



INTRODUCTORY PAPER							
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING		
KNOWLEDGE AREA	Questions may require students, for example, to:						
EARTH & BEYOND	 observe and identify an aspect of a particular season 	 identify the message conveyed by a simple sign 	 predict the daytime temperature based on that of previous days 	 investigate the hardness of different types of rock 	 identify the moon shape missing from a series of photos 		
NATURAL & PROCESSED MATERIALS	 compare the levels of liquids in different containers 	 interpret a simple graph related to resources 	 select a material from a list based on data in a table 	 investigate the results of mixing different solids with water 	 match the properties of a material with its intended purpose 		
LIFE & LIVING	 identify a change that takes place in a living thing over time 	 identify a stage in the life- cycle diagram of an animal 	 draw a conclusion based on a simple graph of growth of a child 	 investigate the growth of seedlings of different types of plant 	 use a simple key to identify some animals 		
ENERGY & CHANGE	 observe changes caused by heating or cooling 	 rank values in a table of temperature data 	 predict the movement of objects in simple situations 	investigate the formation of shadows	 determine the direction of movement of wheels or gears 		

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ICAS Paper to Year Level Conversion Table www.eaa.unsw.edu.au/icas/paper-to-year-level-equivalent-table.asp

Paper Introductory = Year 2

Paper A = Year 3

Paper B = Year 4

Paper C = Year 5

Paper D = Year 6







PAPER A							
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING		
KNOWLEDGE AREA	Questions may require students, for example, to:						
EARTH & BEYOND	 determine similarities and differences between rocks 	 interpret tables with data relating to planetary data 	 make a prediction about seasonal changes 	 investigate seasons and the Sun's movement across the sky 	 determine how weather affects different regions on Earth 		
NATURAL & PROCESSED MATERIALS	observe the absorption of liquids by paper towels	 interpret tables containing information about household products 	 draw conclusions about the differences between natural and synthetic materials 	 understand the need to test and investigate new designs 	 examine the processes involved in recycling materials 		
LIFE & LIVING	measure the length of living things	identify habitats for certain living things	 examine the function of different body parts of living things 	 examine differences between living and non-living things 	 determine characteristics of living things from available data 		
ENERGY & CHANGE	read a thermometer	 interpret results of a test for floating and sinking 	 predict the effect of a magnet on certain objects 	investigate the uses of sound	 select the most efficient machinery to achieve an outcome 		









PAPER B						
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING	
KNOWLEDGE AREA	Questions may require students to do all the above as well as, for example, the following:					
EARTH & BEYOND	 observe geographical features including mountains and rivers 	 identify equipment needed for humans to go into space 	 understand how sedimentary rocks form 	investigate the effect of wind on objects	 deduce aspects of Earth's motion from diagrams 	
NATURAL & PROCESSED MATERIALS	 observe differences between natural and synthetic materials 	 understand graphs relating to recycling materials 	 draw conclusions about physical properties of materials 	investigate making and using paper	 evaluate the advantages and disadvantages of designs 	
LIFE & LIVING	identify the human senses	 use keys to distinguish between animals 	predict the effect of change on food webs	investigate how plants attract bees	 deduce how humans have affected living and non-living cycles 	
ENERGY & CHANGE	 observe changes in ingredients when heated 	interpret simple changes in energy	 predict the effect of different forces applied to objects 	 investigate how sounds are made and used 	 deduce the direction and speed of cogs from diagrams 	











PAPER C							
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING		
KNOWLEDGE AREA	Questions may require students to do all the above as well as, for example, the following:						
EARTH & BEYOND	observe different cloud patterns	 interpret information given on a geological timescale 	 predict the position of stars at different times of the night 	investigate weather patterns	 deduce the position of shadows during the day 		
NATURAL & PROCESSED MATERIALS	 identify crystal structures of simple salts 	 identify pollution related issues from graphical data 	 examine differences between solids, liquids and gases 	 analyse simple experiments performed with household materials 	examine heat expansion in metals		
LIFE & LIVING	measure living things using printed scales	 use dichotomous keys to classify living things 	identify trends in simple food webs	 understand the function of controls in biological experiments 	 examine differences in teeth in animals 		
ENERGY & CHANGE	examine simple circuits	 interpret diagrams relating to the flow of electricity 	 draw a conclusion about energy sources 	investigate the properties of wind, water and air	 use simple electric circuit diagrams 		









