## 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 lifecycle 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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Paper Introductory = Year 2
Paper A = Year 3
Paper B = Year 4
Paper C = Year 5
Paper D = Year 6

| PAPERA |  |  |  |  |  |
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| 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 |

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| PAPER B |  |  |  |  |  |
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| SKILL AREA | MEASURING \& OBSERVING | \|nterpreting data | PREDICTING/CONCLUDING FROM DATA | \|iNvestigating | REASONNG/PROBLEM <br> SOLIING |
| knowledee 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 river | identify equipment needed <br> for humans to go into space | understand how <br> sedimentary rocks form | investigate the effect of wind on objects | deduce aspects of Earth's <br> motion from diagram |
| NATURAL \& PROCESSED MATERIALS | observe differences between natural and synthetic materials | Understand faphas flelitig | $\begin{aligned} & \text { draw conclusions about } \\ & \text { physical properties } \\ & \text { of materials } \end{aligned}$ |  | evaluate the advantages design |
| LIFE \& LIving | -idenifit the human senses | Ise eeves toidisinguish beween animas | 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 |  | interpret simple changes in energy | predict the effect of differen forces applied to objects | investigate how sounds are made and used | duce the direction and speed of diagrams |

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| PAPER C |  |  |  |  |  |
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| SKILL AREA | MEASURING \& OBSERVING | \|INTERPRETING Data | PREDICTING/CONCLUDING FROM DATA | \|INVESTIGATING | REASONNG/PROBLEM SOLIING |
| knowlegeearea | Questions may require students to do all the above as well as, for example, the following: |  |  |  |  |
| EARTH \& BeYond |  | interpret information given | - predict the position of stars at different times of the nigh | investigate weather | deduce the position of <br> shadows during the day |
| NATURAL \& PROCESSED MATERIALS | - identify crystal structures of simple salts | identify pollution related <br> issues from graphical dat | examine differences and gases | analyse simple experiments performed with household material | (examine heate xpansion |
| LIFE \& LIving | measure living things using printed scales | use dichotomous keys to <br> classify living thing | identify trends in simple food webs | understand the function of controls in biological experiments |  |
| energy \% change | eamine simple eiruuis | interpet diag | abut |  | Simple electic |

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| 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 |

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| knowledearea |  |  |  |  |  |
| H8 EEYoNo | - measure the size of celestial bodies using ratio scales | cind | cily |  |  |
|  | identify building structures using diagrams <br> and drawings | interpret tables relating to organic and inorganic |  | identify correct laboratory equipment to use in experiments | identify sources of chemical pollution in aquatic |
| wns | Suse eninas |  |  | examine relationships between variables in biological experiments | determine the trophic position of living things in <br> food chains |
| ange |  |  |  | make predictions about reflected and refracted ray |  |

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| PAPER F |  |  |  |  |  |
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| knowledee area | Questions may require students to do all the abve as well as, for example, the fol |  |  |  |  |
| EARTH \& bevond | - examine and identify differences between sedimentary, metamorphic sedimentary, metam and igneous rocks | interpret diagrams rel to the hydrosphere, ithosphere and atmosphere | compare modelis ofthe solar | investigate advantages and disadvantages of renewable and non-renewable energy | understand the structur <br> of Ear |
| natural \& processed MATERIALS | observe the particle <br> model of matter | examine graphs relating to changes of liquid and gas) | draw conclusions about the properties of non-metals | examine variables associated with the production of common productior gases | determine the molecula structure of compounds and |
| LfF \& Living | - identify different parts of the cell | living and non living things based on structure and form | understand the function human body | investigate the role of organisms in ecosystem |  |
| energy a change | $\begin{aligned} & \text { observe transformation } \\ & \text { of energy } \end{aligned}$ | identily eneryy emisision difierees | $\underbrace{}_{\substack{\text { conclude how obiects may } \\ \text { be moved indirecty }}}$ | draw conclusions about <br> different mediums | deduce the velocity <br> moving objects |

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| PAPER G |  |  |  |  |  |
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| SKILL AREA | MEASURING \& ObSERVING | \|nterpreting data | PREDICTING/CONCLUDING FROM DATA | Investigating | $\begin{aligned} & \text { REASONING/PROBLEM } \\ & \text { SOLING } \end{aligned}$ |
| kNowLedee Area | Questions may require students to do all the abve as well as, for example, the fol |  |  |  |  |
| EARTH \& beyond | - measure the size of atmospheric phenomena such as cyclones | determine 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 <br> simple molecules | $\begin{aligned} & \text { establish the sequence } \\ & \text { in writing up scientific } \\ & \text { exneriments } \end{aligned}$ | determine the type of chemical reactions |
| Lfe \& Living | - identify and classify living things based on written descriptions | use data to identify pests in Australia | cind | apply methods of random sampling of living things in ecosystems | (ex examine exponenial soowh |
| Energy \% change | $\underset{\substack{\text { measure power ssing } \\ \text { specia insumensis }}}{\text { and }}$ | determine the paths of projectiles from a series of photographs or diagrams |  | investigate conversions kinetic energy | deacere erelive movement |

