Pearson Edexcel

iPrimary SCIENCE Specification

Pearson Edexcel International Award in Primary Science (JCS11)
For first teaching September 2018
First examination June 2019

Issue 2

About Pearson

We are the world's leading learning company operating in countries all around the world. We provide content, assessment and digital services to learners, educational institutions, employers, governments and other partners globally. We are committed to helping equip learners with the skills they need to enhance their employability prospects and to succeed in the changing world of work. We believe that wherever learning flourishes so do people.

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All information in this specification is correct at time of publication.

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Summary of Pearson Edexcel International Award in Primary Science specification

Issue 2 changes

Summary of changes made between previous issue and this current issue 2	Page number
Added the second assessment session of October	3

If you need further information on these changes or what they mean, contact us via our website at: qualifications.pearson.com/en/support/contact-us.html.

Contents

1 Introduction

Why choose the Pearson Edexcel International Award in Primary Science?

We have listened to feedback from all parts of the International School subject community, including a large number of teachers. We have made changes that will engage students and give them skills that will support progression to further study in science and a range of other subjects. Our content and assessment approach to primary science has been developed alongside primary English and, in particular, primary mathematics, to ensure a consistent approach across the whole Pearson Edexcel iPrimary programme.

The content and assessment approach for primary science has been designed to meet students' needs in the following ways:

- content is interesting and engaging but is also designed to ensure good preparation for further study at Pearson Edexcel International Award in Lower Secondary Science
- opportunities are provided to 'localise' the content to make it more relevant for students
- achievement tests are clear and straightforward – our achievement tests are clear and accessible for students of all ability ranges and for all learning styles; our mark schemes are straightforward, so that the assessment requirements are clear
- students' skills are broadly developed – the skills developed will be assessed through questions in written examinations; applying understanding of scientific concepts and principles to a range of situations improves their analytical and logic skills.

Progression to iLowerSecondary and to International GCSE

The Pearson Edexcel iPrimary programme provides the ideal preparation for progression to the Pearson Edexcel iLowerSecondary programme, as well as laying the foundations for success at International GCSE level.

Through our World Class Qualification development process, we have consulted with International GCSE teachers and examiners to validate the appropriateness of the qualification, including its content, skills development and assessment structure.

More information on all our qualifications can be found on our Pearson Edexcel iPrimary and iLowerSecondary pages at qualifications.pearson.com

Supporting you in planning and implementing this qualification

The Pearson Edexcel iPrimary programme is more than just a curriculum and specification – it is a complete toolkit for teachers consisting of the following elements to improve student outcomes.

Planning

- Full, editable Schemes of Work are supplied for all six years of the iPrimary curriculum.
- Transition documents highlight key differences between the legacy Primary and Lower Secondary School (PLSC) qualifications from 2011, they help you to make a smooth transition from teaching the legacy qualifications to teaching the new qualifications. Transition documents are also available for switching over from the Science National Curriculum (2014) and other internationally recognised curricula.

Teaching and learning

- Subject-specific teacher's guides at each level provide support for specialist- and non-specialist teachers, and cover teaching techniques, pedagogy and short-, medium- and long-term planning.
- Full example units of work are provided for each and every topic.
- Print and digital learning and teaching resources mapped to the iPrimary curriculum promote 'any time, any place' learning to improve student motivation and encourage new ways of working.

Training and professional development

- Face-to-face teacher professional development is included as part of your iPrimary subscription.
- Additional, ongoing online and interactive webinar support is also included as part of the programme.

Preparing for assessments

Exam support

We will give you resources to help you prepare your students for their assessments, for example examiner commentaries following each examination series.

ResultsPlus

ResultsPlus provides the most detailed analysis available of your students' exam performance. It can help you to identify the topics and skills where further learning would benefit your students.

Get help and support

Get support from both Pearson and the wider iPrimary community via our dedicated online forum.

Qualification at a glance

Content and assessment overview

The Pearson Edexcel International Award in Primary Science consists of one externally-set achievement test.

Achievement test	***(JSC11/01)**
Externally assessed Written examination: 1 hour Availability: June and October First assessment: June 2019 60 marks	

Content overview

There are four core content areas: Biology, Chemistry, Physics and Scientific Enquiry. Topics that cover these areas are given below.

Biology

- Feeding relationships
- Variation and classification
- Growing plants
- Plant adaptations
- Micro–organisms
- Plant life cycles
- Heart, lungs and circulation.

Chemistry

- Solids, liquids and gases
- Mixing and separating materials
- Reversible and irreversible changes.

