

Teacher Resource

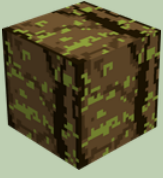


DISCOVER FORESTRY THROUGH MINECRAFT

MINECRAFT BUILD CHALLENGE OVERVIEW



Challenges	Focus	Suggested Visuals	NZC Links
Sapling Station World	Choosing the right trees for the right place; planting different forest types	Minecraft planting scene; diagrams of tree species	Technology: Technological Practice & Knowledge; Science: Living World; Maths: Measurement & Data
Timber!!! World	Harvest methods; preparing logs for different uses	Minecraft harvesting scene; infographic of harvest process	Technology: Technological Practice; Maths: Measurement, Number, Algebra
Buzz Zone World	Processing logs into products; understanding milling	Minecraft sawmill scene; photo of real-world sawmill	Technology: Technological Practice; Maths: Measurement & Data; Science: Materials
Nailed It World	Using wood in construction; environmental benefits	Minecraft building projects; comparison with concrete/steel	Science: Materials; Technology: Technological Knowledge; Social Sciences: Place & Environment



INTRODUCTION / CONTEXT

Forestry and wood processing are major contributors to New Zealand's regional economies and overall wealth.

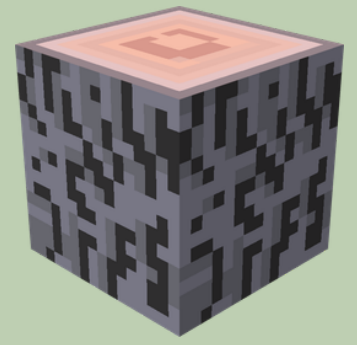
They offer diverse career opportunities—from working in forests, sawmills, or processing plants, to roles in logistics, marketing, management, and research and development.

Purpose of this guide:

- Help students understand the fundamentals of growing, processing, and using trees and wood.
- Introduce students to career opportunities in forestry and wood-related industries.
- Support teachers with cross-curricular learning, either in Minecraft or as stand-alone activities.



NEW ZEALAND'S WOOD PROCESSING INDUSTRY - QUICK SNAPSHOT



Timber at a Glance

- Forests: 1.79 million hectares of production forest
- Main Species: Radiata pine (91%)
- Annual Harvest: 32.7 million m³

Products We Make

- High-Grade Timber: Construction, furniture
- Industrial Timber: Pallets, packaging
- Other Products: Sawn lumber, plywood, MDF, pulp, paper
- Growth Areas: Engineered wood products, mass timber construction



NEW ZEALAND'S WOOD PROCESSING INDUSTRY

Economic Impact

- **Exports: \$3.2 billion/year**
- **Domestic Sales: \$1.5 billion/year**
- **Jobs: 35,000–40,000 across production, processing, support**
- **Trend: From log exports → high-value, onshore processing**

Environmental Highlights

- **Long-Lived Products: 77% of domestic wood processing**
- **Carbon Mitigation: 8 million tonnes CO₂ annually**
- **Energy Use: 79% of process heat from renewable wood fuels**
- **Focus: Reduce natural gas use & environmental impact**



NEW ZEALAND'S WOOD PROCESSING INDUSTRY

Key Organisations

- **WPMA:** Industry advocacy & support
- **Te Uru Rākau:** Forestry policy oversight
- **Scion:** Forest science research
- **EECA:** Energy efficiency guidance

Did You Know?

- **Data is compiled by MPI from surveys of ~125 mills**
- **Most processing activities require resource consents**

Bottom Line: Timber is more than trees—it's building materials, innovation, exports, jobs, and a sustainable future.



WOOD PROCESSING IN AOTEAROA NEW ZEALAND

From Native Forests to Modern Wood Processing in New Zealand

Before European Settlement

- Over 80% of Aotearoa New Zealand was covered in native forests, bush, and shrublands.
- Māori used native timbers like totara to make waka (canoes), tools, weapons, carved posts, and building structures. They still do!
- forests provided timber, shelter, food, and supported rich biodiversity.

1800s – Early 1900s: Land Clearing & Early Settlement

- Large areas of native forest were cleared to make way for towns, farmland, and infrastructure.
- Native timber was widely used for houses, farm buildings, fencing, and bridges.
- This period laid the foundation for New Zealand's growing reliance on wood as a key resource.

1913: Native Forests Under Threat

- Rapid clearing put some native tree species at risk of extinction.
- Restrictions on exporting native timber were introduced to protect remaining forests.



WOOD PROCESSING

Shift to Plantation Forestry

- To meet timber demand while protecting native forests, New Zealand began planting production forests, mostly radiata pine.
- Today, the 1.79 million hectares of planted forest supply wood for construction, furniture, panels, pulp, and paper.
- Modern processing focuses on value-added products, engineered wood, and sustainable, low-carbon production—a direct evolution from historical practices.

Bottom Line:

New Zealand's wood industry has evolved from clearing native forests to growing sustainable plantation forests, supporting jobs, exports, and eco-friendly building, while reducing pressure on native biodiversity.

