



Examiner's Report Principal Examiner Feedback

Summer 2019

PLSC Science

International Achievement Test – iPrimary Year
6 (JSC11/01)

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General comments

This was the first examination for the new iPrimary Year 6 Achievement Test in science, which replaces the Year 6 Achievement Test qualification. This test includes material based on some topics candidates may have studied in Years 3 – 6 of the Science specification and built upon over the course of their science education.

It is clearly evident that centres prepared candidates carefully and thoroughly for this exam, and candidates worked hard to demonstrate their level of scientific achievement. Many candidates were able to demonstrate the breadth and depth of their understanding through their careful answering of the more demanding questions. Most candidates also demonstrated a sound knowledge of scientific vocabulary required at this level, using it to good effect in their answers. Very few questions were left unanswered, showing that students worked hard to maintain high standards of achievement.

Candidates should be encouraged to take the time to read the questions carefully, to ensure they complete what is requested of them, highlighting key words to help locate information in the introduction to the question that may help them to answer the question, and ensure they give sufficient detail in their answers.

Most candidates were able to effectively answer multiple-choice, short answer questions and those requiring a longer answer. Answers were generally completed in black ink and the majority of candidates kept their answers within the answer spaces provided. Joining the boxes questions, ray diagrams and bar charts were mainly completed using a ruler to aid accuracy and is to be encouraged for all candidates.

To help candidates answer well in Section B questions, candidates need to develop a clear understanding of the differences between fair testing, accuracy and reliability in investigation work.

Candidates achieving P3 demonstrated their ability across the specification, as well as in Section B. They maintained their standards through ensuring they provided detailed answers for any questions of 2 or more marks. Those borderline candidates aspiring to P3 could focus on ensuring their understanding of fair testing, reliability and accuracy in investigations.

Comments on individual questions

Section A

Questions 1 – 10

Most candidates who achieved an award scored 5 or 6 in the first set of multiple-choice questions, with question 4, 7, 8 and 9 being the most challenging for candidates, and questions 5 and 6 being well answered.

Question 11

The majority of candidates who achieved an award were able to correctly order the statements.

Questions 12

Most candidates who received an award were able to correctly identify pollination, with many identifying all three correctly. Seed dispersal was the hardest for candidates to identify. A small number of candidates ignored the rubric and carefully drew lines to all the boxes on the right, instead of three as the instructions stated.

Questions 13-18

In the second set of six multiple-choice questions, most candidates who achieved an award correctly answered at least 2 or 3. The most challenging question in this section for candidates was question 15, with questions 13 and 14 being well answered.

Question 19

This question was difficult for P1 candidates, with some scoring one mark for the arrows being shown correctly, but often their lines were drawn from the sun to the tiger and the gazelle, with no link between the animals at all, or multiple lines were drawn radiating out in many different directions. Many P3 candidates were able to achieve both marks, drawing lines with a ruler and ensuring their line touched the sun, gazelle and the tiger's eye.

Question 20 (a)

Most candidates were able to score at least 1 mark here, with the most common error being 'ventilation of the lungs is called respiration' being indicated as true, or 'the blood picks up oxygen in the lungs' indicated as false.

Question 20 (b)

The majority of candidates achieving an award were able to score at least one mark here for 'blood vessels'. Candidates were less likely to be able to identify that the lungs are found in the thorax.

Question 20 (c)

Candidates found this question demanding, with around half of P3 candidates able to answer. Many candidates restated oxygen, or food. Candidates should develop an

understanding that food is broken down in our body in order for it to be transported around the body, to our cells, as nutrients.

Question 21

The majority of candidates could correctly identify that her speed would reduce, with most P2 and P3 candidates able to give the reason, increased friction. A small number of candidates mixed up friction and gravity.

Questions 22 – 26

In the third set of six multiple-choice questions, most candidates who achieved an award correctly answered at least 1 or 2. Questions 22 and 26 were more demanding of candidates, with many answering 23 and 25 well.

