



The Crown Estate Sustainability Initiative

Meadow Quest lesson

Teacher guide

1

OVERVIEW

Thank you for downloading these resources to use with your students. By equipping your students with the knowledge and skills to understand biodiversity, nature recovery, and sustainability, you are empowering them with the tools to take positive action in their own communities, now and in their futures.

This lesson links to the Meadow Quest section in the Conservation Quest at Windsor Great Park.

Pupils will:

- Recall what they might find in a meadow.
- Consider why bees and other pollinating insects are important.
- Create a poster based on key jobs in meadow management.
- Understand the importance of protecting meadows and creating new habitats.

Throughout the lesson, you will find background information on each topic. **There is also a glossary of key terms at the end.**

To find out more about how to use these resources, watch our teacher video on the website.



OUTCOMES

Pupils will understand the importance of bees for ecosystems and how meadow management can help to protect biodiversity



SKILLS

Adaptability, creative thinking, teamwork, communication



VOCATIONS

Farmer, entomologist



RESOURCES

- Presentation slides
- Role description handouts



TIMINGS

We have included activities for your class that develop themes from the Minecraft worlds. They are sequenced to build on each other, but we encourage you to pick and choose the ones that will work best for your class and the time available. We have included approximate timings as a guide, but you may wish to spend longer on certain sections.

CONTENTS	TIME	PAGE
Introduction and gameplay	32 minutes	2
Starter activity – The importance of bees	5 minutes	3
Careers Activity – Farmer and entomologist	25 minutes	4-5
Reflection	5 minutes	5
Optional extension activity	15 minutes	6
Real world action		7
Glossary		8

Stats quoted in these lesson packs refer to the UK.



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Meadow Quest lesson

2

Introduction

 (2 minutes)

- Introduce pupils to the Conservation Quest at Windsor Great Park that they are about to explore. Explain that this world will highlight biodiversity, sustainability and ecology and how our decisions can impact this in the long term.
- In the Meadow Quest, players will learn about the environmental management of meadows to increase biodiversity. Their assignment is to help rotate the meadow fields by moving cattle and then restoring the fields with wildflower seed bombs.

Minecraft gameplay

 (30 minutes)

- When they launch the world, students will enter the lobby and meet Dotty the Dragonfly, their helpful guide. To take part in each challenge, students can visit the Windsor School from the estate office. In the school, there are four classrooms - and from each one, students can teleport instantly to a different challenge.
- For the purpose of this lesson, you may wish to direct students to teleport directly to the Meadow Quest but they can come back and explore the world in their own time too.
- Consider sharing the reflection questions below with your students before they explore the world, so that they can keep them in mind throughout and ahead of class discussion.



Reflecting on gameplay (Slide 2)

 (5 minutes)

- Facilitate a class discussion about the world, encouraging pupils to reflect on new knowledge gained, anything they found challenging, easy or interesting.
- To steer discussion, you could ask them:
 - Where is the world based?
 - What has happened so far?
 - What did you find about farm management?
 - Can you remember what an insect specialist is called?





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Meadow Quest lesson

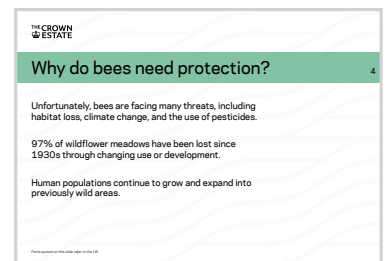
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Starter activity – The importance of bees (Slides 3-4)

 (5 minutes)

This starter activity will get your students thinking about why bees are important and the role they play in the ecosystem.

- Remind your students that they will have learnt about why pollinators like bees are so important.
- Can someone remember what they do?
- Share the slide with the list of reasons why bees are important.
- Next, consider the following statements:
 - 97% of wildflower meadows have been lost since the 1930s.
 - Human populations continue to grow and expand into previously wild areas.
- In pairs, ask students to write down why we must pay attention to these two statements.
- Think about Bomber the bee, what could this mean for native bees?



