

A WORLD OF GREEN AND COLOURS:

PLANTS





TEACH, INSPIRE

ND PROTECT

What plants inspire you? Do you have a favourite plant?

Plants are the air we breathe and the food we eat!

Knowing more about plants will give you some inspiration on:

- how to connect children with nature
- how to improve your school grounds
 - making it more wildlife friendly and green
- improve urban biodiversity





Plants have many different characteristics!

Here are some questions to help you characterise the plant and possibly identify it:

- What shape and size leaves have?
- Does it have flowers?
- What colour does it have?
- Do you see fruits and seeds?
- Does it smell?



Plants provide us fresh air and the Oxygen needed to sustain life on Earth.





Here are 5 categories that you can easily identify in your surroundings:





Why not visit your school grounds or surroundings to see what types of plants you find?

Herb: small plants which have a soft stem.

Examples: wheat, tomato, cabbage, mustard, sunflower, radish, carrot



Shrub: bushy and medium-sized plants. They are slightly bigger than herbs. Their branches start from the ground.

Examples: lemon, maquis, rose



Tree: These are tall and large plants with hard and woody stems. A single main stem arises from the ground, known as a trunk. The trunk gives out many branches at certain heights. The branches carry leaves, flowers and fruit. *Examples: Pine, olive, oak poplar*



Creepers: Plants with weak stems that cannot stand upright and spread on the ground. *Examples: pumpkin, watermelon, sweet potato*



Climber: Plants with weak stems that needs support. They can be seen growing up walls, fences or even other plants *Examples: ivy, grapevine, cucumber, bean*







Did you know?

Taller trees are able to access more sunlight and energy through photosynthesis as well as being more visible to pollinators!

A tree's growth is based, in part, on competition with its neighbouring trees to gain access to the sun!





ESTIMATE THE HEIGHT OF A TREE



Why not going out to find which is the tallest and smallest tree in your surroundings?

Here is how you can measure the height of a tree with very few resources!

Materials Needed

- A tree
- A taoe measure
- A stick
- Pen and paper





Take nothing but photos and leave nothing put footprints!

Don't forget!

Step 1 Step 2 Step 3 Step 4 Stand next to the tree intervals Stop when you can see Find a tree you think is At regular bend forward and look and start to walk away the top of your tree the tallest from it at the tree between and mark where you are standing with your your legs stick Step 6 Step 7 Step 8 Step 5 Measure the distance Measure how tall you Take a picture of your Hug your tree to thank are and work out the from your stick to the it for all it's hard work! so you don't tree tree. This is how tall it difference! forget what it looks like is!



Describing the shape of trees can be a good tool to help students improve vocabulary

Round	Conical
A strong trunk with branches that	A slender tree which is wider at
are rounded or oval shaped.	the bottom and thinner at the
	top.
For example: Olive Tree	
	For example: Italian Cypress
	tree



DIFFERENT KINDS OF LEAVES

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When analysing leaves, look at the following:

- Venation pattern (The arrangement of veins in a leaf. Veins bring nutrients and liquid to leaf cells)
- Shapes (Needle, Spear, Round, Heart, Hand)
- Number (Simple leaf or compound leaf with leaflets)
- Margins (Smooth, Teethed, Lobed)
- Arrangement on the stem (Opposite, Alternate)



DON'T GET TRICKED BY THE COMPOUND LEAF!

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Pay close attention to how a leaf grows. You can get a **simple leaf** or a **compound leaf**.

A **simple leaf** has one undivided blade that is attached to a twig by a stem.



A **compound leaf** can divide into several "leaflets" on the same stem attached to a twig. Each of the several leaves do not have a "bud" at the end of their stem. When looking at a leaf to see what type it is, just remember to look at where the "bud" of the stem starts



Plants adapt to environmental conditions!

In the Mediterranean climate, the summer is hot and dry. These conditions can be compared to a "desert" and plants had to adapt to survive.

Mediterranean climate adaptations to prevent water loss:





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Have you ever wondered where are the leaves of the cactus? Or you just though that cacti don't have leaves?

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Guess what? The cactuses' spines are their leaves!!!

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This extreme transformation of the leaves has evolved to prevent loss of water.



These are hard and dry.

The spines have other functions too:

- protection from predators
- they direct the water towards the body of the cactus
- protect the plant from the hot sun

No wonder it is common to see more cactuses in hot places, like the desert!

Want to know more?

Cacti are **succulent** plants, which means that there is one or more parts of the plant that allow the storage of water in much larger quantities than in other plants.

When there is enough water, the cactus expands its stem to absorb water, allowing the spines to separate slightly which allows light to reach the tissues.

