

Principal examiner reports for teachers

Principal examiner reports for teachers summarise what candidates did well and what candidates needed to improve for this examination series only.

This report is to be used in conjunction with the question paper and mark scheme.

For guidance on teaching and learning we provide resources for many of our syllabuses.

Resource	Where to find it
Grade descriptions – Grade descriptions describe the level of performance typically demonstrated by candidates achieving the different grades awarded for a qualification.	School support hub Select: Subject > Resource finder > Syllabus and specimen materials
Schemes of work – Schemes of work are designed to support you in your teaching and lesson planning.	School support hub Select: Subject > Resource finder > Teaching and learning
Lesson planning – Guidance on how to plan a lesson.	Lesson planning
Resource plus – There may be additional resources such as teaching packs containing lesson plans, resources and worksheets and videos for aspects of your syllabus.	School support hub Select: Subject > Resource finder > Teaching and learning
Teaching tools	Teaching Tools
Exemplar candidate responses	School support hub Select: Subject > Resource finder > Teaching and learning
Learner guide – A guide for students to help them understand what the course involves.	School support hub Select: Subject > Resource finder > Teaching and learning
Community forums – Do you have a question or something to share? Our online forums are great way to keep up to date with your subject and the global Cambridge community.	Community forum on the school support hub
Access to scripts for this series.	Access to scripts service
Results analysis is available for some syllabuses.	Results analysis
Test maker is available for some subjects.	Test maker

Other services from Cambridge International Education

- [Digital mocks service](#)
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COMBINED SCIENCE

Paper 5129/12 Multiple choice
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Key messages

Candidates performed well on **Questions 1, 2, 4, 9, 10, 11, 25, 30, 33, 34, 36, 37.**

Candidates performed less well on **Questions 5, 6, 8, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 24, 26, 27, 28, 31, 35, 38, 39, 40.**

Candidates are advised to read the whole question before answering the question. The responses to the Chemistry section of the syllabus were less well understood than those in the Biology and Physics sections.

Comments on specific questions

Question 3

- All options were popular.
- The balanced chemical equation for photosynthesis was not well known by many of the candidates.

Question 4

- Options **C** was the most common incorrect answer.
- A majority of the candidates knew that the stomata are involved in gaseous exchange in a leaf. The idea that the mesophyll cells are involved in gas exchange was less well known.

Question 5

- Option **C** was the most common incorrect answer.
- A majority of the candidates identified the correct test result for a protein. Some of these candidates chose option **C** indicating that the correct test result for glucose was less well known

Question 6

- All options were popular.
- Absorption processes are not well known by many of the candidates.

Question 7

- Options **B** and **D** were common incorrect answers.
- There was a misconception that the function of the alveoli is respiration rather than gas exchange during the process of respiration.

Question 8

- All options were popular.
- Many candidates were unable to interpret the information presented in the Venn diagram.

Question 10

- Options **C** and **D** were the common incorrect answers.

- The effects of excessive consumption of alcohol and tobacco smoke were well known by a majority of the candidates.

Question 11

- Option **C** was the most common incorrect answer.
- The idea that the sensory neurone is the cell that transmits a message to the central nervous system is known by many of the candidates.

Question 12

- All options were popular.
- The order of the stages involved in the formation of a baby are not well understood many of the candidates.

Question 13

- Option **D** was the most common incorrect answer.
- A majority of the candidates recognised that the combustion of fossil fuels increases the concentration of atmospheric carbon dioxide. The fact that an increase in human population increases the concentration of carbon dioxide was less well understood.

Question 14

- Option **D** was the most common incorrect answer.
- A majority of the candidates recognised that particles lose energy during condensation. A significant number of these candidates thought that energy is lost by the particles during melting and chose option **D**.

Question 15

- Option **C** was the most common incorrect answer.
- A majority of the candidates knew that the solute in the mixture is potassium chloride. Many of these candidates described the mixture as the solvent rather than a solution and chose option **C**.

Question 16

- Options **D** was the most common incorrect answer.
- The idea that atoms combine so that they gain an inert gas electronic configuration by sharing electrons is not understood by many of the candidates.

Question 17

- All options were popular.
- Candidates should know that the charges in an ionic compound are balanced.

Question 18

- All options were popular.
- Many candidates did not understand how to determine the stoichiometry of a chemical equation.

