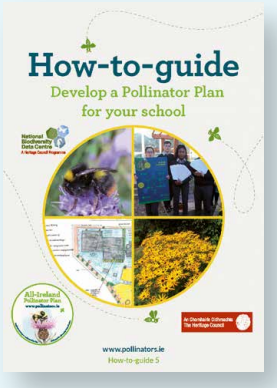
04

Lesson Plan

What pollinators need: Food, Shelter, Safety

Suitable for Junior Infants to 6th Class

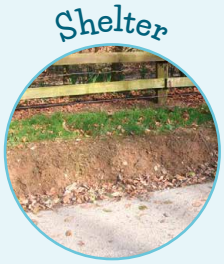
Use our School Resources at www.pollinators.ie/schools including the Junior Pollinator Plan (also available in Irish) and the 'How-to-guide: Develop a Pollinator Plan for your School'



Objectives

In this lesson, students will:

- ✓ Learn what bees need to survive: Food, Shelter and Safety.



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Food

Bees feed on flowers - they gather pollen to bring back to their nest to feed to the baby bees, and the adults drink the nectar from flowers to give them energy. Some flowers offer better food (pollen and nectar) than others.

Shelter:

- Bees need safe nesting sites.
- **Bumblebees** nest in long grass, often at the base of a hedgerow.
- **Mining solitary bees** nest in south/ east-facing banks of bare earth.
- **Cavity-nesting solitary bees** nest in existing cavities in wood or stone.

Safety:

Pesticides include herbicides, insecticides and fungicides. Insecticides harm or kill bees, while Herbicides remove the wildflowers that give them food.

Class Discussion:

Have a class discussion about what bees need to survive and our top 10 tips for helping bees:

1. **Don't mow, let it grow**
   Reduce mowing to once a month to let native wildflowers grow and feed the bees.

2. **Protect native hedgerows**
   Plants like Hawthorn and Blackthorn provide vital food for wild bees when they emerge from hibernation.

3. **Plant native flowering trees**
   Willow, Rowan and Holly flowers provide important food for pollinators.

4. **Don't spray**
   Pesticides can kill, harm, and disorientate pollinators either directly or indirectly by poisoning the flowers they feed on.

5. **Create nesting habitat**
   Scrape back some bare earth, leave some areas to grow wild, or drill holes in unvarnished wood.

6. **Choose nectar and pollen-rich garden plants**
   Find lists on our website of pollinator-friendly plants for different settings

7. **Plant pollinator-friendly bulbs**
   Crocus, Allium and Snowdrop provide better food for pollinators than Daffodils and Tulips.

8. **Put up signs**
   Tell others you are managing your garden or land for wildlife. You can find free templates on our website.

9. **Spread the word**
   Talk to your neighbours, friends and family about how to help pollinators. Share these tips with your community group, school, workplace, or faith community.

10. **Record your actions**
    Add your site to the 'Actions for Pollinators' map to help us build a network of pollinator-friendly places.

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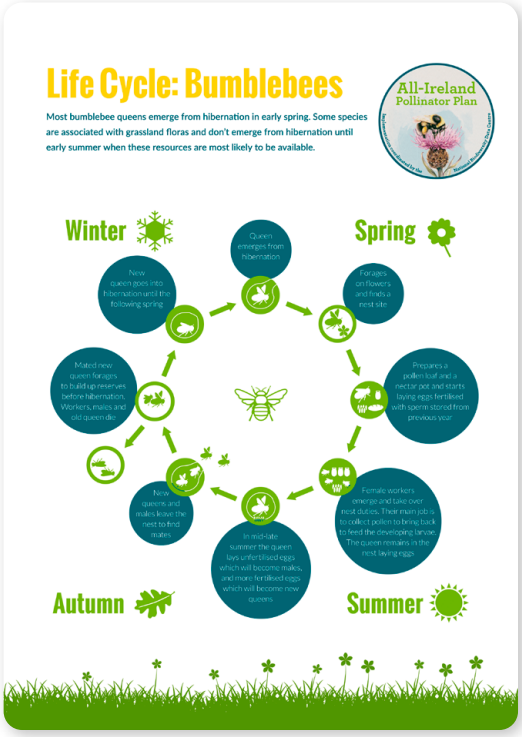
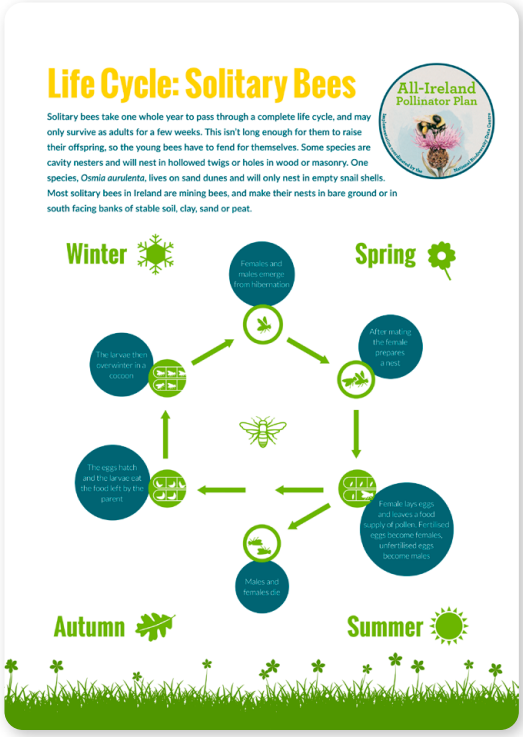
Using life cycle posters at

