

PLANTING FOR Bees

Year 3 - Year 4

Complete Unit of Work
11 Lessons (approx 60 minutes each)
Aligned to the Australian & Victoria Curriculum

Proud Partners
Inspiring a love of bees
through learning



ABOUT



Immerse your students in a journey to discover the invaluable relationship between bees and plants. With a focus on the European Honey Bee, students will explore the process of pollination, plant and bee biology, the impact of the honey bee on our food security, and the role we play as humans in supporting the symbiotic relationship between bees and plants. Authentic learning opportunities are provided by encouraging students to use the knowledge they have gained throughout the unit to plan and plant a 'bee friendly' garden in their school grounds.

Planting for Bees provides students with opportunities to:

- Explore the anatomy of a honey bee and their lifecycle
- Enjoy a honey tasting experience to explore how the nectar source creates the unique taste profile of different honeys.
- Learn about the cross section of a flower to develop an understanding of how bees pollinate and how pollination works.
- Understand the importance of the symbiotic relationship between bees, plants and humans.
- Learn about the importance of honey bees for our food security.
- Discover what 'bee friendly' flowers are and how we can encourage bees into our environments.

Students apply their new learning by:

- Planting 'bee friendly' seeds in an environment within the school grounds that has food, water and shelter so as to encourage honey bees to visit.
- Planning and designing a vegetable garden with the aim to expand pollination opportunities and increase food security understanding.

'Planting for Bees!' (Year 3-4) is aligned with the Science Curriculum for both the Australian and Victorian Curriculum. It has been developed to include both the Science Understanding and Inquiry Skills standards and the Sustainability Cross Curricular Priorities. The unit of work has been created by a team of qualified and experienced teachers from Bee School by Beechworth Honey in collaboration with the When Bee Foundation. With minimal adaptations required, this unit of work can be used by primary school teachers, science specialists, homeschool groups, and school holiday programs.

Everything you need to deliver this engaging and hands-on learning experience will be provided - including lesson plans, assessment opportunities, seeds for planting, honey for tasting, reading material, videos and printables.

ABOUT



What's included:

- **Background information for teachers on the topics of honey bees and plants.**
- **11 x 1 hour lessons including:**
 - Learning intentions and success criterias
 - Resource list (all resources included and noted below)
 - Assessment opportunities
- **Curriculum links:**
 - Australian Curriculum - Science
 - Victorian Curriculum - Science
 - Science Inquiry Skills
 - Sustainability Cross Curricular Priorities
- **All resources needed to teach the lessons are included:**
 - Complete unit of work - 11 x 1 hour lesson plans
 - Worksheets and assessment templates
 - Supporting videos and sound clips
 - 30x Bee Friendly Seed packets
 - 30x Mini Honey Tasting Kits
 - 'Bees Are Our Friends' by Toni D'Alia & Alice Lindstrom
 - 'Bee Play' props including; cleaning gloves, 'Blossom Bee' plush toy, drawstring bag with wax, shield, headbands and buckets, prop pollen, and a crown.

Disclaimer

While all reasonable efforts have been taken to ensure the contents of this educational resource are factually correct and aligned with the Australian and Victorian Curriculum, it is the responsibility of the individual teachers and schools to ensure these lessons meet their curriculum needs and are suitable for their students.

All videos, photographs, and resources have been created by Bee School by Beechworth Honey in collaboration with the When Bee Foundation, unless otherwise stated and referenced, and are to be used for education and training purposes only.

Any reference to 'bee' throughout this unit of work refers to the European Honey Bee unless otherwise stated.

*10-11 lessons - if you have previously completed the 'Honey Bee Habitats' lesson it is to teacher discretion whether to repeat.

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AUSTRALIAN CURRICULUM LINKS

Science

Year 3	Year 4
Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)	Living things have life cycles (ACSSU072) Living things depend on each other and the environment to survive (ACSSU073)
Science involves observing, asking questions about, and describing changes in, objects and events (ACSHE013)	Science involves making predictions and describing patterns and relationships (ACSHE061)
Science involves making predictions and describing patterns and relationships (ACSHE050)	People use science in their daily lives, including when caring for their environment and living things (ACSHE002)
Science knowledge helps people to understand the effect of their actions (ACSHE051)	Science knowledge helps people to understand the effect of their actions (ACSHE062)

Science Inquiry Skills

	Year 3	Year 4
Questioning & Predicting	With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (ACSIS053)	With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (ACSIS064)
Planning & Conducting	With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (ACSIS054) Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACSIS055)	With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (ACSIS065) Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACSIS066)
Processing and Analysing Data & Information	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS057) Compare results with predictions, suggesting possible reasons for findings (ACSIS215)	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS068) Compare results with predictions, suggesting possible reasons for findings (ACSIS216)
Evaluating	Reflect on investigations, including whether a test was fair or not (ACSIS058)	Reflect on investigations, including whether a test was fair or not (ACSIS069)
Communicating	Represent and communicate observations, ideas and findings using formal and informal representations (ACSIS060)	Represent and communicate observations, ideas and findings using formal and informal representations (ACSIS071)

Sustainability Cross-Curriculum Priorities

System	All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival (OI.2)
	Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems (OI.3)
World Views	World views that recognise the dependence of living things on healthy ecosystems, and value diversity and social justice, are essential for achieving sustainability (OI.4)
	World views are formed by experiences at personal, local, national and global levels, and are linked to individual and community actions for sustainability. (OI.5)
Futures	Actions for a more sustainable future reflect values of care, respect and responsibility and require us to explore and understand environments (OI.7)
	Sustainable futures results from actions designed to preserve and/or restore the quality and uniqueness of environments (OI.9)

