

Module 5: Innovate

The second microgreen trial should be almost all grown up. Use data to investigate which microgreen trial worked better, and how the growing conditions affected this result. Students will also bring their farm of the future design to life by continuing with the 4 D design process and creating a model.

Use this overview as a reference as you go through Module 5 in the student Learning Hub with your class.

Week 5: 2-3 hours

Activity sequence

Lab 5.1: Data dig 2.0

Lab 5.2: Develop your farm of the future

Trial trivia

Module outcomes

- Evaluate your two trial outcomes by analysing and comparing data
- Conclude which microgreen trial worked better and why
- Develop your farm of the future

Resources

From your plant kit:

- Lab book (1 per rōpū of 4)

School to supply:

- Lab 5.2: Develop your farm of the future resources

Recycled materials to create farm of the future model. This could include:

- Cardboard
- Kitchen rolls
- Coloured paper
- Pipe cleaners
- Recyclable plastic
- Classroom resources including scissors, hot glue gun, tape, ruler, decorative pens

Print:

- Trial trivia (1 per quizmaster)

Activity overview

Lab 5.1: Data dig 2.0

Form a conclusion on which trial worked better and why through data analysis.

What students will do

Analyse the data they've collected from trial two in their rōpū.

Calculate the **range** of their quantitative data sets, **plot a line graph**, and find **correlations** between their quantitative and qualitative data sets.

They'll compare these results to trial one and form a conclusion on which trial worked better and why.

Teacher role

Support rōpū to analyse their data.

Help students understand why it's useful to compare data to form a conclusion.

Ambassador role

Circulate each rōpū and help them analyse their data sets. Give real life examples of ways to present conclusions based on how you do this in your role.

Discuss the conclusions formed by each rōpū.

Ask: *How did you arrive at that conclusion? What does each set of data show?*

Lab 5.2: Develop your farm of the future

Make a farm of the future model to help explain students' STEM solutions to the challenge question.

Collaborate as a rōpū to build a model of their farm of the future using their designs from Lab 4.4.

Each rōpū will decide whether they'll build a digital model or a physical model using recyclable material.

Encourage participation and teamwork amongst each rōpū.

Ensure students are thinking about the features of their models and how they solve the challenge question.

Help students to build their models.

Help students develop their farm design. Share ways you have modelled your ideas in your role and what the benefit is.

Trial trivia

Tests students understanding of key concepts using a quickfire quiz.

Compete as a rōpū of four.

Choose a noise to make when they know the answer.

Review students' knowledge of key concepts.

Add extra questions to quiz to extend learning if you'd like.

As the quiz master, use the trial trivia sheet to ask the rōpū quick-fire questions.

Have fun while encouraging fair play and respect.

Remember: If you are choosing to enjoy shared lunch in the next module, remind students to bring their carbon friendly lunches. You may choose any theme for the shared lunch.