Question 19

- All options were popular.
- Ideas about the energy changes during a chemical process are not well understood by a majority of the candidates.

Question 20

- All options were popular.

- The differences between physical and chemical changes are not well understood by many of the candidates.

Question 21

- Options **C** and **D** were the most popular incorrect answers.
- Most candidates did not recognise that ammonia is given off when substance X reacts with ammonium sulfate and therefore substance X is a base, calcium hydroxide.

Question 22

- Option **C** was the most common incorrect answer.
- A majority of the candidates knew that the particle that causes a solution to be alkaline is the hydroxide ion. Many of these candidates thought that the ion is positively charged and chose option **C**.

Question 23

- Option **B** was the most common incorrect answer.
- There is a misconception amongst the candidates that all elements in Group IV of the Periodic Table are metals and therefore conduct electricity. Silicon is in Group IV and does not conduct electricity.

Question 24

- All options were popular.
- The trends shown by the elements in Group VII of the periodic Table are not well known by many of the candidates.

Question 26

- Option **A** was the most common incorrect answer.
- A majority of the candidates recognised that methane can increase global warming and is produced by decomposition of vegetation. Some of these candidates thought that carbon dioxide is produced by the incomplete combustion of fossil fuels and chose option **A**.

Question 27

- Option **B** was the most common incorrect answer.
- A majority of the candidates deduced that X contains two carbon atoms. Many of these candidates deduced that X contains four hydrogen atoms and chose option **B**.

Question 28

- Option **D** was the most common incorrect answer.
- Many of the candidates did not recognise that the graph shown is a distance-time graph and answered the question as though it is a speed-time graph.

Question 29

- Option **B** was the most common incorrect answer.
- A majority of the candidates recognised that the density is calculated from values of mass and volume. Some of the candidates used the inverted equation and chose option **B**.

Question 31

- Option **D** was the most common incorrect.
- Many of the candidates did not take the original length of the spring in calculating their answer.

Question 32

- Option **B** was the most common incorrect answer.
- Many candidates knew that power is determined using the energy transferred and the time taken.

Question 35

- All options were popular.
- Many candidates could not identify the two angles of refraction.

Question 36

- Option **C** was the most common incorrect answer.
- A majority of the candidates recognised P as X-rays. Many of these candidates identified Q and R the wrong way round and chose option **C**.

Question 38

- Options **B and C** were the most common incorrect answers.
- Some of the candidates did not convert the time into seconds for their calculation and chose option **B**.

Question 39

- Option **C** was the most common incorrect answer.
- Many candidates knew that the reading on the voltmeter does not change. The effect on the ammeter reading was less well understood.

Question 40

- Options **B and C** were the most common incorrect answers.
- The definition of an isotope is not well known by the candidates.

COMBINED SCIENCE

Paper 5129/22 Theory

Key messages

What candidates did well

- Demonstrated knowledge and understanding across Biology, Chemistry and Physics by recalling a wide range of scientific facts and terminology.
- Interpreted information presented in diagrams, tables and graphs and used observations from these to answer questions.
- Substituted values into given equations and completed straightforward calculations in familiar contexts.
- Used information provided in the question paper to support explanations and justify conclusions.
- Completed structured questions successfully by identifying relevant scientific ideas and selecting appropriate responses.

What candidates needed to improve

- Develop explanations by linking scientific facts, observations and principles rather than identifying individual scientific terms or processes.
- Apply scientific knowledge in unfamiliar contexts, including rearranging equations, converting units and recognising proportional relationships.
- Use precise scientific terminology to distinguish between related structures, processes and scientific quantities.
- Develop responses by including sufficient scientific detail to explain observations and justify conclusions.
- Recognise how biological, chemical and physical processes are linked rather than recalling isolated scientific facts.

Comments on specific questions

Question 1

Comprehensive responses

- Drew lines between the boxes to make the correct sentences about the heart.

Limited responses

- Some responses focused on associating thicker walls with the atria rather than the ventricles.
- Some responses focused on not selecting 'pumps blood to the lungs'.

Question 2

(a) (i)(ii) Comprehensive responses

- Drew a diagonal line on the d-t graph and a horizontal line on the s-t graph.

Limited responses

- Some responses showed: acceleration followed by constant speed on the s-t graph; stationary on the d-t graph; constant acceleration on the s-t graph.

