

**INTRODUCTORY PAPER**

SKILL AREA	OBSERVING/MEASURING	INTERPRETING	PREDICTING/CONCLUDING	INVESTIGATING	REASONING/PROBLEM SOLVING
<b>KNOWLEDGE AREA</b>	<b>QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:</b>				
<b>EARTH &amp; BEYOND</b>	<ul style="list-style-type: none"> <li>observe and identify an aspect of a particular season</li> </ul>	<ul style="list-style-type: none"> <li>identify the message conveyed by a simple sign</li> </ul>	<ul style="list-style-type: none"> <li>predict the shadow of an object based on the position of the light source</li> </ul>	<ul style="list-style-type: none"> <li>investigate the hardness of different types of rock</li> </ul>	<ul style="list-style-type: none"> <li>identify the moon shape missing from a series of photos</li> </ul>
<b>NATURAL &amp; PROCESSED MATERIALS</b>	<ul style="list-style-type: none"> <li>compare the levels of liquids in different containers</li> </ul>	<ul style="list-style-type: none"> <li>interpret a simple graph related to resources</li> </ul>	<ul style="list-style-type: none"> <li>select a material from a list based on data in a table</li> </ul>	<ul style="list-style-type: none"> <li>investigate the results of mixing different solids with water</li> </ul>	<ul style="list-style-type: none"> <li>match the properties of a material with its intended purpose</li> </ul>
<b>LIFE &amp; LIVING</b>	<ul style="list-style-type: none"> <li>identify a change that takes place in a living thing over time</li> </ul>	<ul style="list-style-type: none"> <li>identify a stage in the life-cycle diagram of an animal</li> </ul>	<ul style="list-style-type: none"> <li>draw a conclusion based on a simple graph of growth of a child</li> </ul>	<ul style="list-style-type: none"> <li>investigate the growth of seedlings of different types of plant</li> </ul>	<ul style="list-style-type: none"> <li>use a simple key to identify some animals</li> </ul>
<b>ENERGY &amp; CHANGE</b>	<ul style="list-style-type: none"> <li>observe changes caused by heating or cooling</li> </ul>	<ul style="list-style-type: none"> <li>rank values in a table of temperature data</li> </ul>	<ul style="list-style-type: none"> <li>predict the movement of objects in simple situations</li> </ul>	<ul style="list-style-type: none"> <li>investigate the formation of shadows</li> </ul>	<ul style="list-style-type: none"> <li>determine the direction of movement of wheels or gears</li> </ul>

**PAPER A**

SKILL AREA	OBSERVING/MEASURING	INTERPRETING	PREDICTING/CONCLUDING	INVESTIGATING	REASONING/PROBLEM SOLVING
<b>KNOWLEDGE AREA</b>	<b>QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:</b>				
<b>EARTH &amp; BEYOND</b>	<ul style="list-style-type: none"> <li>determine similarities and differences between rocks</li> </ul>	<ul style="list-style-type: none"> <li>interpret tables with data relating to planetary data</li> </ul>	<ul style="list-style-type: none"> <li>make a prediction about seasonal changes</li> </ul>	<ul style="list-style-type: none"> <li>investigate seasons and the Sun's movement across the sky</li> </ul>	<ul style="list-style-type: none"> <li>determine how weather affects different regions on Earth</li> </ul>
<b>NATURAL &amp; PROCESSED MATERIALS</b>	<ul style="list-style-type: none"> <li>observe the absorption of liquids by paper towels</li> </ul>	<ul style="list-style-type: none"> <li>interpret tables containing information about household products</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about the differences between natural and synthetic materials</li> </ul>	<ul style="list-style-type: none"> <li>understand the need to test and investigate new designs</li> </ul>	<ul style="list-style-type: none"> <li>examine the processes involved in recycling materials</li> </ul>
<b>LIFE &amp; LIVING</b>	<ul style="list-style-type: none"> <li>measure the length of living things</li> </ul>	<ul style="list-style-type: none"> <li>identify habitats for certain living things</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about the functions of body parts</li> </ul>	<ul style="list-style-type: none"> <li>examine differences between living and non-living things</li> </ul>	<ul style="list-style-type: none"> <li>determine characteristics of living things from available data</li> </ul>
<b>ENERGY &amp; CHANGE</b>	<ul style="list-style-type: none"> <li>read a thermometer</li> </ul>	<ul style="list-style-type: none"> <li>interpret results of a test for floating and sinking</li> </ul>	<ul style="list-style-type: none"> <li>predict the effect of a magnet on certain objects</li> </ul>	<ul style="list-style-type: none"> <li>investigate the uses of sound</li> </ul>	<ul style="list-style-type: none"> <li>select the most efficient machinery to achieve an outcome</li> </ul>

