Lesson Plan Level 3: Science

Getting to know plants and trees

SmartSteps FOR PRIMARY SCHOOLS

AusVELS: Level 3

Science Understanding – Biological sciences (ACSSU044)
Science Inquiry Skills – Processing and analysing data and information (ACSIS057)

Suggested time

Before we go: 30 minutes
Walk: 20–30 minutes
When we get back: 30 minutes

Key learning outcomes

Students will be able to:

- recognise the features that characterise plants
- record and graph data about trees and plants in the local area

Lesson

Before we go

- Students work in small groups with a selection of leaves from different plants and trees. **Teacher note:** Identify any students allergic to plants and take the necessary precautions.
- Groups observe and discuss each leaf (e.g. shape, size, serrated edge) using the Tree and Leaf Shapes (p.3) handout. They can use the Leaf data chart (p.4) to record their observations or create their own.
- Groups share their *Leaf data chart* with the class. Create a class leaf features list. Discuss and sort all leaves according to the features list.
- Show students a variety of images of plants and trees (see Resources), discussing and recording their features. Features include shape (see *Tree and Leaf Shapes* handout), size, leaf cover and colour.
- Explain to students that they will be going for a walk around the local area to observe and record features of different plants and trees.
- Consider pairing students, and discuss the best way to record consistent observation data.
- Decide on key features to be observed and recorded on the walk and enter them on the Walk data chart (p.5). Demonstrate the use of the chart, explaining that each feature needs to be recorded only once for each plant or tree. The 'total' column will be completed after the walk.

Out and about

- Using the *Tree and Leaf Shapes* handout and the *Walk data chart*, pairs record observations of plant and tree features in a local area that has lots of trees and vegetation.
- Encourage pairs to carefully observe the features of each plant or tree.
- Periodically stop students and prompt their observations with questions such as:
  - What observations about plants and trees surprise you?
  - Have you noticed things about plants and trees you have not noticed before?
  - Are there any similarities or differences between the trees and plants?
- Encourage students to record any additional interesting observations at the bottom of their *Walk data chart*.

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When we get back

- Pairs tally the number of instances they observed a particular feature and write their totals on the *Walk data chart*.
- The class identifies the features that appeared the most and ranks the remaining features from highest to lowest by number of observations.
- Using a spreadsheet program, create a class features graph showing the number of observations of each feature on the interactive whiteboard.
- Pairs discuss why they think certain features were observed more frequently than others, referring to the *Trees and Leaf Shapes* handout if necessary.
- Collate ideas about the reasons for each feature. For example, thin leaves and sparse foliage are good for hot climates because they minimise water loss; some plants are perennials and flower at certain times; plants without leaves are deciduous – they lose their leaves in winter.
- Pairs write a statement and create an illustration, explaining the features of plants and trees in the local area using the data that they have collected on the walk.

Resources

- selection of leaves from different plants and trees
- Tree and Leaf Shapes (p.3) (one per pair)
- Leaf data chart (p.4) enlarged to A3 (one per group)
- picture reference materials (e.g. picture books, magazines, photos on an interactive whiteboard or tablets) of different plants and trees
- Walk data chart (p.5) (one per student or pair)
- plant expert from a local nursery or council – invite them to talk to the class about trees in the local area (optional)

Suggested assessment

Assess student's ability to:

- recognise and classify features of different plants and trees
- discuss data presented in a table and graph

Further connections

Students and their families could:

- take a similar walk in their neighbourhood and then compare their observations with the characteristics of trees and plants seen on the school walk
- create or collect photos of different trees to share with the class
- complete a Smart Steps: for Families - Activity Sheet at home

AusVELS Level 3

Strand	Sub-strand	Elaboration
Science Understanding	**Biological Sciences** Living thing can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)	• recognising the characteristics of living things, such as growing, moving, sensitivity and reproduction
Science Inquiry Skills	**Processing and analysing data and information** Use a range of methods including tables and simple column graphs to represent data and identify patterns and trends (ACSIS057)	• using provided tables to organise materials and objects based on observable properties • discussing how to graph data presented in a table • identifying and discussing numerical and visual patterns in data collected from students' own investigations and from secondary sources

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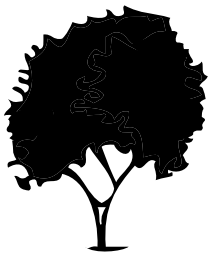
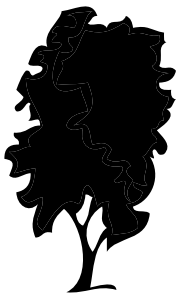
Tree and leaf shapes

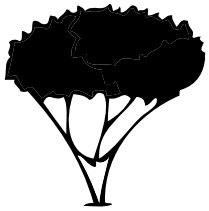
Tree shapes


Pyramidal


Round

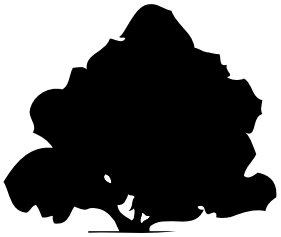

Oval


Columnar

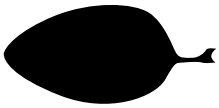

Vase

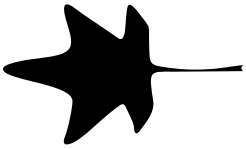

Weeping

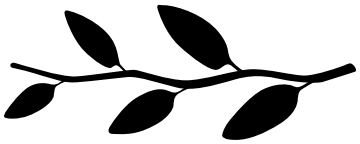

Spreading

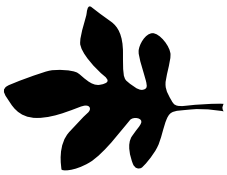

Layered

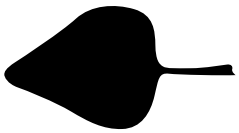
Leaf shapes

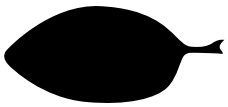

Ovate
egg-shaped,
wide at base


Palmate
like a hand
with fingers

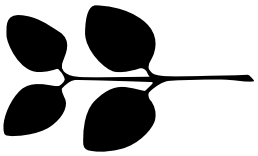

Alternate
leaflets arranged
alternately


Lobed
deeply indented
edges


Deltoid
triangular


Elliptic
oval shaped,
small or no point


Lanceolate
pointed at
both ends

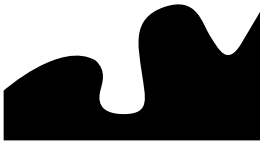

Opposite
leaflets in pairs

Leaf edges


Entire
smooth


Serrate
toothed


Sinuate
wavy


Lobate
indented

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Leaf data chart

Group name:

Leaf (Paste each leaf in this column)	**What are the features of the leaf?**

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Walk data chart

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Name:

Plant and trees features	Number of times I observed it	Total

Other interesting observations:

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