(b) Comprehensive responses

- Selected suitable values for mass and acceleration and demonstrated that these produced a force of 2.8 N.

Limited responses

- Most candidates recognised the need to choose their own values for mass and acceleration.
- Some responses did not substitute the selected values appropriately into the equation.
- Many candidates gave the correct unit of mass and needed to use the correct unit for acceleration.

Question 3

(a) Comprehensive responses

- Most candidates identified evaporate as the correct process in distillation.

Limited responses

- Melt was the most common incorrect answer.

(b) Limited responses

- Many candidates identified filtration and chlorination and needed to recognise that sedimentation and activated carbon are also stages of purification.

Question 4

Comprehensive responses

- Some candidates identified the chloroplast, in the photomicrograph and described its function.

Limited responses

- Many candidates needed to distinguish between a cell structure, an organ and a chemical structure. For example, naming a leaf instead of a chloroplast or naming chlorophyll instead of a structure.
- Some responses focused on describing chloroplasts as absorbing water or referring to gas exchange rather than photosynthesis.

Question 5

(a) Comprehensive responses

- A few candidates identified air resistance (or friction), weight and tension.

Limited responses

- Many candidates only identified either weight or air resistance and needed to recognise that tension also acts on the pendulum bob.
- A common misconception was to identify weight as gravity rather than the force due to gravity acting on the bob.
- Many candidates needed to recognise situations where tension forces are acting.

(b) Limited responses

- Candidates recognised that speed of the bob changes during its motion. Many responses needed to explain that the size of force A changes as the speed of the bob changes.

Question 6

(a) (i) Comprehensive responses

- Most candidates identified that neutralising acidic soil increases the pH from an acidic pH 5 to pH 7.

(ii) Limited responses

- Candidates needed to recall that solutions are acidic because they contain hydrogen ions (H^+).

(b) Comprehensive responses

- Most responses completed the word equation to show that calcium nitrate is produced in the reaction between calcium oxide and nitric acid.

Limited responses

- Many candidates needed to recognise that water is also produced in the reaction.
- Some responses focused on identifying oxygen as a product.

- Other responses referred to substances such as nitric oxide, calcium acid or calcium hydroxide.

(c) Comprehensive responses

- A few candidates determined the mass ratio of calcium to oxygen ($40/16 = 2.5$). They applied this ratio to determine the required mass of oxygen for 16 g of calcium.

Limited responses

- Some responses applied an incorrect ratio, producing 12.8 g.

(d) Comprehensive responses

- Most candidates identified the correct symbol for strontium.
- A few candidates recognised that strontium forms an oxide with the same formula as calcium oxide because both elements are in Group 2.

Limited responses

- Some responses described electronic structures or ionic bonding rather than suggesting the formula of the oxide.
- Some responses identified S (sulfur) instead of Sr (strontium).
- Many candidates attempted to write a symbol equation rather than suggesting the formula of the compound.

Question 7

(a) (i) Comprehensive responses

- Most candidates interpreted the bar chart correctly.

(ii) Comprehensive responses

- Most candidates calculated the combined percentage correctly.

(iii) Comprehensive responses

- Most candidates identified another pollutant of marine ecosystems.

Limited responses

- Some responses referred to water pollution rather than naming a specific pollutant.

(b) Comprehensive responses

- Most candidates described the trends shown in the histogram.

Limited responses

- Some responses only recognised one trend shown in the histogram.
- Many responses needed to use the scale of the histogram to identify a correct mass of plastic and its corresponding year.

Question 8

(a) Comprehensive responses

- Many candidates substituted the given values into the equation $k = F/x$ correctly to calculate the weight of the block.

Limited responses

- Few candidates recognised the need to convert the extension from centimetres to metres before completing the calculation.

(b) (i) Comprehensive responses

- Most candidates selected the correct words to describe the changes to the energy stores in the block and the spring as the block moves upwards.

Limited responses

- Some responses included identifying the chemical energy store instead of the gravitational energy.

- Some responses indicated that the kinetic energy store of the block increased rather than recognising the block decelerates as it moves upwards.

(ii) Limited responses

- Many candidates needed to recognise that work done against the resistive force acting on the spring transfers energy to the thermal energy store.

Question 9

(a) (i) Limited responses

- Many candidates needed to recognise that tin oxide loses oxygen during the reaction.
- A common misconception is that tin loses oxygen rather than tin oxide.
- Common insufficient responses included identifying carbon dioxide as a product, that the equation is balanced, that tin oxide is oxidised or that carbon is more reactive than tin.