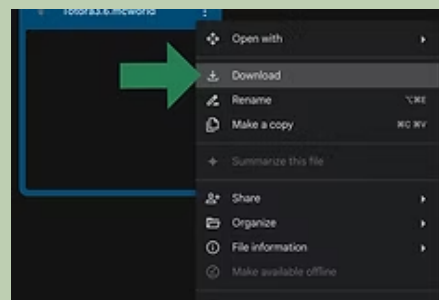


HOW TO USE THESE RESOURCES

- If you don't have or have an old version of Minecraft, please download the latest version:
- Follow the instructions below to download the world. Please note that downloading Minecraft World can be different depending on your operating system and device.
- Take a look at the troubleshoot page if you get stuck. <https://www.sowtheseed.org.nz/troubleshooting>

Download Mātiki Minecraft World

- Click on the Minecraft World image to download the world.



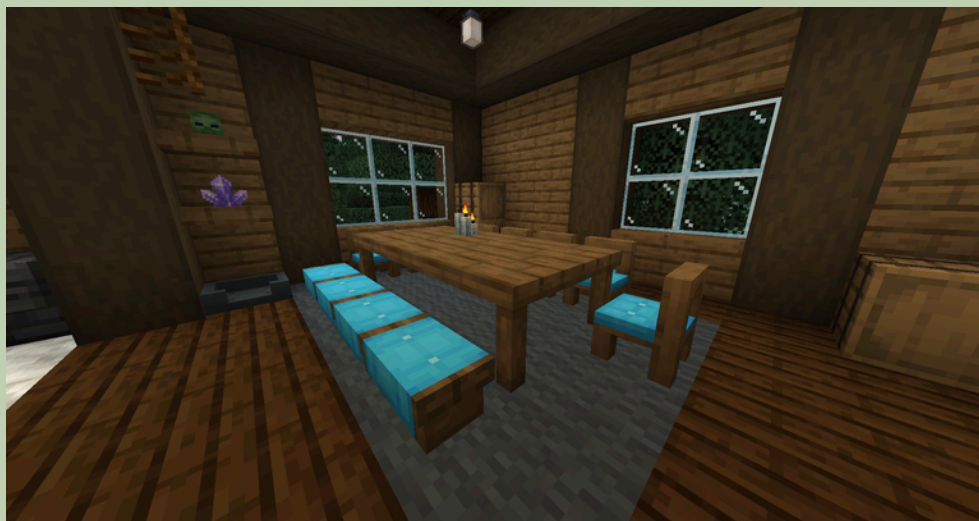
FIND THE FILE IN YOUR FILE EXPLORER OR FINDER
DOWNLOADS FOLDER AND DOUBLE CLICK TO OPEN IN
MINECRAFT.



HOW TO USE THESE RESOURCES

- **Designed for Levels 3 to 5 of the New Zealand Curriculum.**
- **Feel Free to modify activities to suit other levels**
- **Can be used with Minecraft Forestry World or as offline classroom activities.**
- **Encourage cross-curricular integration: Science, Technology, Maths, English, and Social Sciences.**
- **Activities can be adapted for different learning levels and timeframes.**

Tip for teachers: Begin with exploration, then guide students through problem-solving and reflection activities.



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CHALLENGE 1 – SAPLING STATION WORLD

- Fundamentals of choosing right tree, right place, right purpose.
- Types of forestry plantings: production forests, erosion control, waterway protection.
- Learning Outcome: Students design sustainable forestry layouts considering environment and purpose.
- Activity Idea: Plant a “virtual forest” in Minecraft, then calculate tree density, spacing, and growth timelines
- NZC Links: Science (Ecology), Technology, Maths (Measurement, Data)



CHALLENGE 2 – **TIMBER!!!**

WORLD

- Two harvesting methods: selective vs. clear-fell.
- Preparing logs for domestic or export markets.
- Learning Outcome: Students understand how harvesting method affects environment and economy.
- Activity Idea: Students plan a harvest and calculate potential yields and economic outcomes.
- NZC Links: Technology, Maths, Social Sciences



CHALLENGE 3 – BUZZ! ZONE WORLD

- Basics of processing logs into usable products.
- How sawmills contribute to building materials supply.
- Learning Outcome: Students learn the transformation from raw log to finished product.
- Activity Idea: Students design a “Minecraft sawmill” and track logs to products, including volume calculations.
- NZC Links: Technology, Science (Materials), Maths



CHALLENGE 4- NAILED IT! WORLD

- Using wood in construction projects.
- Environmental benefits of wood vs. other materials.
- Learning Outcome: Students understand sustainable building practices and material selection.
- Activity Idea: Students design a Minecraft building using different wood types and calculate environmental impact.
- NZC Links: Technology, Science, Social Sciences



CROSS-CURRICULAR CONNECTIONS

- Science: Ecology, plant growth, environmental impacts
- Technology: Design, resource management, forestry engineering
- Mathematics: Measurement, volume, data analysis, budgeting
- English: Writing, presenting, persuasive arguments
- Social Sciences: Human-environment interaction, economics, sustainability



QUESTIONS FOR TEACHERS

- How might students use Minecraft Estate Forestry World to explore the balance between economic gain and environmental sustainability, linking Science and Social Sciences?
- How could activities in the virtual forest integrate mathematical reasoning, scientific inquiry, and technological problem-solving, while also fostering reflection and communication skills?
- Tip: Use these questions as discussion prompts or reflection starters for teachers and students.



Further Resources / References

NZ Curriculum documents: nzcurriculum.tki.org.nz

New Zealand Forest Industry Facts: nzforestry.com

Minecraft Education Edition guides: education.minecraft.net

Forestry careers: careers.govt.nz



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