

PLANTING FOR Bees

Year 5 - Year 6

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



Provide your students with an in depth exploration into the invaluable role of honey bees! Discover the symbiotic relationship between bees and plants, and how we as humans can support them. Explicit teaching of concepts around bee and plant biology, pollination, and food security will provide students with the knowledge they require to undertake research and design their own pollinator friendly garden.

Planting for Bees provides students with opportunities to:

- Learn about the anatomy of flowers and bees to gain a deeper understanding into how pollination occurs.
- Explore the importance of honey bees and pollination for food security.
- Understand the importance of the symbiotic relationship between bees, plants, and humans, how each helps the other to survive, as well as the impact of environmental factors on these relationships.
- Enjoy a honey tasting experience to explore how the nectar source creates the unique taste profile of different honeys.
- 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.
- Discovering which plants have adapted to grow in their schools' particular region to design a pollinator friendly garden.

Planting for Bees (Year 5 - Year 6) is aligned with the 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*
 - 'The Honeybee' by Kirsten Hall & Isabelle Arsenault
 - Activity resources including; sand, icy pole sticks, and pipe cleaners.

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.

Planting for Bees! Unit of Work © 2023 by Bee School by Beechworth Honey and When Bee Foundation is licensed under Attribution-NonCommercial-NoDerivatives 4.0 International. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>

Proud Partners
Inspiring a love of bees
through learning



CONTENTS

Australian Curriculum Links	5
Victorian Curriculum Links	6
Unit Outline	7
Safety Considerations	9
Key Word Glossary	10
Lesson 1: Bee Intrigued	11
Lesson 2: Pollination	13
Lesson 3: How Does Pollination Occur?	15
Lesson 4: Symbiosis	18
Lesson 5: Honey Bee Habitats	20
Lesson 6: Busy Bees	24
Lesson 7: Is Your School Bee Friendly?	27
Lesson 8: Pollinator Power	30
Lesson 9: Flower Power (Part 1)	33
Lesson 10: Flower Power (Part 2)	35
Lesson 11: That's a Wrap!	37
References	39

AUSTRALIAN CURRICULUM LINKS

Science

Year 5	Year 6
Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)	The growth and survival of living things are affected by physical conditions of their environment (ACSSU094)
Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE081)	Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE098)
Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE083)	Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE100)

Science Inquiry Skills

	Year 5	Year 6
Questioning and Predicting	With guidance, pose clarifying questions and make predictions about scientific investigations (AC SIS231)	With guidance, pose clarifying questions and make predictions about scientific investigations (AC SIS232)
Planning and Conducting	Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (AC SIS086)	Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (AC SIS103)
Processing and Analysing Data and Information	Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (AC SIS090) Compare data with predictions and use as evidence in developing explanations (AC SIS218)	Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (AC SIS107) Compare data with predictions and use as evidence in developing explanations (AC SIS221)
Evaluating	Reflect on and suggest improvements to scientific investigations (AC SIS091)	Reflect on and suggest improvements to scientific investigations (AC SIS108)
Communicating	Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multimodal texts (AC SIS093)	Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multimodal texts (AC SIS110)

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:

© Australian Curriculum, Assessment and Reporting Authority (ACARA) 2010 to present, unless otherwise indicated. This material was downloaded from the Australian Curriculum website (www.australiancurriculum.edu.au) (Website) (accessed March 2023) and was modified. The material is licensed under CC BY 4.0 (<https://creativecommons.org/licenses/by/4.0>). Version updates are tracked in the 'Curriculum version history' section on the 'About the Australian Curriculum' page (<http://australiancurriculum.edu.au/about-the-australian-curriculum/>) of the Australian Curriculum website.

ACARA does not endorse any product that uses the Australian Curriculum or make any representations as to the quality of such products. Any product that uses material published on this website should not be taken to be affiliated with ACARA or have the sponsorship or approval of ACARA. It is up to each person to make their own assessment of the product, taking into account matters including, but not limited to, the version number and the degree to which the materials align with the content descriptions and achievement standards (where relevant). Where there is a claim of alignment, it is important to check that the materials align with the content descriptions and achievement standards (endorsed by all education Ministers), not the elaborations (examples provided by ACARA).

VICTORIAN CURRICULUM LINKS

Science Understanding

Level 5 - Level 6
Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect people's lives (VCSSU073)
Living things have structural features and adaptations which help them to survive their environment (VCSSU074)
The growth and survival of living things are affected by the physical conditions of their environments (VCSSU075)

Science Inquiry Skills

	Level 5 - Level 6
Questioning and Predicting	With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules (VCSIS082)
Planning and Conducting	With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks (VCSIS083)
Recording and Processing	Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data (VCSIS085)
Analysing and Evaluating	Compare data with predictions and use as evidence in developing explanations (VCSIS086)
	Suggest improvements to the methods used to investigate a question or solve a problem (VCSIS087)
Communicating	Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships (VCSIS088)

Please note:

This material was downloaded from the Victorian Curriculum and Assessment Authority website (victoriancurriculum.vcaa.vic.edu.au) and was modified. This material is licensed under Creative Commons 'Attribution-Non-Commercial-Share Alike' licence (CC-BY-NC-SA 3.0 Australia).