VICTORIAN CURRICULUM LINKS

Science Understanding

Level 3 - Level 4
Science knowledge helps people to understand the effects of their actions (VCSSU056)
Living things can be grouped on the basis of observable features and can be distinguished from non-living things (VCSSU057)
Different living things have different life cycles and depend on each other and the environment to survive (VCSSU058)

Science Inquiry Skills

	Level 3 - Level 4
Questioning & Predicting	With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (VCSIS065)
Planning & Conducting	Suggest ways to plan and conduct investigations to find answers to questions including considerations of the elements of fair tests (VCSIS066)
	Safely use appropriate materials, tools, equipment and technologies (VCSIS067)
Recording & Processing	Use formal measurements in the collections and recording of observations (VCSIS068)
	Use a range of methods including tables and column graphs to represent data to identify patterns and trends (VCSIS069)
Analysing & Evaluating	Compare results with predictions, suggesting possible reasons for findings (VCSIS070)
Communicating	Represent and communicate observations, ideas and findings to show patterns and relationships using formal and informal scientific language (VCSIS072)

Please note:

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UNIT OUTLINE

Lesson	Overview	Resources
Lesson 1 Bee Intrigued	<p>We are exploring our current understanding of honey bees and pollination so we can further our understanding of the topic.</p> <p>Assessment Opportunity Formative assessment in the form of a pre-assessment.</p>	<ul style="list-style-type: none">• 'Bee Sounds' audio• 'Planting for Bees! Pre-assessment' worksheet• 'Bees Are Our Friends' by Toni D'Alia & Alice Lindstrom
Lesson 2 Life Cycles of a Bee	<p>We are learning to understand the life cycle of a honey bee so we can understand how a colony functions.</p> <p>Assessment Opportunity Do students demonstrate knowledge of the anatomy of a honey bee?</p>	<ul style="list-style-type: none">• 'Anatomy of a Bee' worksheet• 'Anatomy of a Bee (Answer Sheet)' resource• 'Life Cycle of a Honey Bee (Diagram)' resource• 'Life Cycle of a Honey Bee (Sequence)' worksheet• 'Life in the Hive' video
Lesson 3 Honey Bee Habitats	<p>We are learning about the needs of honey bees as living things so we can understand how their survival is affected by their environmental conditions.</p> <p><i>*If you have previously completed the 'Honey Bee Habitats' lesson, it is to teacher discretion whether to repeat.</i></p> <p>Assessment Opportunity What does a living thing need to survive? Shelter, food, etc.</p>	<ul style="list-style-type: none">• Mini Honey Tasting Kits (30)• 'Honey Bee Needs' video
Lesson 4 Parts of a Flower	<p>We are learning to identify the parts of a flower so we can have a better understanding of how honey bees pollinate and how pollination works.</p> <p>Assessment Opportunity Are the students able to label the flower.</p>	<ul style="list-style-type: none">• 'Cross Section of a Flower' worksheet• 'Cross Section of a Flower (Answer Sheet)' resource• Large Flower (not included)• Tweezers (not included)• Scissors/knife (not included)
Lesson 5 Pollinators	<p>We are learning to explain the process of pollination so we have a better understanding of how honey bees pollinate and how pollination works.</p> <p>Assessment Opportunity Do students have an understanding of the importance of pollination? What pollination is? The role a bee plays within pollination?</p>	<ul style="list-style-type: none">• 'What is Pollination?' video• "Flower Cutouts" resource• Sand - Pollen Prop (included)• Icy Pole Sticks (included)• Pipe Cleaners (included)• Sticky Tape (not included)

Lesson 6

Discovery Walk

We are **discovering** what flowers exist in our schoolyard so we can identify which will attract bees for pollination.

Assessment Opportunity

Science inquiry skill: students are making predictions, recording information, and comparing/reflecting on findings.

- 'Discovery Walk' worksheet

Lesson 7

Is Your School Bee-Friendly?

We are **learning** what a bee friendly environment is so we can decide on a spot to plant our bee friendly seeds.

Assessment Opportunity

Do students have an understanding of what plants need to grow? (water, sunshine, nutrients, pollinator). Can students identify what a bee friendly environment is? (for example, what coloured flowers attract bees).

- 'Bee Friendly Seeds' (30)
- Gardening tools for planting (not included)

Lesson 8

Bees, Plants & People

We are **learning** about the symbiotic relationship between bees, plants and people so we can understand how to support each one.

Assessment Opportunity

Completion of the symbiotic relationship table. Can students define symbiosis? Do students show an understanding of how we benefit from the relationship between bees and plants?

- 'Symbiotic Relationships' worksheet
- 'Bees for Food Security' video

Lesson 9

Bee Relationships

We are **learning** how much the foods we eat are reliant on pollination so we can better understand our food security.

Assessment Opportunity

Students ability to identify foods that are reliant on bees for pollination. Do students understand that plants need honey bees (and other pollinators) in order to reproduce? Can students identify why this is important to us as humans and what we can do to support the process of pollination?

- 'Food Security Needs Bee Security' resource
- Bee-dependent Fruits & Vegetables' worksheets

Lesson 10

Design Your Vegetable Garden

We are **reflecting** on the foods that bees pollinate so we can design our own vegetable garden.

Assessment Opportunity

Vegetable garden - what they chose to plant and why with connections to learning in this unit.

- 'Design Your Own Vegetable Garden' worksheet

Lesson 11

That's a Wrap

We are **learning** to apply the knowledge gained through this unit to participate in a 'bee play' so we can demonstrate our knowledge gained.

Assessment Opportunity

Summative assessment in the form of a post-assessment.

- Bee Play Props:
 - Cleaning gloves
 - Blossom Bee Plush Toy
 - Drawstring bag with wax
 - Drawstring bag x2 (to be filled with pollen)
 - Shield
 - Crown
- 'Planting for Bees! Post-assessment' worksheet