Physics

- Light
- Electricity: everyday uses and simple circuits
- Seeing and reflecting
- Electricity: changing circuits
- Earth and space
- Forces in air and water.

Scientific Enquiry

- Scientific ideas
- Investigating
- Obtaining and presenting evidence
- Conclusions
- Evaluating.

Achievement test	***(JSC11/01)**

Assessment overview

- Section A consists of 45 marks, it covers the content from Biology, Chemistry and Physics.
- Section B consists of 15 marks, it covers the skills in Scientific Enquiry.
- Students must answer all questions.
- The test consists of multiple-choice and closed-response questions, some use of direct questions, and graphical and short-open response questions; there may be some basic calculations.
- Calculators may be used in the test. Please see *Appendix 3: Calculators*.

*The subject code is used by centres to enter students for a qualification. Centres will need to use the entry codes only when claiming students' qualifications.

2 Subject content and assessment information

Qualification aims and objectives

The sciences should be taught in ways that ensure that students have the knowledge to enable them to develop curiosity about the natural world, insight into working scientifically, and appreciation of the relevance of science to their everyday lives, so that they develop:

- scientific knowledge and conceptual understanding in the areas of biology, chemistry and physics
- understanding of the nature, processes and methods of science through scientific enquiry, which helps them to answer scientific questions on the world around them
- learning of how to apply observational, practical and enquiry-based skills to the world around them
- their ability to begin to evaluate claims based on science through analysis of methods, evidence and conclusions, both qualitative and quantitative.

Scientific enquiry is set out separately but must always be taught through, and be clearly related to, the Pearson Edexcel International Award in Primary Science learning objectives.

Content

Overview

This Pearson Edexcel International Award in Primary Science requires students to demonstrate knowledge, understanding and application of the following learning objectives drawn from years 3, 4, 5 and 6 of the Pearson Edexcel iPrimary Curriculum in Science.

A full list of units that can be used in the assessment is given in *Appendix 2: Units*.

Content detail

Biology

Topic 1: Feeding relationships

Students should:		Guidance *iPrimary Curriculum reference*
1.1	understand that food is a basic need and that the availability of food affects the size of animal populations and their distribution	*Year 3: Feeding relationships*
1.2	understand that plants make their own food but animals depend on plants and/or other animals as a food source	knowledge of photosynthesis is **NOT** required *Year 3: Feeding relationships*
1.3	know what is meant by the terms *producer* and *consumer*	*Year 3: Feeding relationships*
1.4	know what is meant by the terms *predator* and *prey*	*Year 3: Feeding relationships*
1.5	understand the inter-relationship between predators and prey	*Year 3: Feeding relationships*
1.6	know how to interpret and construct simple, linear foods chains involving three or four organisms	*Year 3: Feeding relationships*
1.7	know how to identify producers, consumers, herbivores, carnivores, predators and prey in a variety of simple food chains and food webs	*Year 3: Feeding relationships*

Topic 2: Variation and classification

Students should:		Guidance *iPrimary Curriculum reference*
2.1	explain how living things can be classified according to shared features	know that living things are classified into broad groups according to common observable characteristics and based on similarities and differences *Year 3: Animal adaptations* the classification of animals to include vertebrates (fish, amphibians, reptiles, birds and mammals) and invertebrates (such as snails, slugs, worms, crabs, spiders and insects) *Year 4: Variation and classification* the classification of plants to include flowering plants (including grasses and trees) and non-flowering plants (such as ferns and mosses) *Year 4: Growing plants*
2.2	know how to use classification keys to help group, identify and name a variety of living things in the local and wider environment	identify and use the observable characteristics to classify a specific species of plant, for example flower colour, flower shape, leaf shape identify and use the observable characteristics to classify a specific species of animal, for example colour, body covering, number of legs *Year 4: Variation and classification* use a simple dichotomous key to identify a variety of plants *Year 4: Growing plants*

Topic 3: Growing plants

Students should:		Guidance *iPrimary Curriculum reference*
3.1	know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers	know that: • roots anchor the plant and take in water and nutrients • stem/trunk supports plant and transports water and nutrients • leaves are the site of food manufacture • flowers are for reproduction. *Year 4: Growing plants*
3.2	understand the way in which water is transported within plants	understand that water passes from the soil into a plant's roots and up through the stem to the leaves and other parts of the plant details of the internal structure of roots and stems are **NOT** required *Year 4: Growing plants*
3.3	understand that plants need the correct amount of water and light to grow well	*Year 4: Growing plants*
3.4	understand that soil provides minerals to help plants grow and that this can be supplemented by fertilisers/organic matter	*Year 4: Growing plants*