(ii) Comprehensive responses

- Some candidates recognised that increased concentrations of carbon dioxide in the atmosphere contribute to global warming and climate change.

Limited responses

- A common misconception is that increased CO₂ in the atmosphere reduces the amount of oxygen in the atmosphere.
- A common insufficient response identifies CO₂ as a greenhouse gas without describing an adverse effect.
- Other responses referred to CO₂ as poisonous, aerobic respiration or pollution.

(b) (i) Comprehensive responses

- A few candidates recognised that the location of most metals in the Periodic Table is towards the left-hand side and centre.

Limited responses

- Many responses referred only to Groups I, II or III.

(ii) Comprehensive responses

- Most candidates identified a general property of metals.

Limited responses

- Some candidates gave the name of a metal, for example, gallium and sodium, rather than describing a general property.

Question 10

(a) Comprehensive responses

- Most candidates described at least one function of one of the labelled structures in the female reproductive system.
- Most responses described the function of the ovary (structure Y).
- Many responses described the function of the oviduct (structure X).

Limited responses

- Few candidates described the function of the uterus (structure Z).
- Some candidates identified structure Z as the location of sperm deposition or where fertilisation occurs.

(b) Comprehensive responses

- Most candidates identified a location in the vagina, usually close to the cervix, to show where sperm are deposited during sexual intercourse.

Limited responses

- Some responses focused on labelling the cervical canal or the uterus as the location of sperm deposition.

(c) Comprehensive responses

- Most candidates identified at least one method of reducing the spread of HIV infection.

Limited responses

- A common misconception was that a vaccination is available to prevent the spread of HIV.
- Other responses referred to avoiding crowds or avoiding physical contact with infected individuals.

Question 11

(a) Comprehensive responses

- A few responses identified convection as the process by which heated water rises from the bottom of the tank.

Limited responses

- Candidates needed to recognise that the heated water rises because it is less dense.
- A common misconception was that individual water molecules become less dense.
- Other responses referred to the boiling or condensing rather than convection.
- Some responses explained that the water rises because the electric heater is at the bottom of the tank. This explains why the water is heated rather than why it rises.

(b) Comprehensive responses

- Many candidates calculated the energy used in kilowatt-hours before determining the cost of heating the water.

Limited responses

- Some responses calculated the energy used correctly and needed to multiply the number of kilowatt-hours by the cost per kilowatt-hour to determine the total cost.

(c) Limited responses

- Many candidates needed to recognise that insulation reduces thermal energy transfer to the surroundings, reducing the energy required and the cost of heating the water.

Question 12

(a) Comprehensive responses

- Most candidates linked at least one gas with the correct test for that gas.

Limited responses

- Some responses mentioned that ammonia bleaches damp litmus paper rather than turning damp red litmus blue.

(b) Limited responses

- Many candidates needed to recognise that oxygen consists of simple molecules.
- Many candidates needed to relate the gaseous state of oxygen at room temperature and pressure to the weak forces between oxygen molecules.

(c) Comprehensive responses

- Many candidates recognised that the volume of a gas will increase if it is heated at a constant pressure.

Limited responses

- Some responses suggested that the volume decreases when the gas is heated.

Question 13

Comprehensive responses

- Many candidates named at least one of the processes associated with the digestive system.
- Most responses linked the action of enzymes to digestion.
- Many candidates identified ingestion as the process by which food is taken into the mouth.
- Some candidates recognised that absorption is the movement of digested molecules into the blood.

Limited responses

- Few candidates recognised that the process of chewing is mechanical digestion.
- Candidates needed to recognise that assimilation is use of absorbed nutrient molecules by the cells.

Question 14

Comprehensive responses

- Some candidates recognised at least one correct wave feature to complete one of the sentences about waves.
- Most responses identified the distance between consecutive peaks is the wavelength.
- Some responses recognised that the distance above the mean position is the amplitude.

Limited responses

- Some responses confused amplitude, wavelength and frequency when identifying the wave features.
- Few candidates recognised that amplitude is the maximum displacement from the mean position.
- Few candidates recognised that frequency is the number of waves passing a point each second.
- Other responses referred to such terms as speed, energy, oscillation, crest, trough or longitudinal rather than the wave features required.

