

PLANTING FOR Bees

Year 3 - Year 4

Complete Unit of Work

11 Lessons (approx 60 minutes each)

Aligned to the Australian & Victorian 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 which has food, water and shelter 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 - Year 4) is aligned with Australian and Victorian Curriculum. It has been developed to include Science Understanding, Science as a Human Endeavour, Inquiry Skills Standards, and the Sustainability Cross-curriculum 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 educators on the topics of honey bees and plants.
- 11 x 1 hour lessons including:
 - Learning intentions and outcomes
 - Resource list (all resources included and noted below)
 - Assessment opportunities
- Curriculum links:
 - Australian Curriculum - Science
 - Victorian Curriculum - Science
 - Science Inquiry Skills
 - Sustainability Cross-curriculum 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, bee figurine, drawstring bag with wax*, shield, headbands, 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 educators 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.

***Please note:** Due to domestic quarantine restrictions Bee Friendly Seeds, Mini Honey Tasting Kits, and wax cannot be shipped to Tasmania or Western Australia and will not be included in the Planting for Bees learning kit.

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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 making predictions and describing patterns and relationships (ACSHE050)	Science involves making predictions and describing patterns and relationships (ACSHE061)
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 and Predicting	With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (AC SIS053)	With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (AC SIS064)
Planning and Conducting	With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (AC SIS054) Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (AC SIS055)	With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (AC SIS065) Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (AC SIS066)
Processing and Analysing Data and Information	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (AC SIS057) Compare results with predictions, suggesting possible reasons for findings (AC SIS215)	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (AC SIS068) Compare results with predictions, suggesting possible reasons for findings (AC SIS216)
Evaluating	Reflect on investigations, including whether a test was fair or not (AC SIS058)	Reflect on investigations, including whether a test was fair or not (AC SIS069)
Communicating	Represent and communicate observations, ideas and findings using formal and informal representations (AC SIS060)	Represent and communicate observations, ideas and findings using formal and informal representations (AC SIS071)

Sustainability Cross-Curriculum Priorities

Systems	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)

Please note:

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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 and Predicting	With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (VCSIS065)
Planning and 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 and 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 and 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">• 'Honey Bee Sounds' audio• 'Planting for Bees! Pre-assessment' worksheet• 'Bees Are Our Friends' by Toni D'Alia & Alice Lindstrom
Lesson 2 Life Cycle of a Honey Bee	<p>We are learning about 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">• 'Bees Are Our Friends' by Toni D'Alia & Alice Lindstrom• 'Anatomy of a Honey Bee' worksheet• 'Anatomy of a Honey Bee (Answer Sheet)' resource• 'Life Cycle of a Honey Bee (Diagram)' resource• 'Life Cycle of a Honey Bee (Sequence)' worksheet• 'Bee Anatomy' video• '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>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• 'Australian Landscapes' resource
Lesson 4 Parts of a Flower	<p>We are learning to identify the parts of a flower so we can better understand 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">• 'What is Pollination?' video• '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 can better understand 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">• 'Cross Section of a Flower (Answer Sheet)' resource• 'What is Pollination?' video• 'Bee a Pollinator' video• 'Flower Cut Outs' 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.

- 'Honey Bee Safety' video
- 'Discovery Walk' worksheet

Lesson 7

Is Your School Bee Friendly?

We are **learning** what a bee friendly environment is so we can choose 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 relationships 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

Food Security Needs Bee Security

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
- 'Bees for Food Security' video

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 students chose to plant and why with connections to learning in this unit.

- 'Design Your Own Vegetable Garden' worksheet
- 'Powerful Pollinator Planting Guides' (area specific)*
- 'Supporting Bees' resource

Lesson 11

That's a Wrap!

We are **applying** the knowledge gained through this unit to participate in a 'bee play' so we can demonstrate everything we have learnt.

Assessment Opportunity

Summative assessment in the form of a post-assessment.

- Bee Play Props:
 - Cleaning gloves
 - Bee figurine
 - Drawstring bag with wax
 - Prop Pollen x2
 - Shield
 - Crown
- 'Planting for Bees! Post-assessment' worksheet

*Powerful Pollinator Planting Guides

Visit whenbeefoundation.org.au/our-work/powerful-pollinators to see if there is a guide published for your region. You can access the pollinator guides online or contact When Bee for hard copies of these documents.

These will be used in lesson ten. If you would like hard copies of these resources, order prior to beginning the unit to ensure they have arrived in time.