Bee Life

Grade 3 Science Unit

bees matter

Bee Life

Instructions to Teachers

This unit is a **Science** lesson plan for *Life Science: Plant Growth and Changes topic.* Over a duration of 45 minutes, the lesson will take grade 4 students through the basics of plant reproduction, the role pollinators play in growing crops and an overview of the relationship we have with our food.

Concepts this will teach students include:
plant reproduction, diagramming, anatomy, plant/animal relationships and the relationship between humans and our food.

The materials included are:
- Blackline Master: Flowers and Fruits
- Blackline Master: Plant Parts
- Blackline Master: Plant Parts Worksheet

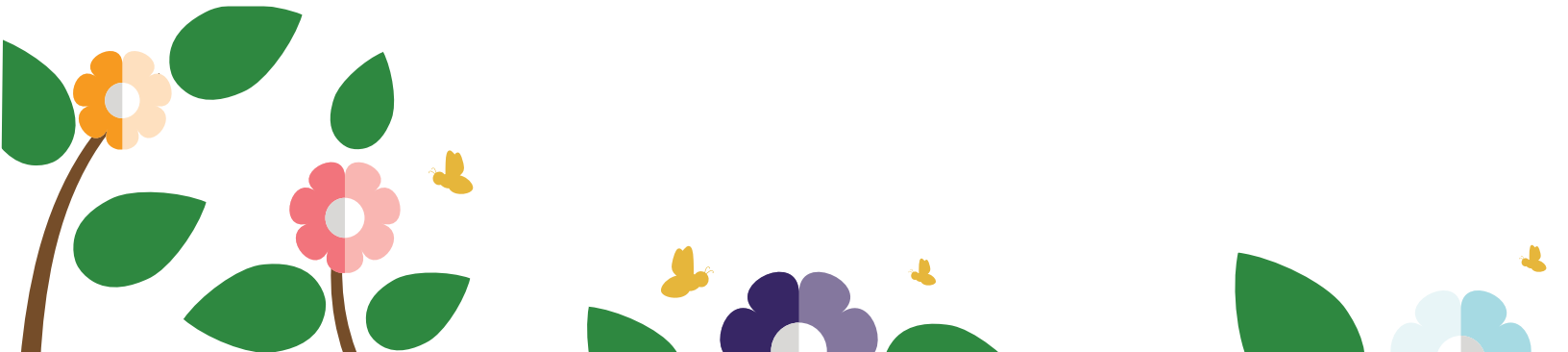
Curriculum Expectations Overview

Based on the British Columbia curriculum, we've identified three different measurable expectations that this unit will meet as described in the curriculum guides (and in more detail on the next page).

Prior to the lesson, make copies of each of the three *Bee Life* Blackline Masters for all of your students and attach them together in a hand-out package. Determine if you will be using the Plant Parts Worksheet as an assignment and if so, keep it separate from the other materials.

During the lesson, ensure each student has all the relevant materials. Draw a diagram on the board of the flower included with Plant Parts, but don't label any of the parts. Instead, in a list next to the drawing, include a list of the terms that students will learn:
- Petals
- Pistil
- Stamen
- Stem
- Leaf
- Root

As you explain the material in the Blackline Masters, add the simple function next to each of the words to define them. Draw lines from the words to the parts of the flower to reinforce the parts and their names.



Bee Life

Curriculum Expectations

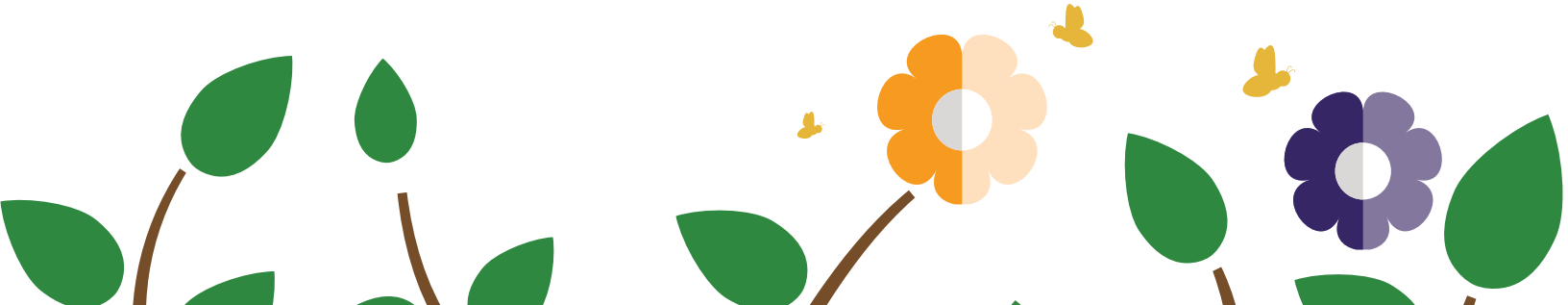
Grade 3 Science – Life Science: Plant Growth and Changes

The study of plants focuses on their characteristics, needs, and growth patterns. Through investigation and experimentation with a variety of plants, students determine the needs, structures, and adaptations of plants. Observing, measuring, and recording growth gives students the opportunity to understand the life cycle and different ways that plants can reproduce. Students also investigate plant uses, harvesting methods, and other relationships of plants to other living things..