PAPER B					
SKILL AREA	OBSERVING/MEASURING	INTERPRETING	PREDICTING/CONCLUDING	INVESTIGATING	REASONING/PROBLEM SOLVING
KNOWLEDGE AREA	QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:				
EARTH & BEYOND	<ul style="list-style-type: none"> <li>observe geographical features including mountains and rivers</li> </ul>	<ul style="list-style-type: none"> <li>identify equipment needed for humans to go into space</li> </ul>	<ul style="list-style-type: none"> <li>understand how sedimentary rocks form</li> </ul>	<ul style="list-style-type: none"> <li>investigate the effect of wind on objects</li> </ul>	<ul style="list-style-type: none"> <li>deduce aspects of Earth's motion from diagrams</li> </ul>
NATURAL & PROCESSED MATERIALS	<ul style="list-style-type: none"> <li>observe differences between natural and synthetic materials</li> </ul>	<ul style="list-style-type: none"> <li>understand graphs relating to recycling materials</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about physical properties of materials</li> </ul>	<ul style="list-style-type: none"> <li>investigate making and using paper</li> </ul>	<ul style="list-style-type: none"> <li>evaluate the advantages and disadvantages of designs</li> </ul>
LIFE & LIVING	<ul style="list-style-type: none"> <li>make particular observations about human senses</li> </ul>	<ul style="list-style-type: none"> <li>use keys to distinguish between animals</li> </ul>	<ul style="list-style-type: none"> <li>predict the effect of change on food webs</li> </ul>	<ul style="list-style-type: none"> <li>investigate how plants attract bees</li> </ul>	<ul style="list-style-type: none"> <li>deduce how humans have affected living and non-living cycles</li> </ul>
ENERGY & CHANGE	<ul style="list-style-type: none"> <li>observe changes that occur when ingredients are heated</li> </ul>	<ul style="list-style-type: none"> <li>interpret simple changes in energy</li> </ul>	<ul style="list-style-type: none"> <li>predict the effect of different forces applied to objects</li> </ul>	<ul style="list-style-type: none"> <li>investigate how sounds are made and used</li> </ul>	<ul style="list-style-type: none"> <li>deduce the direction and speed of cogs from diagrams</li> </ul>

**PAPER C**

SKILL AREA	OBSERVING/MEASURING	INTERPRETING	PREDICTING/CONCLUDING	INVESTIGATING	REASONING/PROBLEM SOLVING
<b>KNOWLEDGE AREA</b>	<b>QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:</b>				
<b>EARTH &amp; BEYOND</b>	<ul style="list-style-type: none"> <li>observe different cloud patterns</li> </ul>	<ul style="list-style-type: none"> <li>interpret information given on a geological timescale</li> </ul>	<ul style="list-style-type: none"> <li>predict the position of stars at different times of the night</li> </ul>	<ul style="list-style-type: none"> <li>investigate weather patterns</li> </ul>	<ul style="list-style-type: none"> <li>deduce the position of shadows during the day</li> </ul>
<b>NATURAL &amp; PROCESSED MATERIALS</b>	<ul style="list-style-type: none"> <li>identify crystal structures of simple salts</li> </ul>	<ul style="list-style-type: none"> <li>identify issues related to pollution from graphical data</li> </ul>	<ul style="list-style-type: none"> <li>examine differences between solids, liquids and gases</li> </ul>	<ul style="list-style-type: none"> <li>analyse simple experiments performed with household materials</li> </ul>	<ul style="list-style-type: none"> <li>examine heat expansion in metals</li> </ul>
<b>LIFE &amp; LIVING</b>	<ul style="list-style-type: none"> <li>measure living things using printed scales</li> </ul>	<ul style="list-style-type: none"> <li>use dichotomous keys to classify living things</li> </ul>	<ul style="list-style-type: none"> <li>identify trends in simple food webs</li> </ul>	<ul style="list-style-type: none"> <li>understand the function of controls in biological experiments</li> </ul>	<ul style="list-style-type: none"> <li>examine differences in teeth in animals</li> </ul>
<b>ENERGY &amp; CHANGE</b>	<ul style="list-style-type: none"> <li>examine simple electrical circuits</li> </ul>	<ul style="list-style-type: none"> <li>interpret diagrams relating to the flow of electricity</li> </ul>	<ul style="list-style-type: none"> <li>draw a conclusion about energy sources</li> </ul>	<ul style="list-style-type: none"> <li>investigate the properties of wind, water and air</li> </ul>	<ul style="list-style-type: none"> <li>use simple electric circuit diagrams</li> </ul>

