

Sorting, grouping and naming

→ Teacher Guidance

This section takes observation activities a stage further, so that children begin to recognise similarities and differences between objects and this leads them on to sorting the objects into groups. The groups that they make are based on their observations but they need to give reasons to justify their grouping. So from this, discussions can develop as to why we so often try to group things and why this becomes easier if we give names to objects (including living things). Grouping can then lead to classification. Just as there are different ways of grouping things, the children also begin to understand that there may be different ways of making a classification of living things. The choice of classification system often depends on the use to which it may be put. The first activity, which can be run at different levels, uses seeds for the objects to be sorted, and all sorts of interesting discussions can develop as the activity progresses.

Activity 1: Sorting seeds into groups

This activity is suitable for younger pupils, and helps them move towards making and using keys. It should also encourage them to make close observations and develop appropriate vocabulary. As they do the activity, they can be encouraged to consider the value and purpose of sorting and classifying. The activity is likely to spread over two sessions.

Resources and preparation for the activity

Children should work in pairs and each pair has a selection of seeds in a small pot or other container with a lid. You can obtain a suitable range of seeds from supermarkets and health food shops. As these are for eating, this avoids risks that might be associated with seeds from other sources. The list below gives some ideas for you to choose from.

- Suggested seeds to choose from: avocado; various beans (e.g. black beans; Borlotti beans; butter beans; haricot beans; kidney beans; mung beans; soya beans); chick peas; dried peas; lentils; mango; poppy seed; sunflower; sweet corn (maize); wheat

Other resources

- small pot (such as a yoghurt pot) per pair of pupils (to put the seeds in)
- trays or large sheets of paper (to prevent the seeds falling off tables)
- hand lenses
- rulers
- access to photographs of seeds and plants (an opportunity to use IT skills to search the website for suitable images)



In the pot for each pair of children, put at least 10 different kinds of seeds. Include a range of different sizes. They need at least 1 or 2 of each seed, but several for the very small seeds.

The activity

Start by giving one seed to each pair of children. A sunflower seed is good for this part of the activity. Let them look at the seed and talk about it, using appropriate vocabulary. Ask them to describe it in as much detail as possible. Use every opportunity to be accurate. If, for example, they say it is 'small', let them measure it. They may ask whether it is dead or alive, so they can try to work out if it fits any of the Mrs GREN categories.

Then produce the pot of seeds and ask the children to 'sort' them. Five minutes is enough for this, and it doesn't matter if you stop them before they have finished. Ask them to talk about the groups they

made and say what they did and why. List the features that they used to separate the seeds. Insist on accurate vocabulary. Depending on your selection of seeds, the children are likely to include words such as smooth, rough; small, big (with measurements); patterns and shapes; colours; hard, soft. You can build up a vocabulary list on the board as they do this.

This part of the discussion can go in different ways, depending on their grouping. Various questions may pop up ... What sort of plants do they grow into? ... Do the biggest plants have the biggest seeds? ... Are they alive?

Further discussion can lead on to who needs to identify and sort seeds, and why. Here are some ideas that may be brought into the discussion.

- birds – goldfinches prefer *Niger* seeds, blue tits love peanuts and chickens like black sunflower seeds
- cooks – haricot beans make baked beans, but red kidney beans are poisonous at one stage of cooking!
- gardeners – if they want a lettuce, they don't plant runner bean seeds!
- farmers – they grow a lot of our food and the supermarkets ask them to grow particular fruits and vegetables

For the final part of the activity, get the children to choose two seeds. Give them hand lenses and ask them to draw the two seeds to highlight the differences between them. They need to use appropriate vocabulary for the labels and they can refer to the bank of words put up on the board.

Useful images of seeds can be found on various websites. Try www.theseedsite, googleimages or other search engines.

You may decide to obtain seeds from other sources, such as: garden centres or similar outlets (for sowing); pet food shops (e.g. 'bird seed'); or collected from an area outside, say around the school. Seeds you might obtain from these sources include: acorn (oak); ash; beech; conker (horse chestnut); dandelion; gourd; pumpkin; sycamore... and a coconut! These sources increase the range of seeds the children can sort, but you should be aware of possible risks and that some seeds may be poisonous.



Note that seeds for sowing may be dusted with fungicide or other chemicals and that mixtures of 'bird seed' may contain peanuts. In all cases, whilst handling seeds, you should make sure that the children do not put their fingers in their mouth and that they wash their hands at the end of the activity. Generally, seeds being sold for food are the safest to use. Teachers are advised to obtain further information from appropriate organisations, such as ASE, CLEAPSS or SSERC.