BACKGROUND INFORMATION

The loss of wild flower meadows

- A wildflower meadow in the UK can be home to a huge range of wildlife including wildflowers, fungi, bees, flies, beetles, spiders, moths, butterflies, reptiles, amphibians, small mammals, bats and birds.
- Nearly 7.5 million acres of wildflower meadows have been lost so far and they are still being destroyed. This may be through grazing or sileage, for example by resowing, and treatment with fertilisers and herbicides, or through loss to arable crops or development.
- Of those that do survive, around 75% occur in small fragments and remain vulnerable to destruction.

(Sources: Magnificent Meadows; Royal Parks; Kew Botanical Gardens)



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Meadow Quest lesson

4

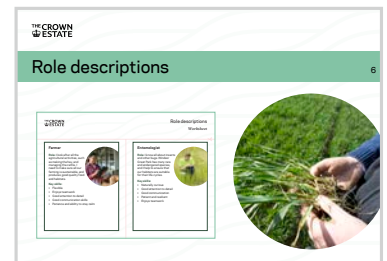
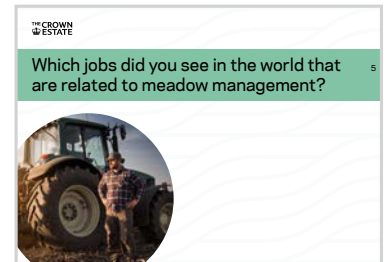
Careers activity – Meadow farmer and entomologist (Slides 5-8)



(25 minutes)

This activity will explore the jobs that Farmer Francis and Bomber the Entomologist do as part of the Meadow Quest part of the world.

- Ask students which jobs they remember from the world that are related to meadow management.
- Split the class into teams of four and hand each group one **role description handout**; Farmer and Entomologist
- Ask each group to create a poster about their job thinking about:
 - What do they do?
 - What is interesting about this job?
 - Which skills do they need?
 - Why is it important?
- Next, pair up an Entomologist and a Farmer group.
- Tell students their task is to try and to convince the other group to come and work for them in that job.
- Ask the opposite group to think of questions to ask.
- If they get questions they don't know the answer to, how could they find out (e.g. internet search, ask an adult)?



BACKGROUND INFORMATION

The Importance of bees

- Pollination:** Wild bees are one of the most important groups of pollinators on the planet. Pollination is the process by which plants reproduce, and bees play a crucial role in this process by carrying pollen from one flower to another. Without wild bees, many of the foods we eat, such as fruits, vegetables, and nuts, would not be able to grow.
- Biodiversity:** Bees are an important part of our planet's biodiversity (in fact, there are over 270 different bee species in the UK alone). They help to maintain the balance of ecosystems by pollinating plants and providing food for other animals. Without bees, many plants would not be able to reproduce, which would have a ripple effect throughout the entire food chain.
- Honey:** Honey Bees are kept by beekeepers for producing honey, which is not only delicious but also has many health benefits. Honey is used in a variety of foods and drinks, and it's also used in many natural remedies.
- Soil fertility:** Bees also play a role in soil fertility by helping to distribute pollen, which can help to improve soil quality and encourage plant growth.
- Economic importance:** Bees are also important for our economy. The production of food and honey, beeswax, and other bee-related products generates over £650 million for the UK economy!



The Crown Estate Sustainability Initiative Meadow Quest lesson

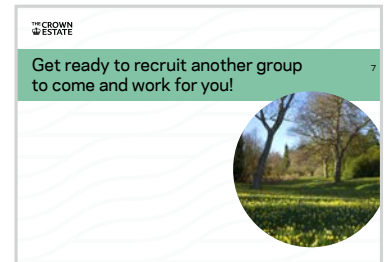
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Careers activity (Slides 5-8) Cont'd

 (25 minutes)

You can follow on this activity by inviting students to think about how they could make their school grounds more bee-friendly.

- Can they remember which plants they met in the world?
- Can they find some of these plants in the school or in the local area?
- On plain paper, ask each student to draw a map of the school playground and mark out areas where they could plant some bee-loving plants, labelling them clearly.
- Which plants are native to the UK? (Hint: think about the ones they met in the world.)
- If there is an opportunity to do so, can you invite the headteacher to review the designs? You might want to use them as part of the extension activity later on.