PAPER D							
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING		
KNOWLEDGE AREA	Questions may require students to do all the above as well as, for example, the following:						
EARTH & BEYOND	 observe the effects of weathering and erosion 	■ read weather maps	 draw conclusions about natural phenomena 	 investigate variations in air and water temperatures 	 deduce the youngest rock layer from fossil dating 		
NATURAL & PROCESSED MATERIALS	 observe differences between fresh and processed foods 	 examine tables relating to foodstuffs 	 draw conclusions about the chemical composition of coins 	 distinguish between physical and chemical changes 	 deduce rates of expansion when metal bars are heated 		
LIFE & LIVING	 differentiate between human body parts 	 use habitat maps to identify local plants and animals 	 use food webs to work out relationships between living things 	 investigate resources needed for survival of living things 	 identify how habitats can be polluted by human activities 		
ENERGY & CHANGE	examine light globes of different voltages	interpret graphs of sounds of different loudness	predict current flow in a circuit	 investigate hotspots in a microwave oven 	examine the ranges of radio frequencies		









PAPER E							
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING		
KNOWLEDGE AREA	Questions may require stu	Questions may require students to do all the above as well as, for example, the following:					
EARTH & BEYOND	 measure the size of celestial bodies using ratio scales 	 interpret graphs about sedimentary data 	 identify landforms from contour maps 	investigate rocket propulsion	 predict movements of tectonic plates 		
NATURAL & PROCESSED MATERIALS	 identify building structures using diagrams and drawings 	 interpret tables relating to organic and inorganic substances 	 examine the chemical processes involved in food production 	 identify correct laboratory equipment to use in experiments 	 identify sources of chemical pollution in aquatic and terrestrial environments 		
LIFE & LIVING	 measure animals using relative sizes 	 use keys to differentiate between living things 	 make inferences from animal dental formulas 	 examine relationships between variables in biological experiments 	 determine the trophic position of living things in food chains 		
ENERGY & CHANGE	 measure electrical current and voltage 	 examine differences in energy emissions 	 draw conclusions from data relating to sound 	 make predictions about reflected and refracted rays of light 	 calculate speed and acceleration from given formulas 		









PAPER F					
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING
KNOWLEDGE AREA	Questions may require stu	dents to do all the above as w	ell as, for example, the follow	ing:	
EARTH & BEYOND	 examine and identify differences between sedimentary, metamorphic and igneous rocks 	 interpret diagrams relating to the hydrosphere, lithosphere and atmosphere 	 compare models of the solar system and Universe 	 investigate advantages and disadvantages of renewable and non-renewable energy 	 understand the structure of Earth
NATURAL & PROCESSED MATERIALS	 observe the particle model of matter 	 examine graphs relating to changes of state (solid, liquid and gas) 	 draw conclusions about the properties of metals and non-metals 	 examine variables associated with the production of common gases 	 determine the molecular structure of compounds and elements using models
LIFE & LIVING	identify different parts of the cell	 classify living and non- living things based on structure and form 	 understand the function of different systems of the human body 	 investigate the role of organisms in ecosystems 	 understand interactions of marine organisms
ENERGY & CHANGE	observe transformation of energy	identify energy emission differences	conclude how objects may be moved indirectly	 draw conclusions about the speed of sound in different mediums 	 deduce the velocity of moving objects









PAPER G							
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING		
KNOWLEDGE AREA	Questions may require stu	Questions may require students to do all the above as well as, for example, the following:					
EARTH & BEYOND	 measure the size of atmospheric phenomena such as cyclones 	 determine the characteristics of the Sun from graphical and tabulated data 	 determine the effects of UV light on living and non-living things 	 generate hypotheses and predictions in relation to the weather 	 analyse data related to luminosity of planets and stars 		
NATURAL & PROCESSED MATERIALS	 determine the purpose of dials on measuring equipment 	 interpret data about the properties of metals 	 interpret representations of simple molecules 	 establish the sequence in writing up scientific experiments 	 determine the type of products formed during chemical reactions 		
LIFE & LIVING	 identify and classify living things based on written descriptions 	 use data to identify pests in Australia 	 understand and use biological terminology 	 apply methods of random sampling of living things in ecosystems 	 examine exponential growth in living systems 		
ENERGY & CHANGE	 measure power using special instruments 	 determine the paths of projectiles from a series of photographs or diagrams 	 determine forces in specific situations 	 investigate conversions between potential and kinetic energy 	 deduce relative movement in rotating systems 		









