

Plant features

There is a large number of very different types of plants.

They are much easier to study and identify when they are classified. You use the same steps to classify plants that you used to classify animals.



Do you remember those steps?

What makes up plants?

Structural features of plants are the parts that make up a plant. You will be familiar with many of the common plant structures.

Parts of a plant

Many similar structures are found in plants. These include structures such as roots, flowers, stems and leaves.



Activity: What are plants made up of?

Label the roots, flower, stem and leaves on the plant drawn below.



A plant

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Check your response by going to the suggested answers section.

The parts of a plant are called the structural features. Therefore, some structural features of a plant are the leaves, roots, stems and flowers.

Now take a closer look at one of these structural features of plants – the leaves.

Looking at leaves

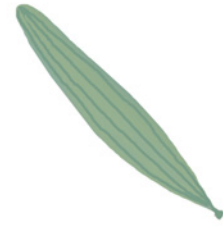
Are all leaves alike? Is the leaf of a banana tree the same as the leaf of a wheat plant? In some ways they are similar – leaves all have edges and veins and are usually green. Leaves can also be quite different as you can see in the drawings following.



geranium



bougainvillea



bottlebrush



rose



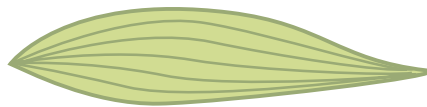
dandelion

Five leaves from different plants

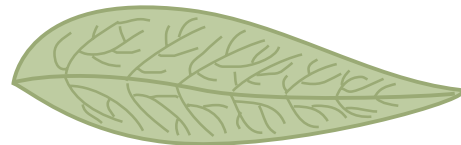
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You can see that leaves can have a variety of shapes.

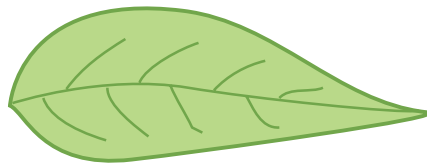
Here are some common vein patterns in leaves.



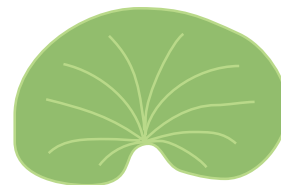
parallel



network



pinnate



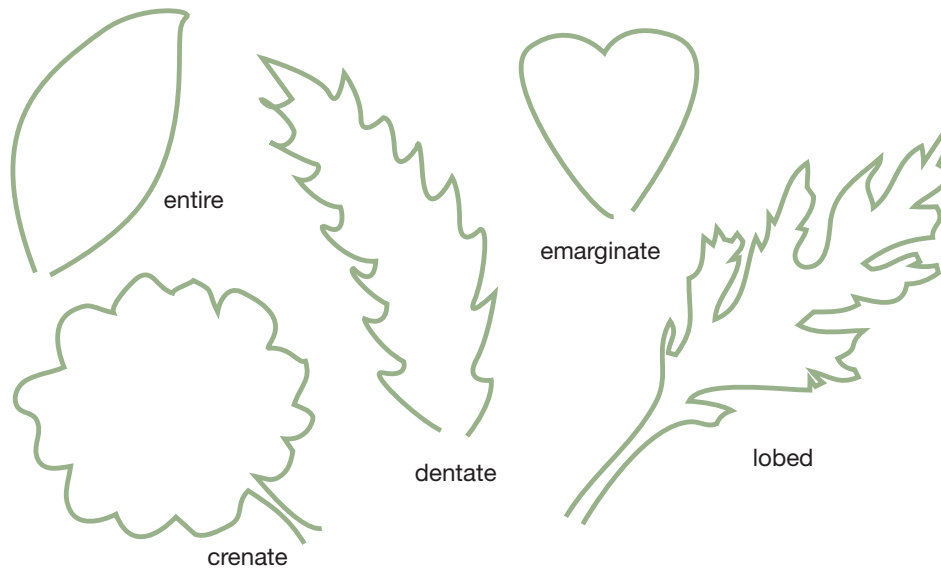
palmate

Leaf veins\

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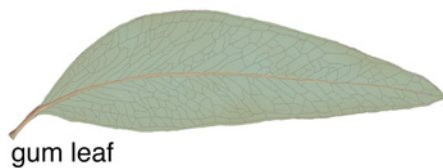
The veins in the gum leaf are most like the network pattern.