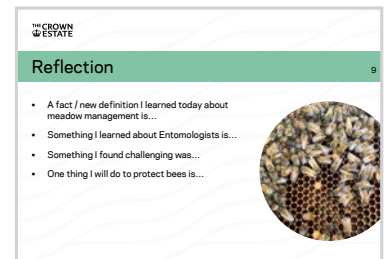


Reflection (Slide 9)

 (5 minutes)

Before finishing the lesson, encourage your students to reflect on their learning.

- Ask your students to use the following sentence starters to reflect:
 - A fact / new definition I learned today about meadow management is...
 - Something I learned about Entomologists is...
 - Something I found challenging was...
 - One thing I will do to protect bees is...
- Depending on your class, you may wish to do this one by one or invite volunteers to take turns.





The Crown Estate Sustainability Initiative

Meadow Quest lesson

6

Optional extension activity (Slide 10)

 (15 minutes)

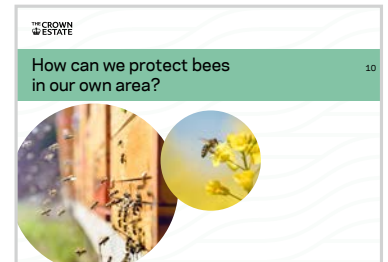
There is so much more of the world to explore so if you have some more time, we'd encourage you to let the students engage in some free play in the world.

If you would like to extend the learning from this lesson a bit further, you can try the following activity.

Write a persuasive letter about protecting bees

Use this extension activity if you have more time or have students who complete the main activity early.

- To bring real-world context to the importance of bees as supporters of biodiversity, take your pupils outside to observe some bees.
- Ask them to think back to what they learned from Bomber the bee, think about:
 - What does the local area offer for bees?
 - Are bees visiting the flowers?
- Next invite your students to write a persuasive letter to their headteacher about why bees are so important and what the school can do to help bees (e.g. planting more flowers, is there a disused flowerbed?).





The Crown Estate Sustainability Initiative

Meadow Quest lesson

7

Real world action

Building student agency with real world action

By taking part in this lesson, students have developed their:

- knowledge of a key sustainability topic
- understanding of why it is important
- practical toolkit, and articulation, of their own green skills

These are the ingredients that enhance students' agency and power to take real world action that builds biodiversity and supports nature recovery.

There are a number of ways you can support them to take their learning forward and continue this process beyond the classroom. Getting children interested in soil can be a fun and engaging way to teach them about the natural world and the importance of healthy ecosystems. You could consider:

- **Hands-on exploration:** Children love to get their hands dirty, so providing opportunities for them to explore soil in a hands-on way can be a great way to pique their interest. This could include:
 - digging in the soil,
 - searching for worms and other soil organisms,
 - conducting simple experiments to test soil properties like texture and moisture.
 - plant your pants is a fabulous way to get children engaged with soil quality (<https://www.countrytrust.org.uk/news/plant-your-pants>).
- **Gardening:** Gardening is a great way to get children involved in soil and help them learn about plant growth and soil health. Whether it's planting a small vegetable garden or tending to a collection of potted plants, gardening can be a fun and rewarding way to teach children about soil and the natural world.
- **Field trips:** Field trips to local farms, parks, or nature centres can be a great way to show children the different types of soil and ecosystems that exist in their local area. They can also learn from professionals and ask questions about soil science and management.

Lesson 5 in this series – Taking action toolkit

For more ideas on safe and manageable ways to harness the enthusiasm your students may have for this or other biodiversity topics, we have created a **Taking Action Toolkit**.

It features accessible principles to empower students to identify key issues that they care about, affecting their school/local community, and begin creating meaningful solutions for nature recovery with their peers.





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Meadow Quest lesson

8

Glossary

- **Meadow:** An open area of grassland or cut for hay, which may also be used for grazing. Regular management keeping woody plants at bay allows a diverse mix of grasses and wildflowers.
- **Crop rotation:** The practice of growing different crops in a sequence on the same piece of land, typically to improve soil health, reduce pests and disease pressure, and increase crop yields.
- **Soil:** The mixture of organic matter, minerals, and other materials that support plant growth and form the foundation of terrestrial ecosystems.
- **Carbon sequestration:** The process by which carbon dioxide is removed from the atmosphere and stored in carbon sinks such as soils, plants, and oceans, thereby helping to mitigate climate change.