Question 15

(a) (i) Comprehensive responses

- Most candidates identified an appropriate temperature for the melting point of potassium.

(ii) Limited responses

- Few candidates recognised from the data table that rubidium would be solid at 10 °C.
- Some responses stated a different temperature such as '55'.
- Other responses referred to properties such non-reactive or having a low melting point rather than the physical state at 10 °C.

(b) Limited responses

- Candidates balanced the equation correctly and needed to include the appropriate state symbols.
- Candidates used capital letters rather than the scientific convention for state symbols.

(c) Limited responses

- Candidates identified one error in the representation of the sodium ion.
- These responses most often recognised that the ion should have a positive charge rather than a negative charge.
- Some candidates recognised that the outer electron shell should contain 8 electrons rather than 7.
- A common misconception was that the sodium ion should have 3 electron shells.

Question 16

(a) Comprehensive responses

- Most candidates recognised that water is absorbed by root hair cells.

(b) Comprehensive responses

- Many candidates recognised that xylem transports water and mineral ions.

(c) Comprehensive responses

- Most candidates recognised that the movement of sucrose in the phloem is called translocation.

(d) Comprehensive responses

- Many candidates recognised that transpiration is the movement of water vapour from the leaves.

Limited responses

- A common misconception was that oxygen is lost by transpiration.

Question 17

Limited responses

- Many candidates needed to recognise that electrostatic charging involves the movement of electrons.
- Few candidates related the positive charge of the insecticide droplets to loss of electrons.
- Some candidates referred to repulsion to explain why droplets of the mist spread out.

COMBINED SCIENCE

Paper 5129/32 Experimental Skills and Investigations

Key messages

What candidates did well

- Identified pieces of apparatus from diagrams.
- Were able to identify errors and problems associated with the assembly of apparatus and to suggest how such errors could be rectified.

What candidates needed to improve

- Identification of apparatus from diagrams.
- Use of linear scales on graphs and labelling of axes.
- Reading from scales on digital pieces of apparatus.

Comments on specific questions

Question 1

(a) (i) Comprehensive responses

- Wrote the correct values of 25 for celery and 30 for potato in the correct columns.

Limited responses

- Wrote different values, regularly 125 and 130.

(ii) Comprehensive responses

- Wrote the correct values of 5 for celery and 6 for potato in the correct columns.

Limited responses

- Wrote different values, regularly 25 and 30.

(iii) Comprehensive responses

- Wrote the correct unit of cm^3 .

Limited responses

- Wrote cm^2 rather than cm^3 or did not write an answer.

(iv) Comprehensive responses

- Correctly identified the measuring cylinder.

Limited responses

- Wrote the name of a different piece of equipment, usually 'beaker' or wrote 'cylinder' without qualifying the type of cylinder.

(v) Comprehensive responses

- Understood that the temperature could be kept constant using a water bath, some described setting up a water bath.

Limited responses

- Wrote that the temperature had to be kept the same and did not write how the temperature could be kept constant.

(vi) Comprehensive responses

- Understood that more than one reading should be taken and that this would enable anomalous data to be removed and a mean to be calculated.

Limited responses

- Wrote about the different ways that values could be kept constant such as 'use the same mass of catalase each time', which was a repeat of the stem from **(vi)**.

(b) Comprehensive responses

- Were able to name the correct chemical and write the correct colour change for the test for protein.

Limited responses

- Named a different chemical and wrote the wrong colour change, often the test for starch.

(c) (i) Comprehensive responses

- Wrote how to use the scalpel to prevent damage, usually to cut away from the body.

Limited responses

- Usually suggested that wearing safety gloves would prevent damage.

(ii) Comprehensive responses

- Measured and recorded the correct value.

Limited responses

- Recorded a different value of the length of the line, usually 9 mm, as the candidate did not complete the conversion from cm to mm.

(ii) Comprehensive responses

- Used the magnification equation to calculate the correct value.

Limited responses

- Did not follow the instruction to record the value to one decimal place.

Question 2

(a) (i) Comprehensive responses

- Were able to identify the apparatus from the diagram shown.

Limited responses

- Did not identify the apparatus, often leaving the answer space empty or suggesting that the apparatus was a delivery tube.

(ii) Comprehensive responses

- Wrote that the water would turn to steam so would need to be cooled to convert back to water.

