Extension Plan

Build your own Dairy Farm

Grade: 1-4 | Subject: Science & Technology | Duration: 30-60 Minutes



Dairycraft Overview

Learning Objectives

This Minecraft world supports the following main achievement objectives:

- Teach students about the versatility of milk, as well as concepts such as states of matter and chemical/physical changes.
- Teach students about the nutritional benefits of milk.
- Teach students about life on a working farm, career options associated with dairy farming, and the layout and machinery used in modern farms.
- Teach students about waste management and renewable energy production on dairy farms.
- Teach students about how technology is transforming dairy farming.
- Teach students about the relationship between crop farming and milk production.

How to Use Dairycraft

Dairycraft is a fully automated Minecraft educational world, so there is no need for teacher input once students are in-game. Additional teacher input or guidance may be beneficial for students below the set lesson grades.

- Dairycraft has been designed as a single-player educational game. When completing most lessons, extensions, and sub-activities, players should be in their own Minecraft world.
- Dairycraft can function on any device compatible with Minecraft: Education Edition.
- For collaborative play, students can be grouped into teams to complete the major extension task: building their own farm based on the knowledge they have learned.
- If you are new to Minecraft: Education Edition, the '[Support Center]' on the Education Edition website provides all the information you will need to get started.

Activities for Students

Dairycraft contains six main activities for students, each of which can be played independently of the others. It will benefit the student to have completed Lesson 2 before proceeding with other lessons, in order to have a basic understanding of the farm's layout. Each lesson has an extension task, and after all six lessons are completed there is one major

extension activity in which students are encouraged to build their own farm using the information they have learned from the lessons.

At points in the game, students may be given external links to videos that explain certain processes or concepts in more detail. Otherwise, everything the student needs to learn and interact with is contained within the game.

Dairycraft Map Layout



CrackedCubes

Extension: Overview

This Minecraft-based extension provides an engaging way for students to work on their own farm based on the knowledge that they have learned completing lessons 1-6. Designed as an optional task, it is open-ended and would be suitable as a homework task or group activity.

Players must design and build their own farm on the large build plot in the bottom left-hand corner of the farm map (see in-game). A skeleton farm has been provided, to make the task quicker and easier for the player, alongside additional materials to help students plan and organise their farm. This can be removed, with the player able to (when interacting with the NPC for the extension) clear the plot and start from scratch.

Learning Objectives

By the end of this lesson, students will be able to:

- Application of knowledge learned in lessons 1-6 to design and construct their own function farm within the Minecraft environment.
- Create a structured plan for their farm, demonstrating an ability to organise tasks and resources effectively.
- Evaluate their own farm design by comparing it to the concepts learned in lessons 1-6 and identify areas of success and areas for improvement.

Overall Expectations

By the end of this lesson, students will be able to:

- Demonstrate creativity and by designing a farm layout that meets specific goals or reflects their unique creative vision.
- Develop problem-solving skills by organizing materials and overcoming challenges during the farm-building process.
- Students working in groups will enhance collaboration skills through shared planning and cooperative construction.

Specific Expectations

By the end of this lesson, students will be able to:

- Reaffirm their understanding of how a dairy farm in Ontario should operate and be planned out.

- Understanding should be reflected in how the farm is structured, such as building paths wide enough for farming vehicles, barns with cow comfort in mind, etc.
- Communicate ideas clearly and contribute (if made collaborative) equally to the project with other students.
- Think beyond the confines of the lessons and personalise their approach with additional research.

Student Expectations

Demonstrate the ability to design and build a functional farm that incorporates principles from lessons 1-6, applying knowledge of sustainable practices, resource management, farm planning, and digital skills while reflecting creativity, problem-solving, and an understanding of modern farming concepts.

Activity and Extension Task Overview

By the end of the lesson, students will have:

- Designed and built their own farm using principles and knowledge from lessons 1-6.
- Utilized the large build plot on the farm map, either enhancing the provided skeleton farm or starting from scratch.
- Planned and organized their farm layout using additional in-game materials for guidance.

Activity: Dairy Farm Exploration and Knowledge Test

The player will spawn outside the main farm build plot, opposite the biodigesters.

STEP 1 | Introduction

- Begin in front of the ‘build your own farm’ build plot. NPC ‘Kristin’ will welcome students and explain how the build challenge works.
- Players are told to return to chat with NPC ‘Kristin’ once they have completed their farm build.

STEP 2 | Build Challenge

- Students spend between 30 and 60 minutes working on building their own farm based on provided resources in Minecraft’s creative mode. They will be able to spawn their own cows, vehicles, and fill out the entire build to reflect their vision of a dairy farm.

- After completing their build, players will return to NPC ‘Kirstin’ in order to complete the whole extension task.

STEP 3 | Completion and Reward

- NPC ‘Kristin’ congratulates students for building their own farm in this extension task, and gives the player the lesson-specific trophy. The player will also be told that the blue variant of the small plane, in the airplane hangar next to the farmer’s market, has been unlocked and is now flyable.
- Students place their trophy in the spawn room trophy display cabinet for teacher verification (it is a showcase that they have completed the lesson in full).

Miscellaneous

If you are experiencing technical problems or bugs with this lesson, please report them directly through our website’s bug report form: crackedcubes.co.uk/report-a-bug.

For general information about Minecraft: Education Edition, including additional information on how to play and set up lessons, please head to the dedicated Minecraft Education support center: edusupport.minecraft.net/hc/en-us.