



EXPLORING THE NATURAL WORLD THROUGH ASKING QUESTIONS,
DISCUSSING SIMPLE MODELS AND PLAY.
UNDERSTANDING THE IMPORTANCE OF POLLINATORS IN THE WELLBEING OF NEW ZEALAND.

ESSENTIAL QUESTION:
CAN WE USE BEES TO TEACH US MATHS?

WHAT ARE WE LEARNING?

- Describing personal locations and give directions, using measures and half- or quarter-turns.
- Investigating and develop visual ideas in response to observation and imagination.
- Representing reflections, translations, and rotations by creating and describing patterns.

TRY THIS WITH

- Year Level 2-6.
- Students who enjoy looking close up.
- Students who love gamifying the everyday.

FIND

APPLY

PRODUCE

Relate
Calculate
Recognise

Identify
Classify
Ask

Watch '[Bees - Nature's Matchmakers](#)' for your own professional development.

As a class watch selected [segments of Bee Movie](#) focusing on [hexagon references](#) in 'The Hive'.

Give every student a [30cm length of paper](#) and design their [ideal bee home](#) on one side.

Measure the length ([perimeter](#)) of the paper and divide it into 6 equal parts ([fractions](#)).

Watch '[Why do Honeybees love Hexagons?](#)' to understand why honeybees are math geniuses.

Construct a [hexagon from each paper strip](#) and join ([tessellate](#)) together to make a [class hive](#).

Construct sentences that use mathematical vocabulary to describe the maths of a hive.

Explain the [importance of pollinators](#) and that [in NZ](#), most insects are also pollinators.

Understand that we can classify things by [asking simple questions](#) (try 'Classify It!').

Collect a pinterest board of 'animals' students believe could be insects.

Use the [key classification criteria](#) for the 'insecta' class of animals to test the pinterest collection.

Correlate
Represent
Distinguish

Examine
Identify
Analyse

Understand the '[Flight of the Bumble Bee](#)' to understand how good bees are at navigating.

Reinforce numeracy concepts of [Turn](#), [Distance](#), [Position and Orientation](#).

Watch [Maddie the Beekeeper](#) explain the Waggle Dance in '[Why Bees are so good at math](#)'.

Explain that you are going to create a [Waggle Dance Game](#) to help explain how bees find their way.

[Co-construct a game](#) with students that uses the core elements of the Waggle Dance.

Students must use turn, distance and position to locate pollen sources accurately.

[Turn, Position](#): The bee uses the angle from the sun to determine the direction of the flower/food.

[Distance](#): The bee uses the size of the figure of 8 to describe the distance to the flower/food.

[Waggle](#): The bee has an intensity of waggle for how delicious the food/flower is.

Consider constructing a sun, flowers, code, map, real life or virtual scenarios or unit of measurement.

Design
Develop
Invent

Estimate
Evaluate
Validate

Watch '[Here Comes the Sun](#)' to reinforce the concept of fertilisation.

Create a large wall size map of your school grounds using [Posterizer](#).

Predict where you will find 'pollen places' - use coloured stickers to identify locations.

Use [Project Noah](#) to document any pollinators you find on your school grounds.

Gather plastics due for recycling ([bright colours are best](#)).

Design and create mythical pollinator sculptures that conform to the 'insecta class'.

Each [student sculpture](#) must have 1). 3 sections to the body, 2). antenna, 3). 6 legs (wings are optional).

Re-visit the [best qualities of a pollinator](#) (that pollen can stick to them so transfer can happen)

Use [Draw and Tell](#) to prototype designs that include all the required elements.

Make your [pollinators fantastical](#) and give them scientific names and [specimen labels](#) to match.

Use the artworks to promote the importance of pollinators to your school community.

CLASSIFY IT!



YouTube

YouTube



draw@tell



SUCCESS CRITERIA

Students can check they have successfully completed the task by:

- Mapping pollen places on a map of school grounds and documenting pollinator populations.
- Gamifying the waggle dance to successfully convey fellow bees to a nominated pollen destination.
- Creating a fantastical pollinating insect complete with specimen label from recyclables.

PRINCIPLES	VALUES	KEY COMPETENCIES	LEARNING AREAS	WORD BANK	KEY CONCEPTS
Future Focus Learning to Learn	Community and participation Ecological sustainability Respect	Using language, symbols and texts Thinking Relating to others	Mathematics and Statistics Arts	Tessellation Insecta Class Pollinator Waggle Dance	Classification Position and Direction Pollination Design