Topic 4: Plant adaptations

Students should:		Guidance *iPrimary Curriculum reference*
4.1	understand that different habitats and microhabitats have different environmental conditions	environmental conditions, including temperature, light and water *Year 5: Plant adaptations*
4.2	understand ways in which plants are suited to the environment in which they are found	understand that: • the availability of water may affect the pattern of root growth • plants require light and that the availability of light affects their growth, size and distribution • environmental differences can bring about variation of the same species. predict the likely habitat of a variety of plants from the adaptations that they show *Year 5: Plant adaptations*
4.3	know how to compare features of plant adaptations in two contrasting habitats	*Year 5: Plant adaptations*

Topic 5: Micro-organisms

Students should:		Guidance *iPrimary Curriculum reference*
5.1	know the term *micro-organisms* and that these can be bacteria, viruses or microscopic fungi, for example yeasts	know that micro-organisms are so small a microscope is needed to see them recall the terms *bacterium/bacteria, fungus/fungi and virus* cellular detail and the differences between these micro-organisms are **NOT** required *Year 6: Micro-organisms*
5.2	know ways in which some micro-organisms can be useful and others can be harmful	useful: for example making bread, compost, cheese and yoghurt harmful: for example disease, food poisoning, food going mouldy. *Year 6: Micro-organisms*
5.3	know that micro-organisms growing and reproducing on food can cause food poisoning	*Year 6: Micro-organisms*
5.4	explain some simple food hygiene precautions to reduce the risk of food poisoning	for example hand washing, clean surfaces, methods of storage/refrigeration *Year 6: Micro-organisms*
5.5	understand the role of decomposers in food chains and the recycling of materials	understand that: • bacteria and fungi are involved in the process of decay • breaking down dead animals and plant material releases nutrients back to the soil. *Year 6: Micro-organisms*

Topic 6: Plant life cycles

Students should:		Guidance *iPrimary Curriculum reference*
6.1	understand that some plants have flowers that produce seeds which grow into new plants	*Year 6: Plant life cycles*
6.2	know the life cycle of a typical flowering plant, using the terms *germination*, *flowering*, *pollination*, *fertilisation* and *seed dispersal*	*Year 6: Plant life cycles*
6.3	explain why seeds need to be dispersed	*Year 6: Plant life cycles*
6.4	understand the conditions required for the germination of seeds	water and temperature *Year 6: Plant life cycles*
6.5	know that pollination is the transfer of pollen from the anther to the stigma on the same or a different flower	*Year 6: Plant life cycles*
6.6	understand the processes of insect and wind pollination	a simple description only: • bright coloured and scented flowers attract insects • insects brush against anther/pollen • sticky stigma takes pollen off insect • large filaments hang anthers outside flower so pollen is blown by the wind • large stigmas catch pollen. *Year 6: Plant life cycles*
6.7	know the parts of an insect-pollinated flower	these parts include sepal, petals, stamen (filament and anther), carpel (stigma, style, ovary and ova) *Year 6: Plant life cycles*
6.8	explain the function of the parts of an insect pollinated flower	*Year 6: Plant life cycles*
6.9	understand the terms *pollination* and *fertilisation*	pollination, the transfer of pollen from the anther to the stigma fertilisation occurs when the nucleus from the pollen combines with the nucleus in an ovule – detailed mechanism **NOT** required *Year 6: Plant life cycles*

Students should:		Guidance *iPrimary Curriculum reference*
6.10	know different mechanisms by which seeds are dispersed	including: • water, for example coconut • wind, for example poppy, dandelion and sycamore seeds • animals, for example fruits, nuts and berries • explosion, for example peas and vetch. *Year 6: Plant life cycles*

Topic 7: Heart, lungs and circulation

Students should:		Guidance *iPrimary Curriculum reference*
7.1	know that the heart is an organ that pumps blood as part of the circulatory system	*Year 6: Heart, lungs and circulation*
7.2	understand that water and nutrients are transported around our bodies in blood	*Year 6: Heart, lungs and circulation*
7.3	know that the circulatory system comprises the heart and blood vessels that contain blood	*Year 6: Heart, lungs and circulation*
7.4	understand how pulse rate changes with exercise	pulse rate can be measured in beats per minute (bpm) *Year 6: Heart, lungs and circulation*
7.5	explain the reason for a change of pulse rate during exercise in terms of transporting oxygen and nutrients to muscles	*Year 6: Heart, lungs and circulation*
7.6	know that the lungs are located in the thorax and that they are the organs used for breathing	*Year 6: Heart, lungs and circulation*
7.7	understand that air is a mixture of gases, including oxygen	*Year 6: Heart, lungs and circulation*
7.8	understand that blood picks up oxygen from the lungs and transports it through blood vessels to organs of the body	*Year 6: Heart, lungs and circulation*
7.9	know how to distinguish and use the terms *breathing* (ventilation of the lungs) and *respiration* (how oxygen is used by the body once it reaches organs)	only a simple distinction is required at this level *Year 6: Heart, lungs and circulation*

