes in the same place, or the same temperature of either the water or environment, or same amount of time (4 days). Many students stated 'amount' of water rather than volume, as such, students should be encouraged to use scientific terminology when discussing these points.

A few students referenced the correct answer but did not indicate it needed to be the same or confused the shape or size of container with the same volume.

(c) The majority of students could read the scale to the required degree of accuracy. A few students gave readings that were well above the scale given e.g. 22, while some were not sure where they should be reading to, giving an answer of 11.

(d) The majority of P2 and P3 students and many P1 students achieved this mark, usually with a neatly drawn rectangle to 70 cm^3 of the same width as the other bars.

Question 33

(a) Students were required to include the units on their axis label, which many forgot to add.

(b)(i) The majority of students correctly identified the odd result. Those that didn't tended to choose the adjacent points or the ones at either end of the results.

(b)(ii) The majority of students drew the line correctly. Those that didn't either did not extend the graph to the first point on the y-axis or deviated from the line graph to include the odd result.

(c)(i) The majority of students recognized the weight was a causal factor and that the spring lengthened as a result. Some students got one part but not the other,

mainly if they stated that the spring expanded or stretched or if they implied that the spring lengthening resulted in the weight increasing.

(c)(ii) The majority of students at all levels correctly answered 21, with some students stating within the 20.5-21.5 range. A common error was to state 20.1, indicating they are not yet secure with reading from a scale.

Question 34

(a) The majority of students selected an appropriate piece of measuring equipment, i.e. a ruler or stopwatch. The most common error was to state parachute, strings or plasticine, or state 'the strings must be the same length'.

(b) The majority of students recognised the height needed to remain the same to make it a fair test, with fewer recognising the weight of the plasticine as the second control variable. Many students selected size of the parachute as the most common error. This implies the students may not have carefully read the question. Students could be encouraged to underline key parts of a question to help them understand what is occurring in the investigation.

(c) The majority recognised that the investigation needed to be repeated, although some then stated 'to make it a fair test' or 'for accuracy'. Students need to develop a clear understanding of the meanings of these different terms, which many do find difficult, and apply them in the right context, without adding anything further. A few students suggested changing either the weight or size of plasticine, parachute size or the height it was dropped from, or repeated the experiment changing one of these factors.

Paper Summary

- Students were very well-prepared by their centres for the exam and worked hard to demonstrate their scientific knowledge and achieve their best results. Most students attempted all the questions, even when they were unsure of the answers.

- Students generally showed a good knowledge and understanding of the underlying scientific ideas and principles they have been taught, with some students taking these ideas further. Many able students could show the depth of their knowledge by expanding on their answers using appropriate scientific terminology. Other students would benefit by developing their understanding of the vocabulary used in science, so they understand the question as well as being able to use this terminology in their answers.

- Some students lost marks as they did not read the question carefully, e.g. ticking the incorrect number of boxes, or missing a keyword, such as 'place' in Question 27. Encouraging students to underline keywords as they read a

question can be useful to help focus on what is required to correctly answer the question.

- In section B students were able to make a good attempt at the questions, showing a development of their practical skills and understanding how to conduct a scientific investigation.

- While primary centres may not have wide access to scientific equipment, students should become familiar with the requirements of the specification through photos or images, be able to name them, state their function, and, if they are measuring equipment, state the units of measurement. This familiarity may enable students to select appropriate equipment more easily.

- Students need to continue to develop their understanding of fair tests, accuracy and reliability of investigations, through application of these concepts to their own investigations.