PAPER D					
SKILL AREA	OBSERVING/MEASURING	INTERPRETING	PREDICTING/CONCLUDING	INVESTIGATING	REASONING/PROBLEM SOLVING
KNOWLEDGE AREA	QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:				
EARTH & BEYOND	<ul style="list-style-type: none"> <li>observe the effects of weathering and erosion</li> </ul>	<ul style="list-style-type: none"> <li>read weather maps</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about natural phenomena</li> </ul>	<ul style="list-style-type: none"> <li>investigate variations in air and water temperatures</li> </ul>	<ul style="list-style-type: none"> <li>deduce the youngest rock layer from fossil dating</li> </ul>
NATURAL & PROCESSED MATERIALS	<ul style="list-style-type: none"> <li>observe differences between fresh and processed foods</li> </ul>	<ul style="list-style-type: none"> <li>examine tables relating to foodstuffs</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about the chemical composition of coins</li> </ul>	<ul style="list-style-type: none"> <li>distinguish between physical and chemical changes</li> </ul>	<ul style="list-style-type: none"> <li>deduce rates of expansion when metal bars are heated</li> </ul>
LIFE & LIVING	<ul style="list-style-type: none"> <li>observe differences between human body parts</li> </ul>	<ul style="list-style-type: none"> <li>use habitat maps to identify local plants and animals</li> </ul>	<ul style="list-style-type: none"> <li>use food webs to work out the relationships between living things</li> </ul>	<ul style="list-style-type: none"> <li>investigate resources needed for survival of living things</li> </ul>	<ul style="list-style-type: none"> <li>determine how habitats are polluted by human activities</li> </ul>
ENERGY & CHANGE	<ul style="list-style-type: none"> <li>examine light globes of different voltages</li> </ul>	<ul style="list-style-type: none"> <li>interpret graphs of sounds of different loudness</li> </ul>	<ul style="list-style-type: none"> <li>predict current flow in an electrical circuit</li> </ul>	<ul style="list-style-type: none"> <li>investigate hotspots in a microwave oven</li> </ul>	<ul style="list-style-type: none"> <li>examine the ranges of radio frequencies</li> </ul>