Chemistry

Topic 8: Solids, liquids and gases

Students should:		Guidance *iPrimary Curriculum reference*
8.1	know how to identify substances as solids, liquids and gases and distinguish between them	*Year 4: Solids, liquids and gases*
8.2	know some common properties of solids, liquids and gases	for example: • solids hold their shape and do not flow • liquids flow and form a pool/take the shape of the bottom of a container • gases move easily and escape from unsealed containers. *Year 4: Solids, liquids and gases*
8.3	understand that solids consisting of very small particles can behave as liquids in some ways	for example sand will 'flow' *Year 4: Solids, liquids and gases*
8.4	understand that temperature is a measure of how hot or cold something is and is measured in degrees Celsius (°C) using a thermometer	*Year 4: Solids, liquids and gases*
8.5	understand that water exists in three states and changes from one to another at different temperatures	*Year 4: Solids, liquids and gases*
8.6	understand that different substances change state at different temperatures	*Year 4: Solids, liquids and gases*

Topic 9: Mixing and separating materials

Students should:		Guidance *iPrimary Curriculum reference*
9.1	understand that solids can be mixed and that sieving may be used to separate some mixtures	*Year 5: Mixing and separating materials*
9.2	explain how filtration may be used to separate some solids from a liquid	a simple explanation only: • liquids pass through filter paper • insoluble solids do not. the terms *filtrate* and *residue* are **NOT** required recall sand and flour are examples of insoluble solids *Year 5: Mixing and separating materials*
9.3	understand that when a solid dissolves in water it forms a solution that cannot be separated by filtration	recall sugar and salt are examples of soluble solids *Year 5: Mixing and separating materials*
9.4	know ways in which simple substances such as sugar and salt can be dissolved more quickly	including: • crushing the solid • heating the liquid • stirring the mixture. interpreting data in simple tables or graphs to compare the amounts of different solids that will dissolve in a given volume of water *Year 5: Mixing and separating materials*
9.5	explain that when a solution is left exposed to the air the liquid will evaporate into the air leaving the dissolved solid behind	*Year 5: Mixing and separating materials*
9.6	use knowledge of solids, liquids and gases to decide how mixtures might be separated, including by sieving, using a magnet, filtering and evaporating	use knowledge about how a specific mixture can be separated to suggest ways in which other similar mixtures may be separated *Year 5: Mixing and separating materials*

Topic 10: Reversible and irreversible changes

Students should:		Guidance *iPrimary Curriculum reference*
10.1	explain, with examples, that some mixtures can be separated using sieving, filtration or magnetism	this builds on 9.6 and *Year 3: Magnets* examples may include combinations of sugar/salt/flour/sand/iron filings/rice grains/pebbles/stones *Year 6: Reversible and irreversible change*
10.2	understand the terms *dissolving*, *solution*, *solvent* and *solute*	*Year 6: Reversible and irreversible change*
10.3	explain how a solute can be recovered from a solution by evaporating the solvent	for example heating salt solution, this builds on 9.5 *Year 6: Reversible and irreversible change*
10.4	understand that *melting*, *freezing*, *evaporation* and *condensation* are changes of state	*Year 6: Reversible and irreversible change*
10.5	know that changes of state require changes of temperature	*Year 6: Reversible and irreversible change*
10.6	know the role of evaporation and condensation in the water cycle	limited to a simple water cycle comprising of evaporation, condensation, precipitation, sea, clouds, land *Year 6: Reversible and irreversible change*
10.7	understand that dissolving, mixing and changes of state are reversible changes	*Year 6: Reversible and irreversible change*
10.8	explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible	*Year 6: Reversible and irreversible change*
10.9	know about simple irreversible changes, for example iron nails rusting, wax burning, wood burning, bread cooking	*Year 6: Reversible and irreversible change*
10.10	know that the changes observed when acid and bicarbonate of soda are mixed are evidence that new materials are formed	*Year 6: Reversible and irreversible change*