Question 27 (a)

The majority of P2 and P3 candidates answered correctly, with some P1 candidates also able to correctly identify P. Incorrect answers were split evenly between M and N, with some candidates giving an answer such as sand, flour or filter paper.

Question 27 (b)

The majority of candidates answered correctly here. The most common error was for around half of P1 candidates who would state 'stir it' rather than 'stir it more' or 'stir it faster'.

Question 28 (a)

Around half of the P1 and P2 candidates would state sieving or use a sieve, with many P2 and most P3 candidates able to provide the additional detail of the sieve holding the rice while the flour passed through it.

Question 28 (b)

Most candidates were able to achieve one mark at least, with the most common errors being sugar added to tea identified as irreversible or making toast as reversible.

Question 29(a)

The majority of candidates could give at least one way of increasing the speed of the motor. Several candidates focused on the switch and suggested removing the switch or adding another switch. Some candidates who attempted to say use a shorter wire or a thicker wire did not make it comparative, which it needed to be in order to achieve the mark.

Question 29(b)

This question required a good understanding of electrical circuits in order to gain both marks. Many P1 and P2 candidates were able to make a statement such as 'it turns the circuit on and off' but did not elaborate on how a switch achieved this. The top end of P3 and a few P2 candidates were able to make this link.

Section B

In section B candidates were able to demonstrate some of their knowledge and skills they have developed in undertaking practical scientific studies, to apply some of the scientific principles of variables, fair testing, accuracy and reliability to new situations, or to practical's they may have undertaken in the classroom.

Question 30

In part a) many candidates could name a stirrer, but few except P3 candidates mentioned a measuring cylinder or scales. Several candidates named the solids as being part of the equipment.

For part b) many were able to give an accurate answer, with the most common error being 10.7°C.

In part c) in general P3 candidates were most likely to be able to answer this was to ensure a fair test was carried out.

In part d) some P3 candidates could identify this correctly.

Question 31

In part a) the majority of candidates who achieved an award completed the table correctly.

In part b i) many candidates could suggest a suitable control variable in order to make a fair test.

In part b ii) the majority of P3 and many P2 level candidates could give a suitable effect of feeding the birds as a simple conclusion.

Question 32

Part a) was challenging for most candidates, with some P3 candidates able to correctly identify this was to be able to calculate an average or to ensure the test was reliable.

When given a set of results in part b) most P2 and P3 candidates, and round half of the P1 candidates, could correctly identify an anomalous result.

In drawing the bar chart in part c) most P1 candidates achieved 1 or 2 marks, usually for labelling the x-axis and usually the y-axis as well, or occasionally correctly plotting the bars for elephant (30), human (60) and cat (150). At P2 level, candidates were usually achieving 2 or 3 marks, usually for both axes and correct plotting of the bars for elephant, human and cat. By P3 level they generally achieved 3 or 4 marks, occasionally giving an incorrect scale for the y-axis, or making an error in plotting 205 as 210, or occasionally making a transcription error and plotting it at 250. Some candidates also found difficulty in plotting the bar for horse at 44.

In part d) many P2 and P3 candidates were able to give a suitable prediction.

Summary section

Based on their performance on this paper, students should:

- aim to undertake a variety of practical work on a regular basis, using and naming simple equipment, and learning to apply the principles of control variables, fair testing and recognising safety precautions
- develop their skills in being able to accurately read the scale from a variety of pieces of equipment
- develop their skills in drawing simple ray diagrams, understanding that light comes from the light source, bounces off the object being observed, into the eye
- be able to understand the difference between breathing (ventilation of the lungs) and respiration (which happens in a cell)
- develop understanding of the terms 'solute', 'solvent' and 'solution'.
- P1 standard candidates could be encouraged to think about the additional detail, sometimes requiring adjectives to help, that is required to answer a question fully