pollinators.ie/schools,

explain why bees need lots of flowers for food from early spring right through to Autumn...





Discuss and draw some native plants that are important for bees

Willow and Dandelions are really important in early spring.

Willow

Dandelions

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Flowering hedgerows

(that are not clipped too tightly) provide lots of pollen and nectar for bees.

= NO FOOD

= FOOD

Blackthorn and Hawthorn

Blackthorn and Hawthorn in our hedgerows are really important food sources.

Clover

Clover is a very common wildflower offering food in summer months. So much so, it used to be called ‘Bee’s bread’.

Brambles

Brambles give us flowers for pollinators and yummy blackberries later in the year.

Ivy

Ivy is a great plant as it flowers very later in the year when there is not much else in flower for bees. It also has berries in winter - which is great news for birds.

Activity: Create a play Bee garden

Junior to 3rd Class

Create a play garden with all that pollinators need: Food, Shelter, Safety

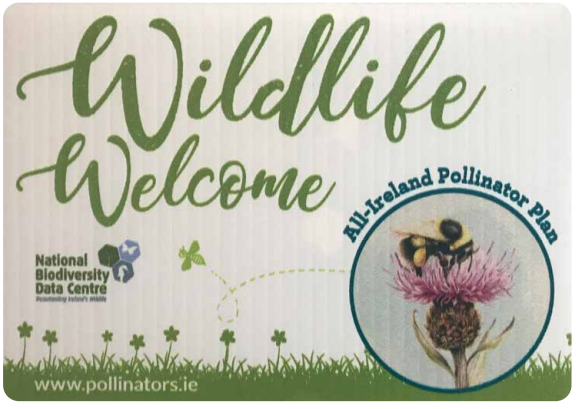
For instance, a garden for a cavity-nesting solitary bee should have lots of flowers for food; a small bee hotel for its nest, and for safety and a sign that says: “Protected for Wildlife’ or ‘No spraying’

You will need:

- ✓ An old shoe box.
- ✓ Toilet roll inserts.
- ✓ Coloured paper to cover be hotel and to make paper flowers.

How to make it:

1. Cover the outside of your box in whatever design you want.
2. Fill the box with toilet roll inserts.
3. You can use your bees you made in previous lessons to play with your bee garden.
4. Lay down paper flowers and have your bees pick up pollen to bring back to the bee hotel for the baby bees.



Make your own garden sign

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4th to 6th Class:

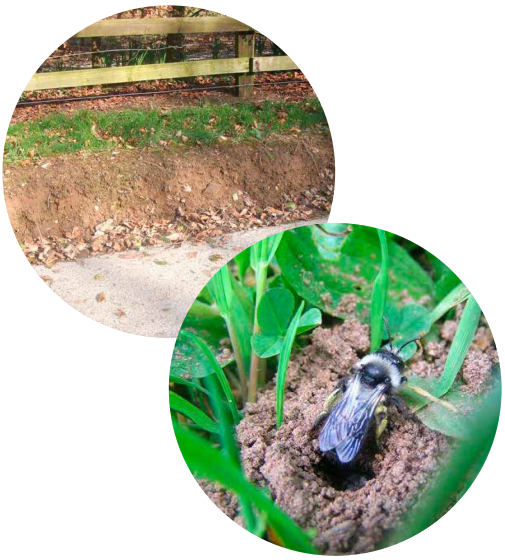
Did you know small bee hotels are much better than the very large ones?