If there is a shortage of water, the plant becomes dehydrated and its body contracts. This causes the spines to approach each other to cover the cactus and provide shade.

WHY SOME TREES LOSE THEIR LEAVES?

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During cold or dry seasons, some trees and shrubs lose their leaves.

These plants are known as **deciduous.** They save energy by shredding their leaves at certain times of the year. This way they spend the harsh season in a state of low activity or rest.

Evergreen trees keep their leaves all year round, as opposed to deciduous trees. In general, evergreen plants have thicker and smaller leaves.





Take a walk around your school grounds to see the many different types of leaves your plants have. Draw them!

Pay attention to the following:

- **Colour.** Are they green, yellow, brown?
- Shape. Do you find a leaf in the shape of a heart?
- Leaf margins. Are they regular or irregular?
- How they feel. Are they smooth, hairy, or have bristles?

FLOWERS: WHY ARE COLOURS IMPORTANT?

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To attract pollinators!

The brighter the flower, the more likely it will be visited by pollinators (bees, butterflies, beetles, flies and some more)!

WHAT IS POLLINATION?

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Pollination is an essential part of plant reproduction.

An insect feeds from the flower's nectar getting covered in pollen and moving to another plant. When the insect is in the next plant, pollen falls from the insect into the new plant.

The fertilized flower later gives fruit and seeds.













Due to this, flowering plants have evolved different visual patterns to attract and guide insects to them. If you want to learn in more detail about Pollination, watch this video:

https://www.youtube.com/watch?v=cQq cJvS1f60&list=PLPsgxrjyvsxY8127WF4GA CHnnEiMmK2ID&index=7





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Fruit and seeds are an important food source for birds and other animals.



Fleshy fruit

Drupe: outer fleshy part that surrounds a shell with a seed inside

Examples: peach, plum, cherry, orange, lemon, pear, apple

Berry: is a small and pulpy fruit. Typically, berries are juicy, rounded, brightly coloured and do not have a stone or pit, although many pips or seeds may be present.

Examples: strawberry, blackberry, raspberry, red currant, white currant, blackcurrant

FLESHY FRUIT



Berry

DRY FRUIT

Dry dehiscent/self-opened fruit (capsule,

legume): a fruit that opens and releases its contents, normally in a regular and distinctive fashion

Example: beans, peas, lentils, peanuts

Dry Indehiscent/not opened fruit: fruit that do not have specialised structures for opening and releasing the seeds; they remain closed after the seeds ripen and are opened by animals, weathering, fire, or other external means

Example: walnut, hazelnut, chestnut, acorn





Now it's time to choose a plant from your school grounds and describe its characteristics learnt together with your students.

Here are some other ideas!



Virtual herbarium

You can build your own virtual herbarium.

Go out into your school grounds with your class and take pictures of all the plants you can find. Make sure to take photos of the flowers, leaves, fruit or seeds.

Just like the table ->

If you know the name of the plant add that too! If not, ID later using the photo.

TREE – SHRUB – HERB-CREPER-CLIMBER (circle the right one)	
General photo of the plant	Photo of the leaves
Photo of the flower	Photo of the fruit

How to estimate the height of your tree?

Take a look at Learning Through Landscapes material concerning 10 ways to see how tall is a tree.

https://www.ltl.org.uk/resources/measure-a-tree/







Leaves: collection and collage

- During the visit to your school grounds, you also can collect all the different leaves from the floor.
- Children can classify by types (big/small, soft/hard, different shapes, evergreen/deciduous).
- 3. Why not make a collage of all the fallen leaves you find?



Creative art

- With all the materials collected in the school grounds children can create their favourite animals.
 - Just let their creativity flow!
- Remember! make sure to use only fallen items, never pickup plants or flowers!



How many kinds of leaves you can find in your school grounds?

Tally how many leaves you find for each category.



Flower inspection

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In your school grounds, search for different flowers. Note down the colour, flower size, the month and the name if you know it.

Why not sit quietly and count how many different insects or minibeasts visit the flower in 5 minutes?

Watch this video to learn how to draw flowers! <u>https://www.youtube.com/watch?v=mcVJsabq1C</u> <u>Q&list=PLPsgxrjyvsxYOGg_v5Q1tBH8yhk8hzfUd&i</u>



Fruit inspection

You can explore your school grounds and take a look at the fruit of your plants. Note down the type of fruit, the size, the month and if you know it, the name!





Well done for concluding this module!

For more activities to connect children with nature, please visit this page. Feel free to contact dinjawahda@birdlifemalta.org if you require additional information.

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