EXAMPLE 2 YEAR 5 & 6 PRIMARY SCIENCE
ANTARCTICA UNIT

1. THE MAIN IDEA
God’s majestic creation of the unique Antarctic ecosystem requires us to have a special relationship and response to it.

2. BIBLICAL PERSPECTIVE
In our unit on Antarctica we will explore the marvellous work of our Creator, and be awed by the majestic beauty of the land, by the interdependence and harmonious relationships of the created world, and by the diversity and adaptation of its wildlife. We will see the way Antarctica’s cold adapted organisms have survived in their harsh environment; the interdependence of the food chain; and the natural adaptation that makes each species suited to life there. We will discover the place that Antarctica has as one of the two polar caps; its impact on global climate; how its ozone hole affects ultraviolet radiation levels and weather patterns; and that it stores 90% of the world’s ice and 70% of its fresh water. Just watching clips of the March of the Penguins, for example, in the rearing of chicks prompts us to wonder—at the amazing timing of nature, at the devotion of parents, and at the way creatures respond to the changing seasons of life.

We affirm that this is God’s world, He created it with a plan and purpose and He is sustaining it as He does the entire creation. We recognise that as God’s image bearers we’ve been created with a desire to know and understand our world, and so people have sought to explore it, Antarctica included. People have challenged themselves, sometimes with self-sacrificing heroism, to discover, understand, and ‘open up’ Antarctica to the rest of the world.

Some environmentalists would have us believe that Antarctica is like the ‘forbidden fruit’ that we must not touch for any reason at all for fear of the consequences. But we believe that God created Antarctica for a purpose and it is part of His plan, though we don’t understand exactly what that might be yet. We know that we are to act responsibly towards Antarctica, showing wisdom in our stewardship and acting in the land’s best interests. Yet, God gives us permission to use the land, as everywhere else, for His glory and purpose. There may be as yet undiscovered sea creatures holding great medicinal cures that await our discovery and responsible use. At the same time there is a place for some spaces to be established as special protection zones because of their unique beauty and value and because of the risks associated with human exploitation. Where does the created tension lie between these biblical guidelines of care and use?

People have only set foot in Antarctica since the 1820s when Russian explorers stood in wonder at the world’s fifth largest continent, nearly twice the size of Australia. Even now no one is permanently resident there. Only a small number of temporary scientific visitors based at national research stations come and go and a limited number of tourists visit during the summer months. Such restricted access and small amount of human contact has meant that there is little evidence of corruption (the fall) apart from this human interference. An interesting question is whether Antarctica is as God always intended it to be, up till the moment people arrived.

We can see the evidence of human impact on Antarctica, even without a permanent human population living there, in the pollution of the seas surrounding it; in the decline of species of fish due to over-fishing and exploitation of the seas; and in the break-up of the ice shelves due to global warming, to name a few examples. All of this has impacted on Antarctica with species like the albatross declining in number due to fishing practices, and the subsequent impact of the food chain when one species of sea life is decimated.

Although we are much more aware of human impact now, there is still the possibility that humans will continue to harm Antarctica by inappropriate research, by excessive tourism and potential environmental damage including oil spills from cruise ships or exploitive mining. The prohibitive costs of access, clean up and waste removal and the fact that so much is out of sight means there are risks of poor care. Close attention and mutual oversight is needed to ensure Antarctica is adequately protected from carelessness.

The Antarctic System Treaty ensures Antarctica is a natural reserve devoted to peace and science and through international cooperation bans, military activity and mineral mining. Christians would applaud this unique agreement of sharing not just the continent but also the various researches undertaken and the present suspension of national self-interest for the sake of greater global goals. This international agreement and cooperation is currently protecting Antarctica from many dangers. However, in the future it is possible that if valuable resources are discovered in Antarctica, this cooperation may vanish as competition for resources takes over.

3. THREADS
Caretaking Earth Students will be challenged to explore ways to act responsibly towards Antarctica, showing wisdom in our stewardship and acting in the land’s best interests. They can also explore how new discoveries from this land may benefit communities.

Pondering Creation Students will see the wonderful work of our Creator, and be awed by the majestic beauty of the land.

Discovering Patterns Students can explore and discover God’s patterns and designs in the way Antarctic creatures live in harmony with their surroundings and by the diversity and adaptation of its wildlife.

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### 4. ENDURING UNDERSTANDINGS
Students will:
- reflect on how much God loves His creation and has asked us to take care of it
- appreciate and be gobsmacked by the beauty and uniqueness of Antarctica
- be inspired to consider how their lifestyle affects the environment
- propose possible ways this land can be used or preserved in the future.

**Misunderstandings:**
- it is safe because it is so far away
- there aren’t enough people there to pollute the place.

### 5. ESSENTIAL QUESTIONS
- what is special about Antarctica?
- what is our relationship to nature?
- how can we explore and make use of the world God has given us, without spoiling it?
- what choices can Australia make in working and taking care of Antarctica?

### 6A. KNOWLEDGE
Students will know:
- the location and physical features of Antarctica
- related vocabulary on Antarctica
- unique animal life and ecosystem
- exploration history
- what it is like to live and work in Antarctica today
- the issues that threaten Antarctica’s future

### 6B. SKILLS
Students will be able to:
- read and make maps
- assess impact on the food chain due to human activities
- compare explorers, and past and present experiences
- pose questions leading to research
- read, highlight and take notes to show relevancy
- critique an issue from different perspectives and formulate an opinion

### 7. PRESCRIBED CURRICULUM
**Science understanding**

**Level 5**
- living things have structural features and adaptations that help them to survive in their environment (ACSSU043)

**Level 6**
- the growth and survival of living things are affected by the physical conditions of their environment (ACSSU094)
- sudden geological changes or extreme weather conditions can affect Earth’s surface (ACSSU096)
- science as human endeavour (Levels 5 & 6)
- science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena (ACSHE098)
- scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples’ lives (ACSHE100)
- scientific knowledge is used to inform personal and community decisions (ACSHE220)

**Science skills (Level 5 & 6)**
- compare data with predictions and use as evidence in developing explanations (ACSIS221)
- with guidance, plan appropriate investigation methods to answer questions or solve problems (ACSIS103)
- communicate ideas, explanations and processes in a variety of ways, including multi-modal texts (ACSIS093)