

Abercrombie Caves Stage 3	Climatic Graph	Calculating costs and charges	Problem Solving- various tasks	Using maps to record locations and track route	Calculating distance using scales on a map	Creating a key marking features of the natural environment	Identifying characteristics of vegetation types	Using a compass to determine points of direction	Physical features of a cave environment	Calculating area and perimeter	Identification of flora and fauna	Investigation of local hazards including flood, fire and snow	Creating a field quadrant to record data	History of the Abercrombie Caves	Panning in local creek system and impact of prospecting	Conservation Strategies
SCIENCE: Values and Attitudes, Skills, Knowledge and Understanding																
Living things have structural features and adaptations that help them to survive in their <u>environment</u> LIVING WORLD							✓		✓		✓		✓			✓
The growth and survival of living things are affected by the physical conditions of their <u>environment</u> LIVING WORLD						✓	✓		✓		✓	✓			✓	✓
Light from a source forms shadows and can be absorbed, reflected and refracted PHYSICAL WORLD									✓							
Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives PHYSICAL WORLD													✓	✓		✓
Scientific knowledge is used to inform personal and community decisions PHYSICAL WORLD											✓	✓	✓	✓	✓	✓
Sudden geological changes or extreme weather conditions can affect Earth's surface EARTH SCIENCE							✓		✓			✓		✓		✓
Important contributions to the advancement of science have been made by people from a range of cultures EARTH SCIENCE													✓			
Science involves testing predictions by gathering <u>data</u> and using <u>evidence</u> to develop explanations of events and phenomena WORKING SCIENTIFICALLY			✓													✓
With guidance, plan appropriate <u>investigation</u> methods to answer questions or solve problems WORKING SCIENTIFICALLY			✓				✓				✓	✓	✓			
Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in <u>data</u> using <u>digital technologies</u> as appropriate WORKING SCIENTIFICALLY	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓		✓	✓

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GEOGRAPHY: Geographical Concepts, Geographical Inquiry Skills, Geographical Tools																
The influence people have on the human <u>characteristics</u> of places and the management of spaces within them FACTORS THAT SHAPE PLACES			✓				✓		✓	✓	✓	✓	✓	✓	✓	✓
The impact of bushfires or floods on environments and communities, and how people can respond FACTORS THAT SHAPE PLACES									✓			✓				✓
Collect and record relevant geographical <u>data</u> and information, using ethical protocols, from primary and <u>secondary sources</u> GEOGRAPHICAL SKILLS	✓		✓	✓	✓	✓	✓		✓		✓	✓	✓		✓	
Evaluate sources for their usefulness and represent <u>data</u> in different forms, for example, maps, plans, graphs, tables, sketches and diagrams GEOGRAPHICAL SKILLS			✓	✓					✓					✓		
Represent the location and <u>features</u> of places and different types of geographical information by constructing large-scale and small-scale maps that conform to cartographic conventions GEOGRAPHICAL SKILLS	✓			✓ ✓		✓	✓		✓		✓	✓				✓
Interpret geographical <u>data</u> and other information, using digital and <u>spatial technologies</u> as appropriate, and identify spatial distributions, patterns and <u>trends</u> , and infer relationships to draw conclusions GEOGRAPHICAL SKILLS	✓						✓		✓		✓					✓
Present findings and ideas in a range of communication forms, for example, written, oral, graphic, tabular, visual and maps; using geographical terminology and digital technologies as appropriate GEOGRAPHICAL SKILLS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reflect on their learning to propose individual and collective action in response to a contemporary geographical challenge and describe the expected effects of their proposal on different groups of people GEOGRAPHICAL SKILLS												✓			✓	✓

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Maths: Working Mathematically, Number and Algebra, Measurement and Geometry, Statistics and Probability																
Choose appropriate units of measurement for length, area, <u>volume</u> , <u>capacity</u> and mass(LENGTH 1 & AREA 1	✓		✓	✓	✓					✓						
Calculate the <u>perimeter</u> and area of rectangles using familiar metric units AREA 1			✓							✓			✓			
Use a grid reference system to describe locations. Describe routes using landmarks and directional language POSITION				✓		✓										
Pose questions and collect categorical or <u>numerical data</u> by observation or survey DATA 1							✓				✓	✓				✓
Construct displays, including column graphs, dot plots and tables, appropriate for <u>data</u> type, with and without the use of digital technologies DATA 1	✓	✓	✓										✓		✓	
Describe and interpret different <u>data</u> sets in context		✓	✓													
Create simple financial plans ADDITION AND SUBTRACTION 1		✓	✓													
Use equivalent <u>number</u> sentences involving <u>multiplication</u> and division to find unknown quantities PATTERNS AND ALGEBRA		✓	✓		✓					✓						
Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers (ACMNA123) ADDITION & SUBTRACTION 2 MULTIPLICATION & DIVISION 2		✓	✓							✓			✓			

Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies (ACMNA132) FRACTIONS AND DECIMALS 2		✓													
Convert between common metric units of length, mass and capacity (ACMMG136) LENGTH 2 / AREA 2			✓		✓				✓			✓			✓
Solve problems involving the comparison of lengths and areas using appropriate units (ACMMG137) LENGTH 2 / AREA 2			✓		✓				✓			✓			✓
Interpret and use timetables (ACMMG139) TIME 2		✓													

Further information to map against curriculum outcomes, for Stage 3 (Year 5-6 Cross Curricular)

The tours listed with relevant outcomes above focus on these key areas of the New NSW Syllabus.

Science Stage 3 - Content

Outcomes Covered In Excursions	Description
Working Scientifically	A student: › investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations ST3-4WS
Working Technologically	A student: › plans and implements a design process, selecting a range of tools, equipment, materials and techniques to produce solutions that address the design criteria and identified constraints ST3-5WT
Physical World	A student: › describes how scientific understanding about the sources, transfer and transformation of electricity is related to making decisions about its use ST3-6PW › uses scientific knowledge about the transfer of light to solve problems that directly affect people's lives ST3-7PW
Earth Science	A student: › describes how discoveries by people from different cultures and times have contributed to advancing scientific understanding of the solar system ST3-8ES › explains rapid change at the Earth's surface caused by natural events, using evidence provided by advances in technology and scientific understanding ST3-9ES
Living World	A student: › describes how structural features and other adaptations of living things help them to survive in their environment ST3-10LW › describes some physical conditions of the environment and how these affect the growth and survival of living things ST3-11LW

Science Stage 3 – Statement

By the end of Stage 3, students show informed attitudes to issues related to the current and future use and influence of science and technology. They are interested and willing to engage in local, national and global issues that are relevant to their lives and the maintenance of a sustainable future. They are able to discuss how science and technology directly affect people's lives and are used to solve problems.

Students initiate, use and apply the processes of *Working Scientifically* and *Working Technologically* with a greater level of independence. They are more self-reliant in undertaking a range of scientific investigations and design projects, and in collaboratively completing the tasks. Students select and safely use a variety of equipment, materials and resources identifying potential risks. They identify where improvements to their methods, techniques or research could enhance the quality of the information gathered. Students use a range of representations to present, document and communicate methods, findings and ideas, including tables, graphs, diagrams and multi-modal texts, using digital technologies where relevant.

When *Working Scientifically*, students follow instructions, pose questions for investigations, predict likely outcomes and demonstrate honesty and accuracy in collecting, recording and analysing data and information. In planning and conducting fair tests they are able to identify variables to be changed and measured, and check results by repeating observations and measurements. They construct tables and graphs to organise data and identify patterns. They use evidence to draw conclusions and develop explanations.

When *Working Technologically*, students plan and implement a design process to meet the needs and wants of users/audiences. They explore and define the design task, establishing design criteria and considering constraints when planning the process. Students select and apply appropriate methods to develop and generate ideas and apply established criteria to evaluate and modify them. They develop plans, specifications and production sequences to produce solutions for built environments, information and products. They evaluate their solutions using self and peer assessment, and identify the strengths and limitations of the process used.

As students continue to observe and investigate aspects of the *Natural Environment*, they explain how natural events cause rapid changes to the Earth's surface. They describe key features of the solar system and the contribution of people from a range of cultures over time to the advancement of science. Students explain everyday phenomena associated with the transfer of light and requirements for the transfer and transformation of electricity. They identify how energy from a variety of sources can be used to generate electricity and how science knowledge is used to inform personal and community decisions. Students describe how features of living things help them to survive in their environment and how the growth and survival of living things is affected by changes in the physical conditions of their environment.

Students identify the observable properties of solids, liquids and gases. They compare and classify different types of observable changes to materials, considering how their properties determine their use.

Within the *Made Environment* students explain how production systems are used to manufacture products. They explore changes that have occurred in the design of products over time and the social and environmental factors that influence the design of products. Students investigate how systems in built environments are designed to meet the needs of people, in response to social and environmental influences. They explain how systems can be used to transfer information and support communication, and how social influences impact on the design of a range of emerging information products.