**PAPER E**

SKILL AREA	OBSERVING/MEASURING	INTERPRETING	PREDICTING/CONCLUDING	INVESTIGATING	REASONING/PROBLEM SOLVING
<b>KNOWLEDGE AREA</b>	<b>QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:</b>				
<b>EARTH &amp; BEYOND</b>	<ul style="list-style-type: none"> <li>measure the size of celestial bodies using ratio scales</li> </ul>	<ul style="list-style-type: none"> <li>interpret graphs about sedimentary rock data</li> </ul>	<ul style="list-style-type: none"> <li>identify landforms from contour maps</li> </ul>	<ul style="list-style-type: none"> <li>investigate rocket propulsion</li> </ul>	<ul style="list-style-type: none"> <li>predict movements of tectonic plates</li> </ul>
<b>NATURAL &amp; PROCESSED MATERIALS</b>	<ul style="list-style-type: none"> <li>identify building structures using diagrams and drawings</li> </ul>	<ul style="list-style-type: none"> <li>interpret tables relating to organic and inorganic substances</li> </ul>	<ul style="list-style-type: none"> <li>examine the chemical processes involved in food production</li> </ul>	<ul style="list-style-type: none"> <li>identify laboratory equipment to use in experiments</li> </ul>	<ul style="list-style-type: none"> <li>identify sources of chemical pollution in aquatic and terrestrial environments</li> </ul>
<b>LIFE &amp; LIVING</b>	<ul style="list-style-type: none"> <li>measure animals using relative sizes</li> </ul>	<ul style="list-style-type: none"> <li>use keys to differentiate between living things</li> </ul>	<ul style="list-style-type: none"> <li>make inferences from animal dental formulas</li> </ul>	<ul style="list-style-type: none"> <li>examine relationships between variables in biological experiments</li> </ul>	<ul style="list-style-type: none"> <li>determine the trophic position of living things in food chains</li> </ul>
<b>ENERGY &amp; CHANGE</b>	<ul style="list-style-type: none"> <li>measure electrical current and voltage</li> </ul>	<ul style="list-style-type: none"> <li>examine differences in energy emissions</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions from data relating to sound</li> </ul>	<ul style="list-style-type: none"> <li>make predictions about reflected and refracted rays of light</li> </ul>	<ul style="list-style-type: none"> <li>calculate speed and acceleration from given formulas</li> </ul>

**PAPER F**

SKILL AREA	OBSERVING/MEASURING	INTERPRETING	PREDICTING/CONCLUDING	INVESTIGATING	REASONING/PROBLEM SOLVING
<b>KNOWLEDGE AREA</b>	<b>QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:</b>				
<b>EARTH &amp; BEYOND</b>	<ul style="list-style-type: none"> <li>observe differences between sedimentary, metamorphic and igneous rocks</li> </ul>	<ul style="list-style-type: none"> <li>interpret diagrams relating to the hydrosphere, lithosphere and atmosphere</li> </ul>	<ul style="list-style-type: none"> <li>compare models of the solar system and Universe</li> </ul>	<ul style="list-style-type: none"> <li>investigate advantages and disadvantages of renewable and non-renewable energy</li> </ul>	<ul style="list-style-type: none"> <li>understand the structure of Earth</li> </ul>
<b>NATURAL &amp; PROCESSED MATERIALS</b>	<ul style="list-style-type: none"> <li>observe the particle model of matter</li> </ul>	<ul style="list-style-type: none"> <li>examine graphs relating to changes of state (solid, liquid and gas)</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about the properties of metals and non-metals</li> </ul>	<ul style="list-style-type: none"> <li>examine variables associated with the production of common gases</li> </ul>	<ul style="list-style-type: none"> <li>determine the molecular structure of compounds and elements using models</li> </ul>
<b>LIFE &amp; LIVING</b>	<ul style="list-style-type: none"> <li>identify different parts of the cell</li> </ul>	<ul style="list-style-type: none"> <li>classify living and non-living things based on structure and form</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about the function of human body systems</li> </ul>	<ul style="list-style-type: none"> <li>investigate the role of organisms in ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>understand interactions of marine organisms</li> </ul>
<b>ENERGY &amp; CHANGE</b>	<ul style="list-style-type: none"> <li>observe transformation of energy</li> </ul>	<ul style="list-style-type: none"> <li>identify energy emission differences</li> </ul>	<ul style="list-style-type: none"> <li>conclude how objects may be moved indirectly</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about the speed of sound in different mediums</li> </ul>	<ul style="list-style-type: none"> <li>deduce the velocity of moving objects</li> </ul>

