**Design Thinking Challenge: Solving a Challenge in the Primary Sector**

**Learning Outcomes:**

* Understand the challenges in a specific primary sector, such as labour shortages, resource use, waste, and quality control
* Develop problem-solving skills using technology
* Learn and apply the design thinking process
* Present and communicate your ideas effectively

Step 1: Empathy Phase - Understand the Problem

* Discussion: Start by learning about a specific challenge in a primary sector, such as farming, fishing, forestry, or horticulture. Research issues like labour shortages, resource use, waste management, animal and plant health, quality control, and how data is managed in these industries. Understand how these problems affect productivity, the environment, and the people working in the sector.
* Interviews: Imagine talking to people who work in the industry, like farmers, fishers, foresters, or orchardists, sports turf managers. What are their main concerns? What challenges do they face in producing and maintaining a quality product or managing resources?
* Observation: Watch videos or read articles that show how these sectors operate and the difficulties they face. How do you think technology can help solve these problems and improve resources use, productivity and sustainability in the industry?

Step 2: Define Phase - The Problem Statement

* Brainstorm: Based on your research, think about the main challenge. A good problem statement could be something like:
“How can we use technology to help the primary sector manage resources more efficiently, reduce waste, improve quality control, and address labour shortages, while still being profitable?”
* Make It Personal: Why is this issue important to you? How does it affect your production system, employees, community and the environment?

Step 3: Ideate Phase - Brainstorm Solutions

* Idea Generation: Think of as many ideas as you can to help solve these challenges. Some possible solutions could include:
	+ Tracking Technology: Can we use GPS, sensors, or drones to monitor crops, livestock, or resources more effectively, reducing waste and improving efficiency?
	+ Sustainability Apps: Could we design an app that helps people working in the sector manage resources, track quality, or reduce waste more easily?
	+ Artificial Intelligence (AI): Could AI help predict resource needs, plan for labour shortages, or improve quality control by analysing data from the field?
	+ Automation and Robotics: Can we develop robots or automated tools to help with tasks that are hard to fill due to labour shortages, such as harvesting or packing?
	+ Data Management Tools: Could we create tools that help farmers or employees track and analyse data on crops, animals, or products, improving decision-making and productivity?
* Sketch Your Ideas: Draw your ideas! Use simple diagrams or flowcharts to show how your solution could work in real life.

Step 4: Prototype Phase - Build a Simple Model

* Create Your Prototype: Using materials like paper, cardboard, or digital tools, create a simple prototype of your solution. This could be a model, a diagram, or a basic version of an app or tool.
* Show How It Works: Make sure your prototype clearly shows how your solution solves the problem. For example, if you created an app, how would it help people manage resources or improve quality control?

Step 5: Test Phase - Get Feedback

* Test Your Prototype: Present your solution to classmates, teachers, or family members. Ask for feedback – what do they like about it? What would they change or improve?
* Revise: Based on the feedback, make changes or improvements to your prototype.

Final Presentation

* Present Your Solution: At the end of the challenge, present your idea to others. Explain the problem, your solution, how it works, and how it can help solve the challenges in the primary sector, like managing resources, improving quality control, or addressing labour shortages.
* Reflection: Discuss what you learned during the activity. What surprised you the most about the challenges? How did the problems affect the productivity and environment? What was the hardest part of designing your solution?