Further activities

1. At some point, it is a good idea to show them some familiar seeds. This can be done on an interactive whiteboard or other suitable method in the classroom.
2. Repeat the exercise and see if there are other ways that they can sort the seeds. They may then begin to see that each seed ends up in a group of its own.
3. Look in a supermarket at the huge variety of fruits and vegetables. See if they can find any seeds in a vegetable or fruit and bring them to school.
4. Try to answer the question: Is the size of a seed related to the size of the plant it grows into? Think about a broad bean seed and an acorn. They are about the same size as seeds, but what size plant do they each grow into?

Note. Strictly speaking some of the 'seeds' listed above are fruits containing a single seed, but for this activity, treat all as seeds.

Curriculum links

National Curriculum (Sc2)

QCA guidelines – Scheme of work

Scottish ISE 5-14 framework/attainment targets

KS1: 4b. KS2: 3d

Unit 2B; Unit 2C

LT-B2.4

Sorting, grouping and naming

→ Teacher Guidance

Activity 2: Sort it! – a game with cards

This activity is based on the card game 'Happy families'. There are 24 cards in the pack, made up of six sets of four cards. The game takes further some of the ideas established in Activity 1 (Sorting seeds into groups) – see page 15. The game is most suitable for older children.

While playing the game, children have opportunities to:

- practise sorting objects into groups
- learn that there is usually more than one way of sorting objects into a group
- appreciate that it helps to have names for objects when trying to sort them

Preparation for the game

You will need one pack of cards for each group in the class. The master sheet (Figure 8) shows the complete set of cards (reduced size). You can use this page as a template to prepare your pack of cards. Enlarge the page by photocopying from A4 to A3 and this will give you suitable sized cards to use for your pack. Full-sized templates of each set of cards and a master sheet are given on the SAPS website. Download these and print sets of the 24 cards. You can print onto normal paper, then paste this onto card (e.g. use spray mount), or print straight onto a suitable weight of card. Don't show the master sheet to the children until they have attempted to sort their own pack of cards into groups.

Playing the game

This game is best played with three to four players, but can be played with two. There are several stages as they progress through the game.

1. Give each group a pack of 24 cards. Ask them to spread the cards out (face upwards) and then sort them into groups in whatever way they like. Give them several minutes to discuss this. Then the children report back to the rest of the class saying how they have sorted their cards and their justification for doing so.
 - They should find lots of different ways of sorting the cards into groups. As they do this, make the point that most objects, including living things, can be sorted in different ways. Then tell them that the person who devised the game of 'Sort it!' actually divided the cards into six sets of four cards.
2. Ask the children if they can sort the cards into six sets of four cards. Again, let them discuss how they decided to group their cards.
3. The 'master sheet' (Figure 8) shows how the six sets of cards can be grouped into families, using certain characters. If the children haven't grouped their cards in this way, you can then show them the master sheet. Discuss with the children the characters that were used to put the cards into the 'families' shown on the master sheet.
4. Next explain how to play 'Sort it!' with the cards and give each group a chance to play the game. (The game is based on 'Happy families' – see 'Plant quartet' on page 34 of *Living processes and what plants need to grow* for an outline of how to play).
5. After a few minutes of playing the game, ask if they are having any problems or discuss how they could make the game easier to play. Guide the discussion towards the value of using names for the families.
6. Let them give names to the families and then play the game again. Finally, the children can complete the activity by colouring the cards.

Curriculum links

National Curriculum (Sc2)