Physics

Topic 11: Light

Students should:		Guidance *iPrimary Curriculum reference*
11.1	understand that we need light in order to see things and that dark is the absence of light	*Year 3: Light*
11.2	understand that some materials block light and are described as being opaque	*Year 3: Light*
11.3	understand that when light from a source is blocked by an opaque object, a shadow can form that is the same shape as the object	know that the position of a shadow is affected by the position of the opaque object *Year 3: Light*
11.4	understand patterns in the way that the size of shadows change	*Year 3: Light*

Topic 12: Electricity: everyday uses and simple circuits

Students should:		Guidance *iPrimary Curriculum Reference*
12.1	understand some uses of electricity and identify common appliances which use electricity	identify some common appliances which use electricity to produce light, heat, movement, sound or combinations of these *Year 4: Electricity: everyday uses and simple circuits*
12.2	know about dangers associated with mains electricity	for example electrocution and fire *Year 4: Electricity: everyday uses and simple circuits*
12.3	understand that some devices use batteries which supply electricity	use the term *'cell'* for individual units of a *'battery'* *Year 4: Electricity: everyday uses and simple circuits*
12.4	understand that a circuit needs a power source to work	*Year 4: Electricity: everyday uses and simple circuits*

Students should:		Guidance *iPrimary Curriculum Reference*
12.5	understand that a complete circuit is needed for a device to work and that a switch can be used to break a circuit	identify simple connection errors in circuits drawn in 3D or using symbols predict the effects of open and closed switches in a series circuit understand the effects of a component failure in a series circuit *Year 4: Electricity: everyday uses and simple circuits*
12.6	understand that some materials conduct electricity better than others using the terms *electrical conductor* and *insulator*	*Year 4: Electricity: everyday uses and simple circuits*
12.7	understand the use of common electrical conductors and insulators, for example contrast the use of plastic and copper in electrical cables and household appliances	*Year 4: Electricity: everyday uses and simple circuits*

Topic 13: Seeing and reflecting

Students should:		Guidance *iPrimary Curriculum Reference*
13.1	understand that light comes from a source and appears to travel in straight lines	recall some sources of light, for example Sun, torch, electric light, candle explain that although some objects can reflect light, they are not light sources, for example Moon, mirror *Year 5: Seeing and reflecting*
13.2	explain that we see things because light travels from light sources into our eyes or from light sources to objects and then into our eyes, including drawing and interpreting simple ray diagrams	rays of light should be represented by a straight line with an arrow on the line showing the direction of travel use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into our eyes *Year 5: Seeing and reflecting*
13.3	understand that light can be reflected from shiny surfaces and when reflected, the light changes direction	knowledge and use of the terms '*angle of incidence*' and '*angle of reflection*' are **NOT** required *Year 5: Seeing and reflecting*

Students should:		Guidance *iPrimary Curriculum Reference*
13.4	know that smooth and shiny surfaces reflect light better than a dull surface does	*Year 5: Seeing and reflecting*
13.5	know what is meant by the terms *transparent* and *opaque*	*Year 5: Seeing and reflecting*

Topic 14: Electricity: changing circuits

Students should:		Guidance *iPrimary Curriculum Reference*
14.1	know how to use and interpret recognised symbols for components when drawing or designing simple series circuits	recognise and name 3D diagrams of a bulb, buzzer, battery (cell), wire, switch and motor draw and identify recognised electrical component symbols for a bulb, buzzer, battery (cell), wire, switch and motor *Year 6: Electricity: changing circuits*
14.2	know how the brightness of a lamp, the volume of a buzzer or the speed of a motor changes with the number and voltage of cells, the number of components in the circuit and the on/off position of switches used in the circuit	series circuits **ONLY** *Year 6: Electricity: changing circuits*

Topic 15: Earth and space

Students should:		Guidance *iPrimary Curriculum Reference*
15.1	understand that the Sun is a star and that it is at the centre of our Solar System	*Year 5: Earth and space*
15.2	understand that the Earth, the Sun and the Moon are part of the Solar System and that the Earth is a planet with one moon	*Year 5: Earth and space*
15.3	understand that planets have different sizes and some have more than one moon	know there are 8 planets; Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune (Pluto has been reclassified as a dwarf planet) the number of moons associated with each planet (except Earth) is **NOT** required *Year 5: Earth and space*