What about the shapes of leaf edges?



Leaf edges

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gum leaf

Gum leaf

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This gum leaf has network veins and an entire edge. This description names the type of veins and the edge of the leaf. But what does this description mean?

The edges of the gum leaf are most like the entire leaf edge. This is why the gum leaf is described as having network veins and an entire edge.

Use the diagrams of 'Leaf veins' and 'Leaf edges' to help you identify the patterns of veins and the shapes of the leaf edges in the next activity.



Activity: Looking at leaves

Describe the veins and edges of each of the five leaves drawn below.

1 Geranium leaf



2 bougainvillea leaf



3 bottlebrush leaf



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4 rose leaf



5 dandelion leaf



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Check your response by going to the suggested answers section.

The features of leaves that you have been looking at are distinctive.

Are leaves useful for classifying plants?

Try to decide if leaves are a useful feature for classifying plants. In the picture below there are drawings of the leaves from a bottlebrush and a tradescantia plant.



callistemon (bottlebrush)



tradescantia

Two plants to compare

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Compare them. What are their similarities? What have they got in common?



Activity: Are leaves useful for classifying plants?

Describe the two leaves.

- bottlebrush leaf

- tradescantia leaf



This still doesn't answer the question of how plants are classified.

Both leaves have an entire edge and have prominent veins.

But from the drawing 'Two plants to compare', you can see that each plant is quite different from the other! Tradescantia is a soft-stemmed climbing plant whereas bottlebrushes are small woody trees.

And have you ever noticed that some gum trees have different shaped leaves on the same plant! Some plants don't even have leaves. This all adds to the trouble with using leaves in classification.

How then are plants classified?

In this lesson, you had a look at the difficulties of using leaves as a feature in classification. You can say that leaves are useful in describing plants. But leaves are not useful if they are the main feature used to classify plants.



This still doesn't answer the question of how plants are classified.

Now that you know that choosing a feature is not as easy as you might have thought, you can learn from the work of botanists in the past. From there, you will look at how modern botanists classify plants.

Do you remember what a botanist is?



A botanist is a scientist who investigates plants.

Usually at the end of a lesson, there is a summary for you.

This time, it is your turn.



Go to the exercises section and complete Exercise – Plant features.

What did you achieve?

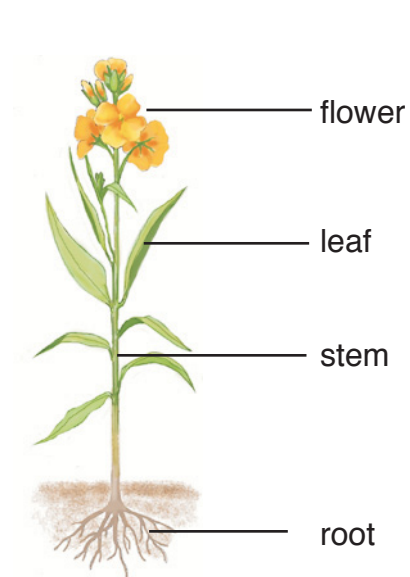
Tick what you can do.

- list some structural features of plants
- describe the leaves of different plants
- decide if leaves are a useful feature in plant classification.

Suggested answers

Check your responses against these suggested answers.

What are plants made up of?



A plant

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Looking at leaves

- 1 A geranium leaf has palmate veins and a crenate edge.
- 2 A bougainvillea leaf is entire with pinnate veins.
- 3 A bottlebrush leaf is entire with parallel veins.
- 4 A rose leaf has network veins and a dentate edge.
- 5 A dandelion leaf is lobed with network veins.

Exercises

Living things

Name _____

Teacher _____

Exercise: Plant features

Write a summary of the lesson that looks at the features of plants.

Summary

1 _____

2 _____

3 _____