By the end of Grade 3 Science, students will be able to:

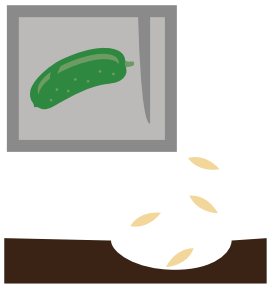
- compare familiar plants according to similarities and differences in appearance and life cycles
    - accurately illustrate the life cycle of a flowering plant

- describe ways in which plants are important to other living things and the environment
    - identify the needs of common plants and animals, and provide a detailed description as to how they meet those needs
    - illustrate ways that plants and animals depend on each other, using drawings, graphs, charts, and/or Venn diagrams



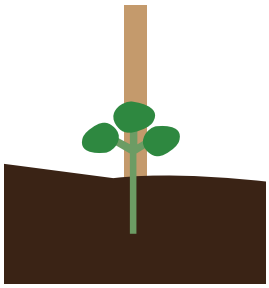
Bee Life

Flowers and fruits



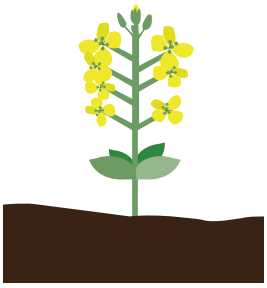
Seed

A **seed** contains everything a plant needs to grow **roots** and start its life.



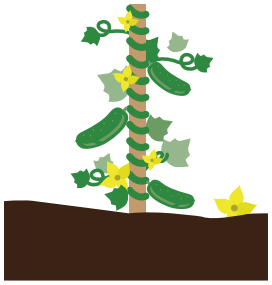
Shoot

A **shoot** grows from the seed with a **stem** to support it and **leaves** collect energy from the sun.



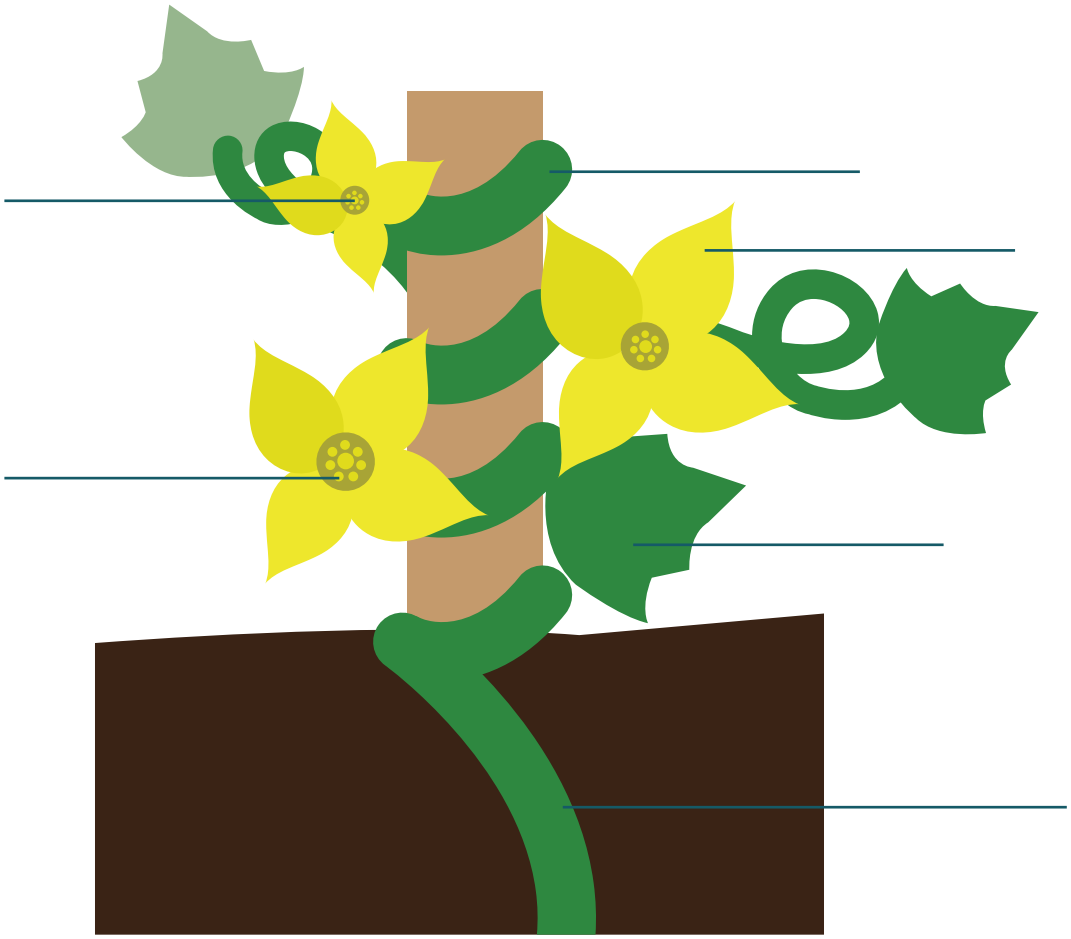
Flower

A **flower** is necessary for a plant to reproduce and to make new plants. Flowers are usually bright and colourful to attract **pollinators** like honey bees and hummingbirds.