Students should:		Guidance *iPrimary Curriculum Reference*
15.4	know about the position and the movement of the Earth, and other planets, relative to the Sun in our Solar System	*Year 5: Earth and space*
15.5	know about the movement of the Moon relative to the Earth, correctly using the term *orbit*	*Year 5: Earth and space*
15.6	understand that ideas about the Solar System have changed and developed over time	for example Ptolemy's (geocentric) model gave way to Copernicus's (heliocentric) model as instruments, observations and data improved *Year 5: Earth and space*
15.7	explain that the Earth spins on its axis, causing some parts of the Earth to be in daylight when other parts are in darkness	*Year 5: Earth and space*
15.8	understand how shadow length changes during the course of a day	*Year 5: Earth and space*
15.9	explain how the apparent movement of the Sun across the sky is linked to the Earth's rotation	*Year 5: Earth and space*

Topic 16: Forces in air and water

Students should:		Guidance *iPrimary Curriculum Reference*
16.1	know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	a detailed explanation of gravity is **NOT** required *Year 6: Forces in air and water*
16.2	understand that weight is a force and forces are measured in newtons (N)	*Year 6: Forces in air and water*
16.3	understand that more than one force can act on an object at the same time and these forces can be represented by the direction and size of an arrow	understand forces may be balanced or unbalanced and the effect this will have on the direction and/or motion of an object *Year 6: Forces in air and water*

Students should:		Guidance *iPrimary Curriculum Reference*
16.4	know that the force of friction acts on moving objects to slow them down	consider examples: • where friction is useful, for example car and bicycle brakes • where friction is not useful, for example bearings. know how the effects of friction can be reduced by streamlining, smoothing surfaces and the use of oil *Year 6: Forces in air and water*
16.5	understand how friction can be used to affect how well an object grips to a surface	for example the tread of a shoe or tyre; the roughness of a road surface approaching an important crossing/junction *Year 6: Forces in air and water*
16.6	understand that friction can act between solid surfaces and air and between solid surfaces and water	*Year 6: Forces in air and water*
16.7	understand that air resistance and water resistance are forces that reduces the speed at which objects move	*Year 6: Forces in air and water*
16.8	explain how the shape of objects can be used to reduce the effects of water and air resistance, including the term *streamlined*	*Year 6: Forces in air and water*

Scientific Enquiry

Topic 17a: Scientific ideas

Students should:		Guidance *iPrimary Curriculum Reference*
17.1	be able to ask relevant scientific questions	suggest questions to test a scientific idea and consider what evidence would be needed to answer them *Year 4 to 6: Later Scientific Enquiry*
17.2	be able to recognise questions that can be answered by scientific enquiry and those that cannot	*Year 4 to 6: Later Scientific Enquiry*
17.3	be able to plan simple scientific enquiries	select appropriate equipment for arrange of tasks and plan to use it effectively understand that only one variable should be changed; others should be controlled use of the terms *dependent variable* and *independent variable* are **NOT** required *Year 4 to 6: Later Scientific Enquiry*

Topic 17b: Investigating

Students should:		Guidance *iPrimary Curriculum Reference*
17.4	be able to use enquiries to answer scientific questions	*Year 4 to 6: Later Scientific Enquiry*
17.5	be able to set up simple enquiries, including comparative and fair tests	setting up simple enquiries taking into consideration hazards and safety *Year 4 to 6: Later Scientific Enquiry*
17.6	be able to select equipment appropriate to the enquiry	including a thermometer, a beaker, weighing scales/top pan balance, measuring cylinder, stopwatch, test tube, Bunsen burner, evaporating dish *Year 4 to 6: Later Scientific Enquiry*
17.7	understand how to make systematic and careful observations	*Year 4 to 6: Later Scientific Enquiry*
17.8	understand how to take accurate measurements, using a range of scientific equipment	*Year 4 to 6: Later Scientific Enquiry*

Students should:		Guidance *iPrimary Curriculum Reference*
17.9	understand the need for repeat readings and relate this to the reliability of the data collected	*Year 4 to 6: Later Scientific Enquiry*

Topic 17c: Obtaining and presenting evidence

Students should:		Guidance *iPrimary Curriculum Reference*
17.10	understand how to record data using keys, tables, scatter graphs and simple bar and line graphs	students will **NOT** be expected to determine their own scales for axes on graphs *Year 4 to 6: Later Scientific Enquiry*

Topic 17d: Conclusions

Students should:		Guidance *iPrimary Curriculum Reference*
17.11	be able to use results to draw simple conclusions and to predict new values	*Year 4 to 6: Later Scientific Enquiry*
17.12	be able to identify scientific evidence that has been used to support or refute their own conclusions and those of others	*Year 4 to 6: Later Scientific Enquiry*

Topic 17e: Evaluating

Students should:		Guidance *iPrimary Curriculum Reference*
17.13	be able to identify limitations to investigations and suggest how an investigation might be improved; identify a result that looks odd compared to other results	make practical suggestions with reasons about how a working method could be improved point out data that does not fit the pattern and suggest simple reasons why the data does not fit the pattern use of the term *anomaly* is **NOT** required *Year 4 to 6: Later Scientific Enquiry*

Assessment information

The Pearson Edexcel International Award in Primary Science consists of one externally-examined achievement test.