**PAPER G**

SKILL AREA	OBSERVING/MEASURING	INTERPRETING	PREDICTING/CONCLUDING	INVESTIGATING	REASONING/PROBLEM SOLVING
<b>KNOWLEDGE AREA</b>	<b>QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:</b>				
<b>EARTH &amp; BEYOND</b>	<ul style="list-style-type: none"> <li>measure the size of atmospheric phenomena such as cyclones</li> </ul>	<ul style="list-style-type: none"> <li>determine the characteristics of the Sun from graphical and tabulated data</li> </ul>	<ul style="list-style-type: none"> <li>determine the effects of UV light on living and non-living things</li> </ul>	<ul style="list-style-type: none"> <li>generate hypotheses and predictions in relation to the weather</li> </ul>	<ul style="list-style-type: none"> <li>analyse data related to luminosity of planets and stars</li> </ul>
<b>NATURAL &amp; PROCESSED MATERIALS</b>	<ul style="list-style-type: none"> <li>determine the purpose of dials on measuring equipment</li> </ul>	<ul style="list-style-type: none"> <li>interpret data about the properties of metals</li> </ul>	<ul style="list-style-type: none"> <li>interpret representations of simple molecules</li> </ul>	<ul style="list-style-type: none"> <li>establish the sequence in writing up scientific experiments</li> </ul>	<ul style="list-style-type: none"> <li>determine the type of products formed during chemical reactions</li> </ul>
<b>LIFE &amp; LIVING</b>	<ul style="list-style-type: none"> <li>identify and classify living things based on written descriptions</li> </ul>	<ul style="list-style-type: none"> <li>use data to identify pests in Australia</li> </ul>	<ul style="list-style-type: none"> <li>understand and use biological terminology</li> </ul>	<ul style="list-style-type: none"> <li>apply methods of random sampling of living things in ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>examine exponential growth in living systems</li> </ul>
<b>ENERGY &amp; CHANGE</b>	<ul style="list-style-type: none"> <li>measure power using special instruments</li> </ul>	<ul style="list-style-type: none"> <li>determine the paths of projectiles from a series of photographs or diagrams</li> </ul>	<ul style="list-style-type: none"> <li>draw conclusions about forces in specific situations</li> </ul>	<ul style="list-style-type: none"> <li>investigate conversions between potential and kinetic energy</li> </ul>	<ul style="list-style-type: none"> <li>deduce relative movement in rotating systems</li> </ul>



PAPER H					
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KNOWLEDGE AREA	QUESTIONS MAY REQUIRE STUDENTS, FOR EXAMPLE, TO:				
EARTH & BEYOND	<ul style="list-style-type: none"> <li>measure geological structures using relative size of objects</li> </ul>	<ul style="list-style-type: none"> <li>interpret relative differences in spectral emission lines</li> </ul>	<ul style="list-style-type: none"> <li>classify stars based on brightness and magnitude</li> </ul>	<ul style="list-style-type: none"> <li>recognise problems associated with extraterrestrial investigations</li> </ul>	<ul style="list-style-type: none"> <li>explain atmospheric phenomena both on Earth and on other planets</li> </ul>
NATURAL & PROCESSED MATERIALS	<ul style="list-style-type: none"> <li>observe differences in solvents</li> </ul>	<ul style="list-style-type: none"> <li>understand the properties of acids and bases</li> </ul>	<ul style="list-style-type: none"> <li>identify the effects of alcohol on human functioning</li> </ul>	<ul style="list-style-type: none"> <li>understand the use of substances including catalysts in experiments</li> </ul>	<ul style="list-style-type: none"> <li>establish rules relating to isotopes</li> </ul>
LIFE & LIVING	<ul style="list-style-type: none"> <li>observe organ parts of living things</li> </ul>	<ul style="list-style-type: none"> <li>examine transverse sections of living and non-living things</li> </ul>	<ul style="list-style-type: none"> <li>extrapolate graphical information about growth rates of living things</li> </ul>	<ul style="list-style-type: none"> <li>test the function of specific organs and tissues in living things</li> </ul>	<ul style="list-style-type: none"> <li>classify species using non-traditional methods</li> </ul>
ENERGY & CHANGE	<ul style="list-style-type: none"> <li>record temperature using scales other than Celsius</li> </ul>	<ul style="list-style-type: none"> <li>identify the effects of electric currents on humans</li> </ul>	<ul style="list-style-type: none"> <li>predict the movement of a series of gears</li> </ul>	<ul style="list-style-type: none"> <li>assess the safety issues associated with experiments involving electricity</li> </ul>	<ul style="list-style-type: none"> <li>compare the different forces acting on a body in the air and in water</li> </ul>