TARGET **100**
100 initiatives to deliver sustainable
cattle and sheep farming by 2020.
www.target100.com.au

LESSON OVERVIEW

In this lesson students will gain an understanding of Australia's population growth and the impact this increasing figure has on our resources. Students will define sustainability as it relates to farming and how it impacts our land, water, communities and the economy. They will interpret an Australian climate map and make connections between climate and animal breeds. Students will understand how farmers select animals based on their suitability through behavioural and structural adaptations and discover how technology is aiding farmers to have more sustainable and efficient farms.

AIMS AND OBJECTIVES

Upon completion of this lesson students will demonstrate an understanding of:

- The need to sustain Australia's resources to provide for our growing population
- What sustainability means in relation to farming
- How to interpret a climate map and discover how animal breeds can be suited to different climates

Key Learning Area	Year Level	Code/s	General Capabilities	Cross Curriculum Priorities	Curriculum Connections
Science	5 6	ACSSU043 ACSHE083 ACSSU094 ACSHE100	Critical and Creative Thinking Literacy Information and Communication Technology	Sustainability Asia and Australia's Engagement with Asia	Geography

STRAND CONTENT DESCRIPTION/S:

Year 5
ACSSU043 - Living things have structural features and adaptations that help them to survive in their environment

ACSHE083 - Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives

Year 6
ACSSU094 - The growth and survival of living things are affected by the physical conditions of their environment

ACSHE100 - Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives

Key Learning Area	Year Level	Code/s	General Capabilities	Cross Curriculum Priorities	Curriculum Connections
Economics and Business	5	ACHEK002	Critical and Creative Thinking Ethical Understanding	Sustainability	English

STRAND CONTENT DESCRIPTION/S:

Year 5
ACHEK002 - Types of resources (natural, human, capital) and the ways societies use them in order to satisfy the needs and wants of present and future generations

ScOT CATALOGUE TERMS

Animal behavior, adaptation (evolution), technologies, lifestyles, growth (animals), habitats, resources

LANGUAGE/VOCABULARY

Natural resources, sustainability, biodiversity, cattle, population growth, climate, profitable

RESOURCES/MATERIALS

Interactive whiteboard and video conferencing equipment

HIGHER ORDER THINKING SKILLS

Theory: Bloom's Taxonomy

Levels Addressed:

✓ 1. **Knowledge – Exhibits memory of previously learned material by recalling fundamental facts, terms, basic concepts and answers about the selection.**

✓ 2. **Comprehension – Demonstrate understanding of facts and ideas by organising, comparing, translating, interpreting, giving descriptors and stating main ideas.**

✓ 3. **Application – Solve problems in new situations by applying acquired knowledge, facts, techniques and rules in a different, or new way.**

✓ 4. **Analysis – Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalisations.**

5.   Synthesis – Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.

6.   Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.

LESSON INTRODUCTION

1.   Using the interactive whiteboard, conduct the **pre-lesson pop quiz**.

2.   Introduce the Future Foods topic to the class by explaining that the world's population is growing. It currently stands at 7 billion people and is predicted to reach 9 billion within the next 35 years. Australia's population in currently 23 million and is predicted to be 37 million by 2050. Pose the question 'What are some issues that we might need to consider for the world's growing population?'

3.   Elaborate on student responses by asking the following probing questions:

   •   How will we feed the growing population?

   •   Where will the food supply come from?

   •   What will happen to our natural resources as the population increases?

   •   What other implications should we be concerned about and prepare for?

   Explain to students that these are some of the issues facing Aussie farmers which is why it is so important that they work together with scientists in developing plans to manage and improve farming methods, land and water conditions.

4.   Display the **sustainability slide** on the interactive whiteboard and discuss what students think they know about the meaning of sustainability. Click the word to reveal the definition and discuss how it relates to the issues displayed on the slide. Explain that sustainability means to support the needs of the present without compromising the ability of future generations to support their needs.

MAIN BODY OF TEACHING

5.   Reiterate to the class that there are many factors to consider when building and managing sustainable farms. By understanding the environment farmers look after the land, preserve resources, ensure animal welfare as well as run a profitable business. Ask students to suggest ways that farmers might do each of these things.

6.   Using the interactive whiteboard, display the **Climate map of Australia** and ask students to interpret the information. Explain that farmers have learned that they need to work with the land and develop farming practices that suit the environments they are in. As illustrated on the climate map, Australia has hot and dry areas, as well as hot and wet areas. Knowledge of which animals are suited to each climate helps farmers to choose breeds of cattle, sheep or goats that best suit each farm. This in turn is more sustainable for the animals and the land. Click on the areas shown to display the cattle and sheep breeds best suited to those areas.

7.   Display the **Animal Adaptation slide** on the interactive whiteboard. Ask students to click on each animal to display the behavioural and structural adaptations of each.

8.   Explain to the class that it is important to keep farms profitable so their produce is affordable for us to buy. Therefore, farmers are always seeking practices that are more efficient. Farmers look for new technology, new information and new methods to improve their farms. Play the video **https://www.youtube.com/watch?v=pdISOUfd4fo** for students to view and ask them to take notes on the different technology and farming practices that the farmers use to keep their farms sustainable. Ask students to share their thoughts with the class.

9.   Launch the **Future Farm** challenge for students to play. They must consider sustainability, profitability and animal welfare in order to complete the challenge.

CONCLUSION

10.   Conduct the post-lesson pop quiz using the interactive whiteboard.