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| SKILL AREA | MEASURING \& OBSERVING | \|nterpreting data | PREDICTING/CONCLUDING FROM DATA | Investigating | REASONING/PROBLEM SOLIING |
| knowledee area | Questions may require students to do all the above as well as, for example, the following: |  |  |  |  |
| EARTH \& bevond | - measure geological <br> structures using relative  size of objects | interpret relative <br> differences in sp emission lines | classify stars based on brightness and magnitude | $\begin{aligned} & \text { recognise problems } \\ & \text { associated with } \\ & \text { extraterrestrial } \\ & \text { investigations } \end{aligned}$ | explain atmospheric phenomena both on Earth and on other plane |
| NATURAL \& PROCESSED MATERIALS | identify differences <br> in solvents | understand the properties of acids and bases | $\begin{aligned} & \text { identify the effects of } \\ & \text { alcohol on human } \\ & \text { functioning } \end{aligned}$ | $\begin{aligned} & \text { understand the use of } \\ & \text { substances including } \\ & \text { catalysts in experiments } \end{aligned}$ |  |
| Lffe \& Living | $\begin{aligned} & \text { identify organ parts of } \\ & \text { living things } \end{aligned}$ | $\begin{aligned} & \text { examine transverse } \\ & \text { sections of living and } \end{aligned}$ non-living things | $\begin{aligned} & \text { extrapolate graphical } \\ & \text { information about growth } \\ & \text { rates of living things } \end{aligned}$ | test the function of specific living things |  |
| energy \% change |  |  | $\pm \substack{\text { predict he movementofa } \\ \text { seies of cears }}$ | $\begin{aligned} & \text { assess the safety issues } \\ & \text { associated with experiments } \\ & \text { involving electricity } \end{aligned}$ | the differen <br> orces acting on a body <br> he air and in wate |

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| PAPER I |  |  |  |  |  |
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| SKLLL AREA | MEASURING \& OBSERVING | \|nterpreting data | PREDICTING/CONCLUDING FROMDATA | Investigating | REASONING/PROBLEM SOLIING |
| knowledee area | Questions may requirestudents to do all the above as well as, for example, the follow |  |  |  |  |
| EARTH \& beyond | - measure distances using planetary scales | understand the effect of <br> und <br> bood | examine evidence relating to the formation of the to the form | differentiate between <br> and precision in <br> experiments | examine effects of Earth and on other planet |
| NATURAL \& PROCESSED MATERIALS | $\begin{aligned} & \text { observe differences using } \\ & \text { planetary scales } \end{aligned}$ | use graphs related to melting points, boiling points, temperature and pressure | determine the implications liquid |  | use the law of constant proportion and |
| LIFE \& Living | $\begin{aligned} & \text { - observe differences } \\ & \text { between living things at the } \\ & \text { sub-species level } \end{aligned}$ | identify animals based on <br> dental information | estimate populations of living and non-living things in specific environments | critique experiments |  |
| Energy a change | - observe records showing the movement of Earth's magnetic poles magnetic poles | understand differences between renewable and non-renewable energy |  | understand the relationship between magnetic and electric fields | determine the amount different reactions |

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| PAPER J |  |  |  |  |  |
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| SKILL AREA | MEASURING \& OBSERVVIN | Interpreting data | PREDICTING/CONCLUDING FROM DATA | \|INVESTIGATING | $\begin{aligned} & \text { REASONNG/PROBLEM } \\ & \text { SOLING } \end{aligned}$ |
| knowlegeearea | Questions may require students to do all the above as well as, for example, the following: |  |  |  |  |
| EARTH \& bevond | - determine the age of geological structures from rock stratigraphy |  | $\cdots$ | hypothesise about the bodie | 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 gas physiology |  |
| LFE \& LLving | - measure microscopic organisms using nanometre scales | interpret complex lif history cycles of parasites and viruse | classify animals to sub <br> species leve | examine the ethics of the <br> of living subject <br> in experiment |  |
| Energy \& change | measure macroscopic energy changes such as earthquakes and as earthqua | identif gravitaional effects oftemem |  | (identif changesin eneray |  |

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