Geography Stage 3 – Content

Outcomes covered

We have integrated areas from Geographical Concepts, Geographical Inquiry Skills and Geographical Tools.

FACTORS THAT SHAPE A PLACE

- Describes the diverse features and characteristics of places and environments GE3-1
- Explains interactions and connections between people, places and environments GE 3-2
- Compares and contrasts influences on the management of places and environments GE3-3
- Acquires, processes and communicates geographical information using geographical tools for inquiry GE3-4

KEY INQUIRY QUESTIONS

- How do people and environments influence one another?
- How do people influence places and the management of spaces within them?
- How can the impact of bushfires on people and places be reduced?

Geography Stage 3 – Statement

By the end of Stage 3, students describe the diverse characteristics of places in different locations across local and global scales. They explain interactions between people, places and environments and identify factors influencing interconnections. Students compare spatial distributions and patterns among phenomena. They explore how people respond to a geographical challenge and investigate reasons for differing perspectives.

Students develop geographical questions to frame an inquiry. They use a variety of strategies to locate, collect and record relevant data and information to answer inquiry questions. They represent data in different forms. Students interpret data and other information to identify and compare spatial distributions, patterns and trends, infer relationships and draw conclusions. They present findings and ideas using geographical terminology in a range of communication forms. They propose solutions, and may take action in response to a geographical challenge and describe the expected effects of their proposal.

Maths Stage 3 - Content

Outcomes Covered In Excursions	Description
Length 1	<p>A student:</p> <p>MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions</p> <p>MA3-3WM gives a valid reason for supporting one possible solution over another</p> <p>MA3-9MG selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length</p>
Area 1	<p>A student:</p> <p>MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions</p> <p>MA3-10MG selects and uses the appropriate unit to calculate areas, including areas of squares, rectangles and triangles</p>
Position	<p>A student:</p> <p>MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions</p> <p>MA3-17MG locates and describes position on maps using a grid-reference system</p>
Data 1	<p>A student:</p> <p>MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions</p> <p>MA3-3WM gives a valid reason for supporting one possible solution over another</p> <p>MA3-18SP uses appropriate methods to collect data and constructs, interprets and evaluates data displays, including dot plots, line graphs and two-way tables</p>
Patterns & Algebra 1	<p>A student:</p> <p>MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions</p> <p>MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations</p> <p>MA3-3WM gives a valid reason for supporting one possible solution over another</p> <p>MA3-8NA analyses and creates geometric and number patterns, constructs and completes number sentences, and locates points on the Cartesian plane</p>
Addition & Subtraction 1	<p>A student:</p> <p>MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions</p> <p>MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations</p> <p>MA3-3WM gives a valid reason for supporting one possible solution over another</p> <p>MA3-5NA selects and applies appropriate strategies for addition and subtraction with counting numbers of any size</p>

Maths Stage 3 – Statement

By the end of Stage 3, students ask questions and undertake investigations, selecting appropriate technological applications and problem-solving strategies to demonstrate fluency in mathematical techniques. They use mathematical terminology and some conventions, and they give valid reasons when comparing and selecting from possible solutions, making connections with existing knowledge and understanding.

Students select and apply appropriate mental, written or calculator strategies for the four operations and check the reasonableness of answers using estimation. They solve word problems and apply the order of operations to number sentences where required. Students identify factors and multiples and recognise the properties of prime, composite, square and triangular numbers. They connect fractions, decimals and percentages as different representations of the same value. Students compare, order and perform calculations with simple fractions, decimals and percentages and apply the four operations to money in real-life situations. Students record, describe and continue geometric and number patterns, and they find missing numbers in number sentences. They locate an ordered pair in any one of the four quadrants on the Cartesian plane.

Students select and use the appropriate unit to estimate, measure and calculate length, area, volume, capacity and mass. They make connections between capacity and volume, and solve problems involving length and area. Students use 24-hour time in real-life situations, construct and interpret timelines and use timetables. They convert between units of length, units of capacity and units of mass. They construct and classify three-dimensional objects and two-dimensional shapes, and compare and describe their features, including line and rotational symmetries. Students measure and construct angles, and find unknown angles in diagrams using known angle results. They use a grid-reference system to locate landmarks and describe routes using landmarks and directional language.

Students use appropriate data collection methods to interpret and analyse sets of data and construct a range of data displays. They assign probabilities as fractions, decimals or percentages in simple chance experiments.