Myth:

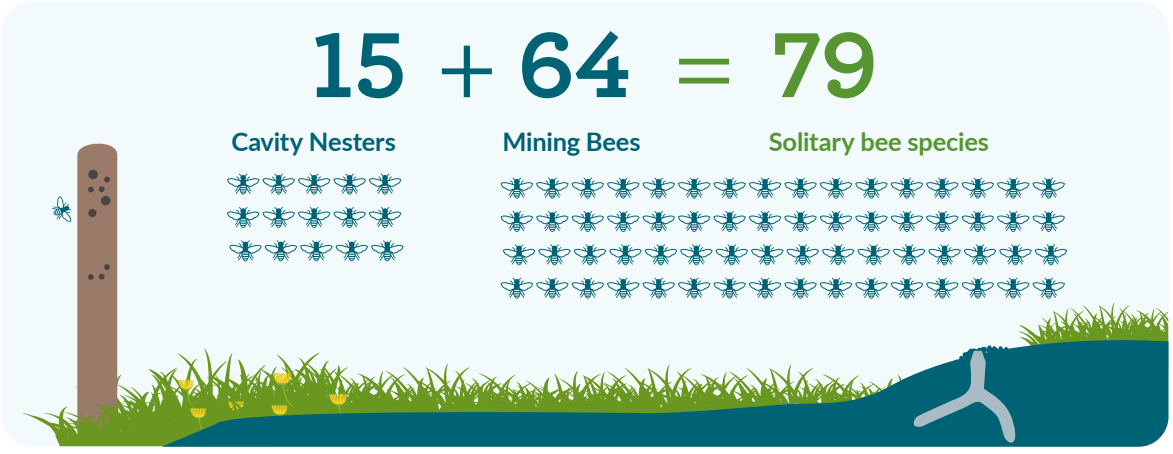
A very large bee hotel is a good action to help bees.

Small bee hotels should be placed 1.5-2m off the ground in a sheltered south or east facing location.

- ✓ They must be close to food sources - solitary bees don't fly far!
- ✓ You'll know your box is being used if the cavity entrances have been closed off with pieces of leaf or mud. If it's not being used consider moving it to a new location.



Bee nest boxes only target a small number of our cavity-nesting solitary bees. Don't forget that most of our solitary bees nest in bare ground which is even easier to create by scraping back vegetation!



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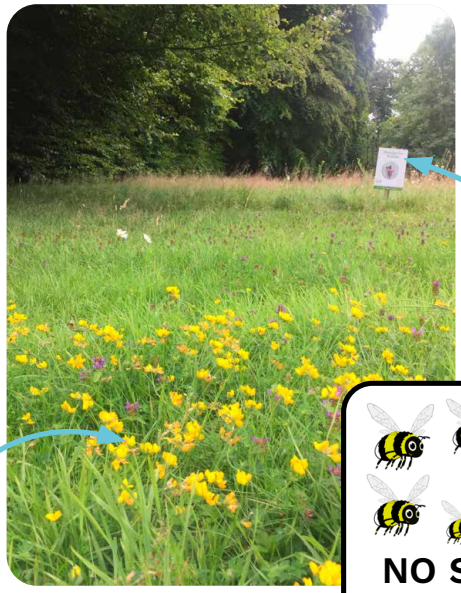
4th to 6th Class:

- Find photographs online or use the images below to develop a photo collage activity to learn about food, shelter and safety.
- Beside each photograph, ask students to explain what aspect of food, shelter or safety is featured, and how?
- This exercise will help critical thinking and will support what the children have learned from previous lessons.

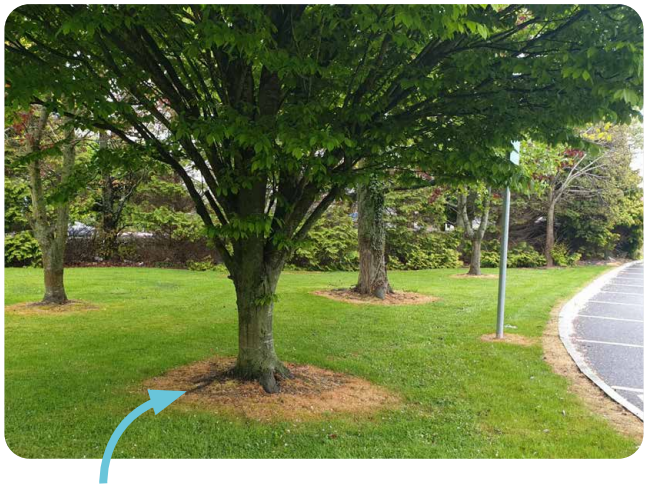
Examples:

Holes drilled in wood for solitary bees to nest inside.