PAPER H							
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING		
KNOWLEDGE AREA	Questions may require stu	Questions may require students to do all the above as well as, for example, the following:					
EARTH & BEYOND	 measure geological structures using relative size of objects 	 interpret relative differences in spectral emission lines 	 classify stars based on brightness and magnitude 	 recognise problems associated with extraterrestrial investigations 	 explain atmospheric phenomena both on Earth and on other planets 		
NATURAL & PROCESSED MATERIALS	identify differences in solvents	 understand the properties of acids and bases 	 identify the effects of alcohol on human functioning 	 understand the use of substances including catalysts in experiments 	 establish rules relating to isotopes 		
LIFE & LIVING	identify organ parts of living things	 examine transverse sections of living and non-living things 	 extrapolate graphical information about growth rates of living things 	 test the function of specific organs and tissues in living things 	 classify species using non-traditional methods 		
ENERGY & CHANGE	record temperature using scales other than Celsius	 identify the effects of electric currents on humans 	 predict the movement of a series of gears 	 assess the safety issues associated with experiments involving electricity 	 compare the different forces acting on a body in the air and in water 		









PAPER I	PAPER I						
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING		
KNOWLEDGE AREA	Questions may require stud	dents to do all the above as v	vell as, for example, the follow	ring:			
EARTH & BEYOND	measure distances using planetary scales	 understand the effect of wind chill on the human body 	 examine evidence relating to the formation of the Universe 	 differentiate between accuracy and precision in experiments 	 examine effects of magnetic fields on Earth and on other planets 		
NATURAL & PROCESSED MATERIALS	 observe differences using planetary scales 	 use graphs related to melting points, boiling points, temperature and pressure 	 determine the implications of the properties of ionic liquids 	 examine activation energy and the use of catalysts 	 use the law of constant proportion and the law of conservation 		
LIFE & LIVING	 observe differences between living things at the sub-species level 	 identify animals based on dental information 	 estimate populations of living and non-living things in specific environments 	 critique experiments involving living things 	 identify the role of genetics and mutation in living things 		
ENERGY & CHANGE	 observe records showing the movement of Earth's magnetic poles 	 understand differences between renewable and non-renewable energy 	 differentiate between AC and DC circuits 	 understand the relationship between magnetic and electric fields 	 determine the amount of energy released from different reactions 		

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PAPER J								
SKILL AREA	MEASURING & OBSERVING	INTERPRETING DATA	PREDICTING/CONCLUDING FROM DATA	INVESTIGATING	REASONING/PROBLEM SOLVING			
KNOWLEDGE AREA	Questions may require stu	Questions may require students to do all the above as well as, for example, the following:						
EARTH & BEYOND	 determine the age of geological structures from rock stratigraphy 	 examine cloud formation and El Nino effect 	the stages in the evolution of the Sun and other stars	 hypothesise about the composition of celestial bodies 	 predict structures from geological maps 			
NATURAL & PROCESSED MATERIALS	 measure microscopic objects 	 determine the relative abundance of atoms and elements in the universe 	 relate total dissolved solids to conductivity 	 understand the effects of various gases on human physiology 	 determine proportions of atoms in compounds 			
LIFE & LIVING	 measure microscopic organisms using nanometre scales 	 interpret complex life history cycles of parasites and viruses 	classify animals to sub- species level	 examine the ethics of the use of living subjects in experiments 	 examine effects of mutations in DNA and RNA 			
ENERGY & CHANGE	 measure macroscopic energy changes such as earthquakes and explosions 	 identify gravitational effects of the moon on tides 	 follow the movement of Earth's magnetic poles 	 identify changes in energy at the sub-atomic level 	 calculate refraction angles and velocity of waves 			

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