Fruit

The **flower** eventually grows into a **fruit** and a **fruit** holds the **seeds** that will grow a new **plant** in the next season.



Plants use their flowers to reproduce. Every flower has a **pistil** and a **stamen**. The **stamen** holds **pollen**. When **pollen** brushes on the **pistil**, the plant is **fertilized** and creates a **fruit** that contains seeds. Animals eat the **fruit** and scatter the **seeds** where they can grow the next season.

But most **flowers**, like cucumber **flowers**, have **pistils** that can't be **fertilized** with **pollen** from the same flower's **stamen**. That's why they've adapted—or changed over time—to attract **pollinators** to spread their pollen to other **flowers.**

Fill in the diagram above with the words that match the parts of the plant:
pistil, stamen, petal, stem, leaf, root

Bee Life

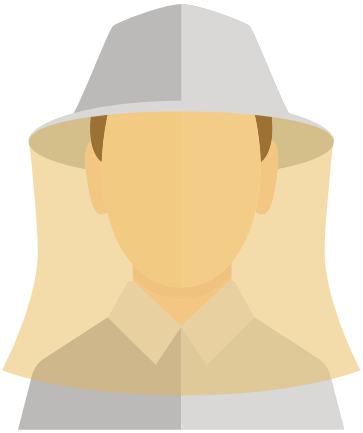
Pollinators and plants

Attracting a pollinator

Using their brightly coloured and sweet-smelling flowers, plants attract pollinators. Honey bees collect pollen and take it back to their hive for other honey bees to eat. When they fly from flower to flower, pollen spreads onto the pistils of different plants. If these plants are of the same species, the pollen will fertilize those plants.

Without bees, flowers couldn't reproduce. But without flowers, bees wouldn't have anything to eat.

They have both adapted to help each other and get what they need.



Bees and people

Though many of us are afraid of bees, we need them. They pollinate many of the plants we grow, which becomes the food we eat. Farmers understand how important bees are, because without bees to pollinate many of their crops, there would be nothing for them to harvest. Bees also make honey from nectar and pollen, which we use in a lot of our food.

Some people actually farm bees for their honey. These people are called beekeepers.

Bee Life

Worksheet

Fill in the blanks with the word that makes the most sense. Use each word only once.
pollen, pollinate, seeds, stamen, fruits

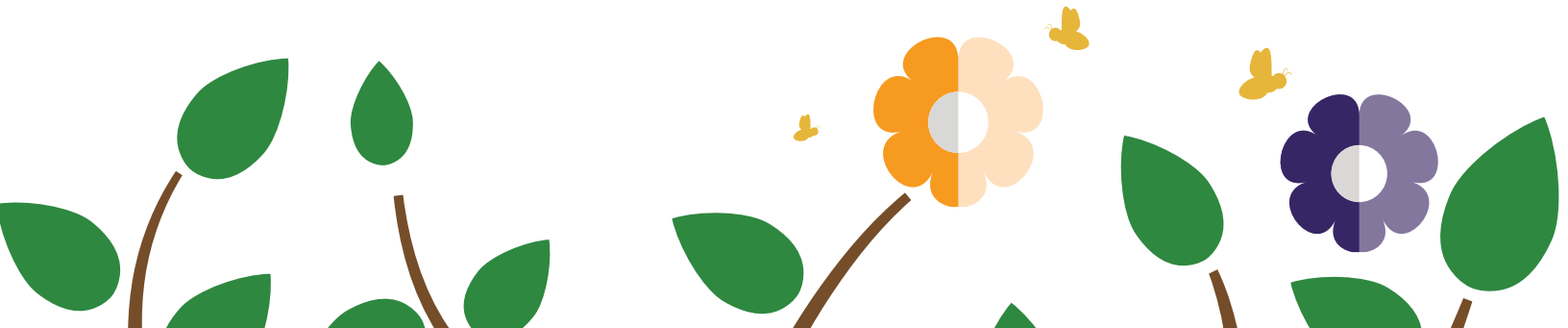
1) **Pollen** that flowers produce come from the _____.

2) Seeds that grow new **plants** come from the _____.

3) Bees collect _____ and spread it from **flower** to **flower**.

4) Animals can spread _____ and help them grow new **plants**.

5) When **pollinators** like bees brush **pollen** on the **pistil**, they _____ the **plant**.



Bee Life

Answer Key

Fill in the blanks with the word that makes the most sense. Use each word only once.
pollen, fertilize, seeds, stamen, fruits

1) **Pollen** that **flowers** produce come from the **stamen.**

2) **Seeds** that grow new **plants** come from the **fruits.**

3) Bees eat **pollen** and spread it from **flower** to **flower**.

4) Animals can **spread** seeds and help them grow new **plants**

5) When **pollinators** like bees brush **pollen** on the **pistil**, they **pollinate** the **plant**.