Limited responses

- Described how water vapour moved through the apparatus without naming the apparatus correctly or stated that water moved through the outside of the condenser, again without naming the condenser.

(iii) Comprehensive responses

- Appreciated that there was no bung present in the apparatus and were able to describe the effect of this.

Limited responses

- Thought that the thermometer was in the wrong position so wrote answers such as 'The thermometer is too high and is not touching the water, so it needs to be moved down to touch the water'.

(iv) Comprehensive responses

- Many of the candidates were able to record both the initial and final temperatures.

Limited responses

- Recorded the correct initial value and had not appreciated the resolution on the scale for the final temperature and either rounded up or rounded down the value from the thermometer reading.

(v) Comprehensive responses

- Candidates realised that the final temperature on the thermometer would be the boiling temperature of the liquid.

Limited responses

- Many of the candidates had not appreciated that the final temperature of the liquid would be the boiling point and many different values were written here. Some of the more common incorrect answers were either 100 °C or the difference in the temperature between their initial and final temperatures.

(b)(i) Comprehensive responses

- Candidates were able to draw two dots in line and above the spot of ink as they had appreciated that the two different compounds had different solubilities in the solvent.

Limited responses

- Many candidates did not appreciate the importance of the difference in the solubilities of the two different compounds and drew only one dot on the chromatogram.

(ii) Comprehensive responses

- Candidates knew that the lid would prevent the solvent from evaporating and discussed the importance of this.

Limited responses

- Candidates wrote about the lid preventing contamination of the chromatogram by bacteria or other organisms such as flies entering the apparatus and spoiling the results.

(iii) Comprehensive responses

- Some wrote about adding the three different spots on the baseline and comparing. Some candidates were able to write about the three different dyes being placed on the base line and did not go on to explain how the distance that the dots moved could be used to indicate which compounds were present in the ink.

Limited responses

- Many candidates thought that repeating the experiment would be sufficient and had not appreciated the command words from the question set.

Question 3

(a) Comprehensive responses

- Measured the length of r and followed the instructions to convert the value to millimetres.

Limited responses

- Many calculated the length of r correctly in centimetres and did not follow the instruction to convert the value to millimetres.

(b) Comprehensive responses

- Used the equation to calculate the correct value.

Limited responses

- The answer for this question depended on a previous calculation. Some candidates tended to square the 3.14 rather than their measured value for r .

(c) (i) Comprehensive responses

- Recorded the correct value.

Limited responses

- Often read the scale incorrectly, thinking that the scale was 0.02 rather than increments of 0.04.

(ii) Comprehensive responses

- Recorded the correct value.

Limited responses

- Tended to write 0.9 as they had not appreciated that the scale on the voltmeter was 0.02.

(iii) Comprehensive responses

- Correctly calculated the value of P using the equation given.

Limited responses

- Substituted the correct values from the previous values and did not provide the correct value from their own substituted value.

(d) Comprehensive responses

- Labelled the axes fully with appropriate units.
- Used a suitable linear scale starting at 0,0 that covered half of the grid or more in both dimensions.
- Drew a best fit straight line with even spread of points above and below.

Limited responses

- Did not label the axes fully.
- Tended to plot the points correctly when the candidate had used an appropriate linear scale and did not draw a best fit straight line with an even spread of points.

(e) Comprehensive responses

- Candidates identified that the student blowing on the turbine would be a source of error as this would not be the same each time.
- Candidates who had identified the error were able to suggest a sensible improvement, many wrote that a fan on a constant speed would ensure that the results could be directly compared.

Limited responses

- Tended to write that the experiments were not completed at the same time and therefore suggested that the improvement would be to complete them at the same time.

Question 4

Comprehensive responses

- Identified the variables that needed to be controlled.
- Took into consideration the student's statement regarding the number of bubbles and identified that the investigation would need the number of bubbles to be counted in a specific time and therefore used a stopwatch.
- Knew how the student would have to use the results to see if their predictions were correct, using statements like 'If the student is correct the number of bubbles released will be more when the light source is closer to the aquatic plant'.

Limited responses

- Identified at least one piece of apparatus that the student would need to address their prediction.
- Tended to write vague comments such as 'Gather all of the apparatus' without naming any specific equipment.
- Provided a set of results which were then said to be the student's results.
- Did not appreciate that five different distances should be tested or that each investigation needed to be repeated three times.