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• 'The Honeybee' by Kirsten Hall & Isabelle Arseneault• 'Life in the Hive' video
Lesson 2 Pollination	<p>We are learning about pollination so we can understand its importance for various living things.</p> <p>Assessment Opportunity Do students understand why bees are needed for pollination?</p>	<ul style="list-style-type: none">• 'Reflective Thinking Cards' resource• 'What is Pollination?' video• Sand - Pollen Prop (included)• Icy Pole Sticks (included)• Pipe Cleaners (included)• Sticky Tape (not included)• 'Flower Cut Outs' resource
Lesson 3 How Does Pollination Occur?	<p>We are learning about the anatomy of bees and flowers so we can understand the details of how pollination occurs.</p> <p>Assessment Opportunity Can students accurately label a worker bee and the cross section of a flower?</p>	<ul style="list-style-type: none">• 'Cross Section of a Flower' worksheet• 'Cross Section of a Flower (Answer Sheet)' resource• 'Anatomy of a Bee' worksheet• 'Anatomy of a Bee (Answer Sheet)' resource• 'What is Pollination?' video• 'Reflective Thinking Cards' resource
Lesson 4 Symbiosis	<p>We are learning about symbiotic relationships so we understand how bees and plants are essential for each others' survival.</p> <p>Assessment Opportunity Students ability to describe what a symbiotic relationship is and how bees and plants are an example of this.</p>	<ul style="list-style-type: none">• 'Reflective Thinking Cards' resource• 'Lift the Flap' video
Lesson 5 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. How can we help provide this?</p>	<ul style="list-style-type: none">• 'Australian Landscapes' resource• Mini Honey Tasting Kits• 'Honey Bee Needs' video

Lesson 6

Busy Bees

We are learning how humans rely on bees and plants **so we can** see the importance of supporting bee and plant health.

Assessment Opportunity

Students ability to be able to explain the ingredients in pantry items and how dependent these are on bees for pollination. Do they understand these ingredients would be different or not exist without bees?

- Pantry Item Packages (not included)
- 'Food Security Needs Bee Security' resource
- 'Bees for Food Security' video
- 'Pollination Dependence' worksheet

Lesson 7

Is Your School Bee Friendly?

We are investigating our school grounds **so we can** collect data on the pollinator friendly plants we currently have.

Assessment Opportunity

Do students have an understanding of what plants need to grow? (water, sunshine, nutrients, pollinator). Can students identify features of a bee friendly environment? For example, what coloured flowers attract bees? Can they compare the results to their predictions? Science inquiry skills: students are recording information, comparing and reflecting on findings.

- 'Discovery Walk' worksheet

Lesson 8

Pollinator Power

We are learning about the plants that have adapted to survive in our region **so we can** plan a pollinator friendly garden in our school.

Assessment Opportunity

Have students made a well informed decision as to why they chose their 'region specific' plants to add to the plan for a bee friendly garden? Science inquiry skills: students are recording information, comparing and reflecting on findings.

- 'What is Pollination?' video
- 'Powerful Pollinators Guide' (area specific)*
- 'Discovery Walk' worksheet

Lesson 9

Flower Power (Part 1)

We are investigating plants that grow well in our region **so we can** choose the best types of plants for our school grounds to attract and support pollinators.

Assessment Opportunity

Students ability to transfer knowledge of plants that grow well in their region to the plan for a bee friendly garden in their school. Have they considered size, vegetation, type and height?

- 'Honey Bee Needs' video
- 'Supporting Bees' resource

Lesson 10

Flower Power (Part 2)

We are continuing to investigate plants that grow well in our region **so we can** choose the best types of plants for our school grounds to attract and support pollinators.

Assessment Opportunity

Students ability to transfer knowledge of plants that grow well in their region to the plan for a bee friendly garden in their school. Have they considered size, vegetation, type and height? What else could students include that would encourage pollinators in their school garden? i.e. water and shelter.

- 'Honey Bee Needs' video
- 'Reflective Thinking Cards' resource
- 'Supporting Bees' resource

Lesson 11

That's a Wrap!

We are exploring our new understanding of bees and pollination **so we can** consider future actions we can take.

Assessment Opportunity

Summative post-assessment

- 'Bee Sounds' audio
- 'Planting for Bees Post-assessment' worksheet
- 'The Honeybee' by Kirsten Hall & Isabelle Arsenault

*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 lessons eight, nine, and ten. If you would like hard copies of these resources, order prior to beginning the unit to ensure they have arrived in time.