- The test is 1 hour and is out of 60 marks.
- Section A consists of 45 marks, it covers the content from Biology, Chemistry and Physics.
- Section B consists of 15 marks, it covers the skills in Scientific Enquiry.
- Students must answer all questions.
- The test consists of multiple-choice and closed-response questions, some use of direct questions, graphical and short-open response questions; there may be some basic calculations.
- Calculators may be used in the test. Please see *Appendix 3: Calculators*.

Please see the *Qualification at a glance* section for more information.

Sample assessment materials

A sample achievement test and mark scheme for this assessment can be found in the *Pearson Edexcel International Award in Primary Science Sample Assessment Materials (SAMs)* document.

A full list of command words that will be used in the assessment can be found in *Appendix 1: Command word taxonomy*.

Assessment Objectives

Students must:		% in qualification
AO1	demonstrate knowledge of scientific ideas, scientific techniques and procedures	28–32
AO2	demonstrate understanding of scientific ideas, scientific techniques and procedures	32–35
AO3	apply knowledge and understanding of scientific ideas, scientific enquiry, techniques and procedures	22–25
AO4	analyse and interpret information, including scientific data	5–8
AO5	evaluate, make judgements and draw conclusions.	5–8
	Total	**100%**

3 Administration and general information

Entries

Details of how to enter students for the examinations for this qualification can be found in our *International Information Manual*. A copy is made available to all examinations officers and is also available on our website: qualifications.pearson.com.

Access arrangements, reasonable adjustments, special consideration and malpractice

Equality and fairness are central to our work. Our equality policy requires all students to have equal opportunity to access our qualifications and assessments, and our qualifications to be awarded in a way that is fair to every student.

We are committed to making sure that:

- students with a protected characteristic (as defined by the UK Equality Act 2010) are not, when they are undertaking one of our qualifications, disadvantaged in comparison to students who do not share that characteristic
- all students achieve the recognition they deserve for undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers.

Language of assessment

Assessment of this qualification will be available in English only. All student work must be in English.

Access arrangements

Access arrangements are agreed before an assessment. They allow students with special educational needs, disabilities or temporary injuries to:

- access the assessment
- show what they know and can do without changing the demands of the assessment.

The intention behind an access arrangement is to meet the particular needs of an individual student with a disability without affecting the integrity of the assessment. Access arrangements are the principal way in which awarding bodies comply with the duty under the Equality Act 2010 to make 'reasonable adjustments'.

Access arrangements should always be processed at the start of the course. Students will then know what is available and have the access arrangement(s) in place for assessment.

Reasonable adjustments

The Equality Act 2010 requires an awarding organisation to make reasonable adjustments where a student with a disability would be at a substantial disadvantage in undertaking an assessment. The awarding organisation is required to take reasonable steps to overcome that disadvantage.

A reasonable adjustment for a particular student may be unique to that individual and therefore might not be in the list of available access arrangements.

Whether an adjustment will be considered reasonable will depend on a number of factors, including:

- the needs of the student with the disability
- the effectiveness of the adjustment
- the cost of the adjustment; and
- the likely impact of the adjustment on the student with the disability and other students.

An adjustment will not be approved if it involves unreasonable costs to the awarding organisation, timeframes or affects the security or integrity of the assessment. This is because the adjustment is not 'reasonable'.

Special consideration

Special consideration is a post-examination adjustment to a student's mark or grade to reflect temporary injury, illness or other indisposition at the time of the examination/ assessment, which has had, or is reasonably likely to have had, a material effect on a candidate's ability to take an assessment or demonstrate their level of attainment in an assessment.

Further information

Please see our website for further information about how to apply for access arrangements and special consideration.

For further information about access arrangements, reasonable adjustments and special consideration please refer to the JCQ website: www.jcq.org.uk.

Candidate malpractice

Candidate malpractice refers to any act by a candidate that compromises or seeks to compromise the process of assessment or which undermines the integrity of the qualifications or the validity of results/certificates.

Candidate malpractice in examinations **must** be reported to Pearson using a *JCQ Form M1* (available at www.jcq.org.uk/exams-office/malpractice). The form can be emailed to pqsmalpractice@pearson.com or posted to: Investigations Team, Pearson, 190 High Holborn, London, WC1V 7BH. Please provide as much information and supporting documentation as possible. Note that the final decision regarding appropriate sanctions lies with Pearson.

