

SCIENCE learning springboards

Pappus

Living things and their habitats – working scientifically

Classification and plant ID keys

Aim: To give reasons for classifying plants based on specific characteristics, and to understand how botanists use keys.

Activity 1: Questions for keys

- Each team decides which plant they want to focus on. Find ones that are in your school grounds or locality, so that you have samples of each. These could be from the *Pappus* Top 15 plants, or any plant you can see in the grounds.
- Start with each team writing their own six clues, beginning with general points such as, “This is a large tree” and progressing to more detailed and specific such as, “The leaves are long and narrow”
- Each team then quizzes another team and allocate points according to how quickly a plant is identified. 6 points for the first clue, 5 for the second and so on.

This is a very general key, and the discussion should point towards the need for much more detailed questions, with Yes/No answers to be useful for accurate identification.

Activity 2: How do botanists do it?

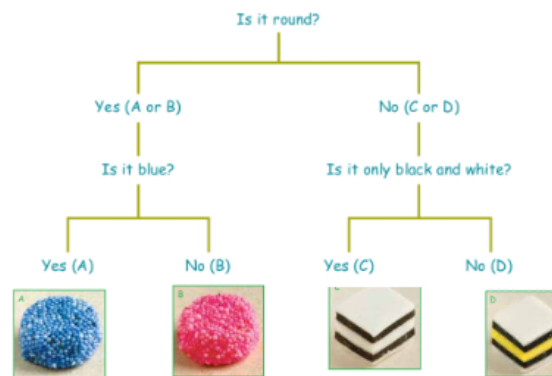
Botanists use special keys to eliminate items until the correct item is identified. A simpler version of this is the Yes/No key. To get an idea of how this works, see the Science and Plants for Schools (SAPS) example in the diagram shown, or you could use items of fruit, wiring implements and so on.

- Each team selects one of the *Pappus* Top 15 Plant ID sheets to check the level of detail used by botanists. For their own choice of plant, they write a branching key and challenge the other teams to find the answers.
- Find out about the significance of the work of scientists such as Carl Linnaeus, 1707, a pioneer of classification.

Activity 3: Don't be fooled by impersonators

- Pupils use the *Pappus* Plant ID sheets alongside plants sourced in the grounds or gardens, to compare plants with close impersonators
- As an example: compare stinging nettle and dead nettle, and other similar looking plants – the photo shows nettle on the right, and garlic mustard (also known as hedge garlic) on the left. These plants' flowers are very different, but their leaves and habits are similar. They frequently grow in the same places so are a rich source of materials for plant ID challenges.

Extension Task – look at botanists' dichotomous keys.



Resources:

- The *Pappus* Plant ID sheets – there are 15 in total containing detailed information that pupils can use to create branching keys – download from the *Pappus* website.
- The *Pappus* Plant Trumps cards are useful for sorting activities.
- Show pupils examples of simple branching keys.



Linnaeus
SAPS keys

More springboards:

- ✓ *Pappus* Plant ID sheets – see resources above.
- ✓ Science Springboard-famous. Plant hunters and botanists.

Key vocabulary:

Key, dichotomous key

Success criteria:

- ✓ Describe how to use classification systems and keys
- ✓ Identify familiar and unfamiliar plants using the system
- ✓ Make a simple branching key