QCA guidelines – Scheme of work

Scottish ISE 5-14 framework/attainment targets

KS1: 4b. KS2: 3d

Unit 2B; Unit 2C

LT-B2.4

Sorting, grouping and naming

➔ Teacher Guidance

Sort it! Master sheet for the six families of cards

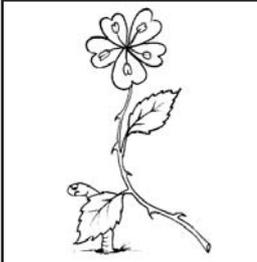
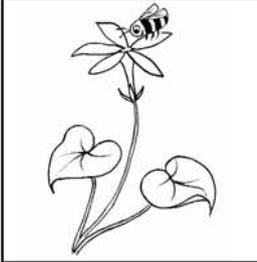
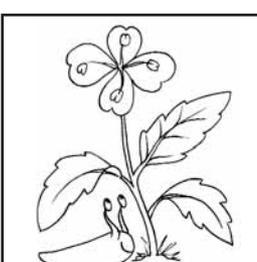
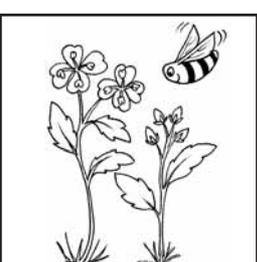
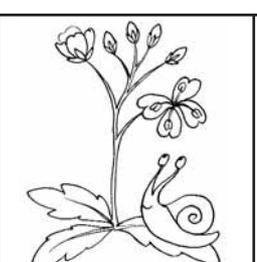
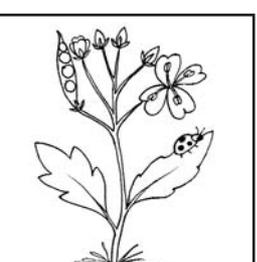
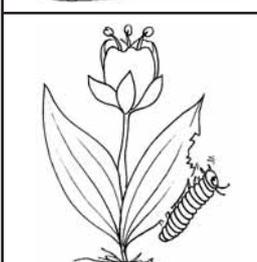
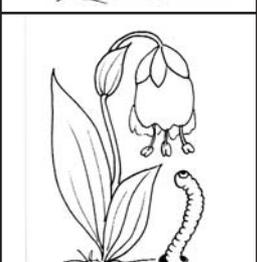
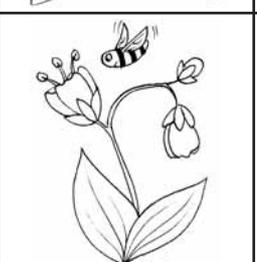
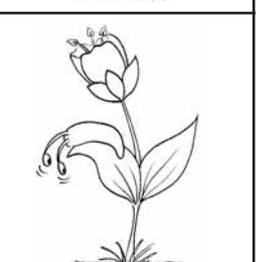
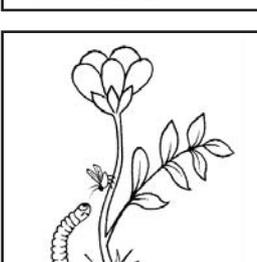
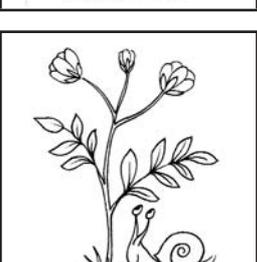
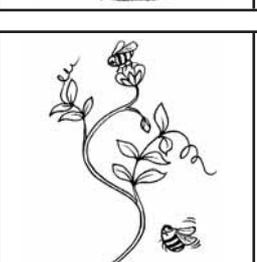
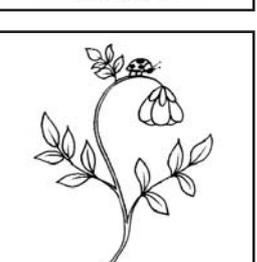
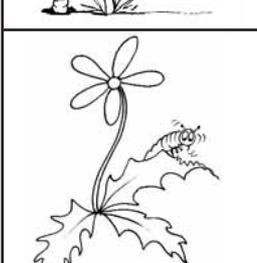
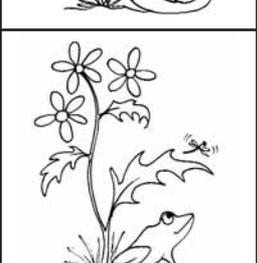
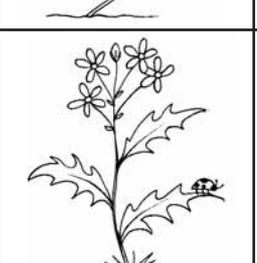
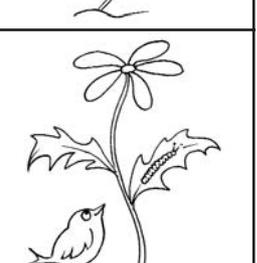
Family 1				
Family 2				
Family 3				
Family 4				
Family 5				
Family 6				

Figure 8. Sort it! - master sheet. This master sheet shows the complete set of cards (reduced size), grouped into 'families', based on certain features shown by the different plants on the cards. This page can be used as a template to make a pack of cards (see instructions on page 17). Full-sized templates are available on the SAPS website.