I wonder how to grow food sustainably?

Wonder Project

Plant Challenge

The Wonder Project is Engineering New Zealand's free programme for schools, designed to get young Kiwis excited about science, technology, engineering and maths (STEM).

The Wonder Project is a series of project-based hands-on programmes that knit seamlessly into the New Zealand school curriculum. They're designed to spark wonder and awe in young Kiwis from Year 5–13 and get them excited about a future STEM career.

Plant Challenge

Level 4, Year 7–8
Term 4

Let's grow! Students work together to experiment, test and build a microgreen farm of the future. They'll learn what plants need to grow, build a hydroponic grow house and use technology to measure their success.

engineering new zealand
te ao rangahau

POWERED BY CallaghanInnovation
New Zealand's Innovation Agency

Plant Challenge

Operating in Term 4 each year, the Plant Challenge provides scaffolded learning aligned to Level 4 of the New Zealand school curriculum. The challenge takes around 1–2 hours per week for 6–8 weeks to complete.

Plant science

Hydroponics

Teamwork

Sustainable food growth

Design thinking

What we offer schools

- Online training on core STEM principles
- Student learning material and activities
- Detailed lesson plans and teaching guides
- Where possible, support from a volunteer STEM professional
- Free plant kit with all the gear
- Online community of teachers and ambassadors

Become a wonder school today at
wonderproject.nz

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Plant Challenge modules

Module 1

Get ready for the Plant Challenge, meet your Wonder Project Ambassador, and find out what it takes to grow your sustainable farm of the future.

Module 2

Observe and explore the environmental conditions plants need to thrive, and plant the first of two microgreen trials.

Module 3

Problem solve and improve microgreen harvests through building a grow house and adding nutrients.

Module 4

Get ready for the Plant Analyse trial data to develop a successful production system through iteration.

Module 5

Follow an engineering design process to design and create an innovative farm of the future.

Module 6

Explore sustainable food production practices, and celebrate and share your Plant Challenge journey.

Achievement objectives

Teachers can also make wider curriculum links to other achievement objectives depending on student level and individual learning programmes.

Achievement objectives	Students will	Curriculum level	Year level
Science: Nature of science	Ask questions, explore simple models, and carry out appropriate investigations to develop simple explanations around how food can be grown sustainably.	4	7–9
Science: Living world	Think critically about the life processes of microgreens and how they respond to both natural and human-induced environmental changes.	4	7–9
Technology: Nature of technology	Explore how innovations in technology have improved the way we grow food – now and in the future.	4	7–9
Mathematics and statisticians: Numbers and algebra	Use mathematical thinking to explore different ways of solving problems during the production of microgreens.	4	7–9

I wonder how we can ignite creativity in young Kiwis?

Rocket Challenge

Level 3, Year 5–6
Term 2

Houston, we have lift off! Students blast off into STEM by designing, building and launching a water rocket. They'll learn about Newton's laws, the engineering design process, and working as a team.

Power Challenge

Level 4, Year 7–8
Term 3

Power up! Students design and build a wind turbine and work as a team to light up their town of the future. Along the way they discover the amazing phenomena of electricity and renewable energy.

Plant Challenge

Level 4, Year 7–8
Term 4

Let's grow! Students work together to experiment, test and build a microgreen farm of the future. They'll learn what plants need to grow, build a hydroponic grow house and use technology to measure their success.

STEM Careers

Year 7–13
Year Round

The future is bright! Students are inspired to keep taking STEM subjects, and given a taste of the real world with industry visits and motivating career talks from STEM professionals.

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