Protective signage.

Reduced mowing of a lawn results in lots of wildflowers to feed the bees.



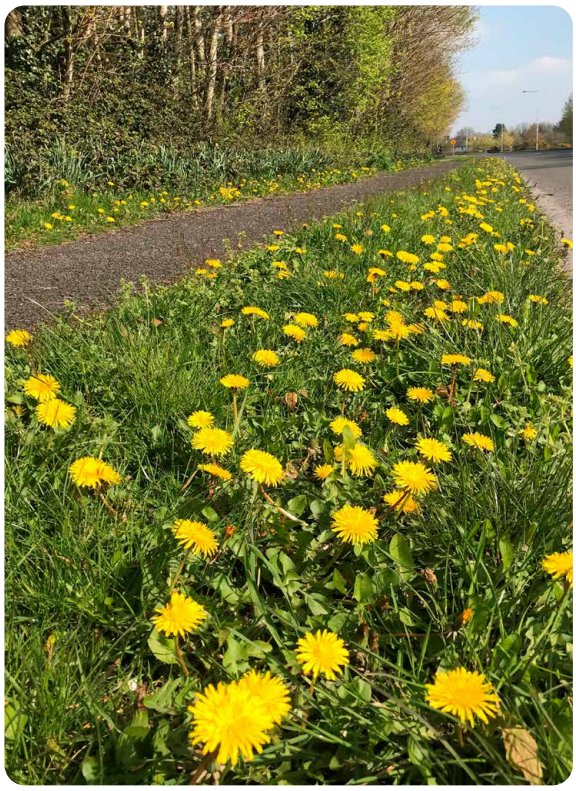
Sprayed with pesticides.

Bare earth makes a great nesting site for mining solitary bees.

Bare earth makes a great nesting site for mining solitary bees.

Bee hotel for solitary bees to nest inside.

Tightly mown grass is like a barren desert for bees.



Dandelions = FOOD

Sunflowers are full of goodness for bees.

Daffodils = NO FOOD

Unfortunately, not all flowers are as good as others. Daffodils and tulips have very little pollen and nectar

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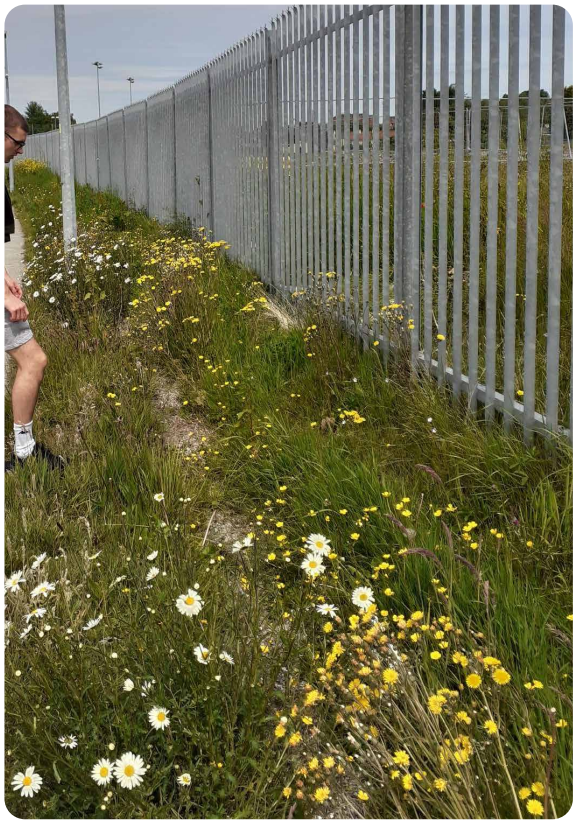
4th to 6th Class:

Discussion:

1. What do you think of these photographs?
2. Which looks better?
3. Which would be better for bees? Why?



Before Mowing

After Mowing