Failure to report malpractice constitutes staff or centre malpractice.

Staff/centre malpractice

Staff and centre malpractice includes both deliberate malpractice and maladministration of our qualifications. As with candidate malpractice, staff and centre malpractice is any act that compromises or seeks to compromise the process of assessment or which undermines the integrity of the qualifications or the validity of results/certificates.

All cases of suspected staff malpractice and maladministration **must** be reported immediately, before any investigation is undertaken by the centre, to Pearson on a *JCQ Form M2(a)* (available at www.jcq.org.uk/exams-office/malpractice).

The form, supporting documentation and as much information as possible can be emailed to pqsmalpractice@pearson.com or posted to: Investigations Team, Pearson, 190 High Holborn, London, WC1V 7BH. Note that the final decision regarding appropriate sanctions lies with Pearson.

Failure to report malpractice itself constitutes malpractice.

More-detailed guidance on malpractice can be found in the latest version of the document *JCQ General and vocational qualifications Suspected Malpractice in Examinations and Assessments,* available at www.jcq.org.uk/exams-office/malpractice.

Awarding and reporting

The Pearson Edexcel International Award in Primary Science will be graded on a three-level scale from P1 to P3.

The first certification opportunity for the Pearson Edexcel International Award in Primary Science will be in August 2019. A pass in the Pearson Edexcel International Award in Primary Science is indicated by one of the three levels P1, P2 and P3, of which level P3 is the highest and level P1 the lowest. Students whose level of achievement is below the minimum judged by Pearson to be of sufficient standard to be recorded on a certificate will receive an unclassified U result.

Student recruitment and progression

Pearson follows the JCQ policy concerning recruitment to our qualifications in that:

- they must be available to anyone who is capable of reaching the required standard
- they must be free from barriers that restrict access and progression
- equal opportunities exist for all students.

Prior learning and other requirements

There are no prior learning or other requirements for this qualification.

Progression

Students can progress from this qualification to the Pearson Edexcel International Award in Lower Secondary Science.

Appendices

Appendix 1: Command word taxonomy

The following table lists the command words used in the external assessment.

Command word	Definition
Add/label	Requires the addition of or labelling to a stimulus material given in the question, for example labelling a diagram or adding units to a table.
Circle	Used for indicating a point on a graph or diagram where the answer is shown by a circle.
Complete	Requires the completion of a table, graph or diagram.
Draw	Produce/complete a diagram using a ruler or freehand.
Describe	To give an account of something. Statements in the response need to be developed as they are often linked but do not need to include a justification or reason.
Explain	An explanation requires an identification of a point linked with justification/reasoning.
Give/State/Name	These command words are really synonyms. They generally require recall of one or more pieces of information. They are used only when there is more than one possible answer and the words 'What' or 'Which' cannot be used.
Plot	Mark points accurately on a grid from data that is provided and then draw a line of best fit through these points.
Predict	Give an expected result.
Tick	Used for completion of a table where the answer is given by a tick in the table.

Appendix 2: Units

Units that may be used in the external assessment:

- millimetre (mm)
- centimetre (cm)
- metre (m)
- kilometre (km)
- square centimetre (cm^2)
- square metre (m^2)
- cubic centimetre (cm^3)
- cubic decimetre (dm^3)
- litre (l)
- millilitre (ml)
- gram (g)
- kilogram (kg)
- newton (N)
- second (s)
- minute (min)
- hour (h)
- metre per second (m/s)
- kilometre per hour (km/h)
- degree Celsius (°C).

Appendix 3: Calculators

Students may use a calculator in examination for this qualification. Centres are responsible for making sure that calculators used by their students meet the requirements highlighted in the table below.

Students must be told of these regulations and be familiar with them before they begin their examination for this qualification.

<table>
<tr>
<td>Calculators must be:
of a size suitable for use on a desk
either battery- or solar powered
free of lids, cases and covers that have printed instructions or formulae.</td>
<td rowspan="2">Calculators must not:
be designed or adapted to offer any of these facilities
language translators
symbolic algebraic manipulation
symbolic differentiation or integration
communication with other machines or the internet
be borrowed from another candidate during an examination for any reason*
have retrievable information stored in them, including
databanks
dictionaries
mathematical formulae
text.</td>
</tr>
<tr>
<td>The candidate is responsible for:
the calculator’s power supply
the calculator’s working condition
clearing anything stored in the calculator.</td>
</tr>
</table>

*An invigilator may give a student a replacement calculator if needed.

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