



Food

## MODULE 12

# Scientists sort plants into 'families' - Activity at the Botanic Garden

### TIME

2 hours am, 2 hours pm

### MATERIAL

6 labelled boxes - one for each plant family (mint, tomato, carrot, courgette, bean, and cabbage). A range of vegetables from the carrot, cabbage, tomato, cucumber, bean and mint families (see Media Gallery) Rulers, Magnifiers, Knives, Post-it notes, Photocopies of Media Gallery Food M12 Vegetable library, Set of cards (10) each with the name of a vegetable or fruit on (from a tropical glass house)

### SKILLS

Observing, Reasoning  
Scientific language

### KEYWORDS

Botanic Garden  
Diversity  
Conservation  
Classification  
Research  
Comparison  
Sepal  
Petal  
Stamens  
Stigma  
Nodes  
Roots  
Bud  
Stem leaves  
Flower

### CROSS-CURRICULAR ACTIVITY

Literacy – scientific  
language  
Geography  
Drama

## Overview

Children will visit a Botanic Garden to use the garden's wide range of plants and to see some vegetables growing. Botanic Gardens are centres for classification. Children build on the work completed in school from previous units of this module.

## Aims

To recognise that Botanic Gardens hold many diverse plants and conduct research into them. To name the parts of a plant, 'sort' according to characteristics and recognise that plants can be grouped into families according to their different characteristics, in particular using variations in flower, fruit, leaf or stem characteristics.

## Teaching sequence

### Morning

1. Brief explanation of the Botanic Garden and its role.
2. Children to recap, using a real plant, the 'parts of a plant'.
3. Children to recap the definitions of 'what is a fruit' and what is a 'vegetable'.
4. Whole class to discuss - why we, or scientists, want to identify a plant and how we might go about doing this.
5. Teacher to divide children into 6 groups, each group to sort the vegetables provided into their respective 'family' labelled box (by observing colour, skin, texture, smell, shape, leaves), i.e. for children who have the carrot box on their table, to sort those vegetables that they think belong to the 'carrot family' into the box.
6. Supporting image cards for each vegetable, showing: the whole plant, the flower, the fruit and, as appropriate, roots, will be available as extra research material for the children to use, see Media Gallery Food M12 Vegetable library.
7. Each group should then discuss with the class why they selected the items in their box and justify their answers with evidence. Unknown specimens can also be discussed.
8. Children walk in groups with their boxes to 'Order Beds' at a Botanic Garden or to a vegetable plot with appropriate signage that identifies plant families. Each group will look at plants in the family they have studied. Children should observe flowers, fruits, stems and any other characteristics to see if they have selected the right items for their box and to gather further evidence for their selection, Media Gallery Food M12 Check list for observing plants, can be used as suggestions if you need to prompt children as to what to observe.
9. In pairs, children write in their science notebooks the similarities and differences observed (3 pairs of observations per children pair per 'family plant group').
10. Groups are asked to move to plants in another family and repeat as many observations as time allows.



11. At the end of the observation period, children should be brought together for a plenary to discuss any new findings and either confirm or reject particular vegetables that they selected for their box, justifying their reasons with evidence.
12. On a post-it note each pupil writes one or more things that they have discovered. These notes will be collected and displayed on a wall chart.
13. Lunch session could include a class discussion about how many plants are in the children's lunch boxes and /or take the opportunity to discuss recycling of their left-over food and lunch wrappings (e.g. compost or rubbish bin).

### **Afternoon**

14. Brief tour of a tropical glasshouse to explore the broad diversity of edible plants and their scientific families. Botanic Garden educators will point out a number of key plants that are labelled and will draw attention to the features that children should be researching later to characterise their plant by, e.g. they will tell the children to think about whether the plant they are looking at is a tree or small herbaceous plant and what the leaves, flowers, fruits look like.
15. In the same groups, children are asked to investigate and make notes on one edible plant that the Botanic Garden educator has secretly allocated them (one of the plants they have seen in the glasshouse).
16. In their groups children go back to investigate their allocated plant, take notes from labels, discuss key characteristics and then create a poem, drama, mime or role play to describe their plant without mentioning its name.
17. The groups reconvene. Each group performs its drama, poem or role-play. At the end of each presentation the rest of class guess the name of the plant and give evidence as to how they knew what it was.
18. Children are shown a living plant from one of the 'family groups' they investigated in the morning – possibly a lavender or sage plant (something common but not necessarily seen earlier). Children are asked if they know which family it belongs to and what evidence they can give to prove that they are right.
19. 2 stars and a wish; in their science notebooks children write 2 key learning points from the day and make a wish.

### **Teachers' / Botanic Garden educator notes**

Before the visit: Helpers on the day should be given the visit programme and if possible attend the school lesson where children explore parts of a plant. Teachers and helpers can read notes on plant families and their characteristics available on Media Gallery Food M12 Plant families. A letter to parents before the visit should include the following.

Children will need: to wear appropriate clothing and footwear, a plastic bag (or similar) to sit on if grass is wet, adequate water to drink, a rucksack to carry equipment and lunch. H&S guidelines can be found in Background information or on Media Gallery. Teachers visiting the Botanic Garden will need to pre 'sort' the children into 6 groups. Children will be looking at vegetables from specific families and can observe the diversity of plants in these families.

Children will be looking for evidence to support their initial classification. They will need to take their science notebook and pencil on the visit. To create their poem, drama, mime or role play the children will need a plant name to work with that they should not mention to other groups. This can be any plant they have seen in the glasshouse. Make enough cards with a plant name on for the number of groups and laminate them for future use.

### **Extension Activity**

Botanic Garden educators could use concept cartoon F38 at some point during the day.

## Concept cartoon – Are these fruits? Are these vegetables?

