Unit 1

Teaching ideas

Background knowledge

Some things are alive, some are dead and some things have never been alive. The characteristics of living things are movement, respiration (needing air), sensitivity, growth, reproduction, excretion (producing waste) and nutrition (needing food and water). Learners do not need to memorise these characteristics at this stage, but they should start to think about the differences between things that are alive and things that are not. Some objects, such as rainbows and fire, may confuse learners.
Be aware that some learners may not have experienced the death of a relative or a pet at this stage. However, some learners will have had this experience, perhaps recently. Treat this topic with care.

Living things inhabit local environments. An environment needs to provide food and shelter for animals. An environment needs to provide suitable soil and the right amount of water and light for plants. (Plants need nutrients from the soil.) Animals and plants also need protection from predators (including humans) to survive. Different animals inhabit the same and different environments. For example, a bat and a pigeon may live in the same local habitat but eat slightly different foods, find food in different ways and sleep in different places. Some animals live in their natural habitats. Some animals are kept in unnatural habitats such as zoos. You may wish to talk about the work zoos undertake in the field of conservation in terms appropriate to the learners' age.

Animals produce young. These young grow into healthy adults who themselves produce young. Plants also have young. They produce seeds in the flower which are dispersed, for example, by wind or by insects. Insects also help in the fertilisation of seeds. The reproduction of plants is beyond the scope of this unit, but learners may ask about it.

Humans need a healthy diet. Some foods are healthy, for example, fruit and vegetables contain fibre, minerals and vitamins. Other foods are less healthy, for example, high sugar foods. Too many of these foods can lead to tooth decay and obesity. A healthy lifestyle is important and includes healthy food choices, exercise and the right amount of sleep. Remember that learners at this stage will not have much control over their diet. Treat this subject carefully.

Unit overview

Topic	Number of lessons	Outline of lesson content	Resources in Learner's Book	Resources in Activity Book	Resources in Teacher's Resource
1.1 Animals and plants alive!	2	Learners find out that there are living things and things that have never been alive.	Activity 1.1 SE Su	Exercise 1.1 L Su	Worksheet 1.1a SE Ex Worksheet 1.1b L Su Resource sheet 1.1 L Su
1.2 Local environments	2	Learning about the local environments which suit different animals and plants. Learners explore this for themselves.	Activity 1.2a SE Activity 1.2b SE Ex	Exercise 1.2 SE L Su	Worksheet 1.2a SE Ex Worksheet 1.2b L Su Resource sheet 1.2a L Su Resource sheet 1.2b L Su Resource sheet 1.2c L Su
1.3 Animal babies	2	The focus in this lesson is baby animals and their parents. Learners make a model nursery for an animal of their choice.	Activity 1.3 SE Ex	Exercise 1.3 SE L Ex	Worksheet 1.3 SE Ex Resource sheet 1.3a L Su Resource sheet 1.3b L Su Resource sheet 1.3c L Su
1.4 Healthy food and drink	2	This lesson looks at the range of healthy and less healthy foods.	Activity 1.4 SE L Su Ex	Exercise 1.4 L Su Ex	Worksheet 1.4a SE Ex Worksheet 1.4b L Su Resource sheet 1.4a Su Resource sheet 1.4b Su
Check your progress			Questions 1 Su, 2 Su, 3 L, 4 L		Worksheet 1.5 L

Ex Extension L Language SE Scientific enquiry Su Support

Resources

- clipboards (one per pair or group)
- digital cameras (optional)
- safe invertebrates, such as snails or woodlice
- water and food trays
- bird seed
- modelling material or construction kits
- cardboard
- scissors
- glue
- sticky tape
- nursery items such as food, water, shelter
- pictures of food to cut out
- fruit and vegetable examples, or pictures of food plants that grow locally
- small samples of fruit
- skewers

Topic 1.1 Animals and plants alive!

This topic will allow you to find out about the learners' understanding of the range of living things and see whether they understand the distinctions between living and non-living and never been alive.

Learning objectives

- Know that plants and animals are living things.
- Know that there are living things and things that have never been alive.
- Try to answer questions by collecting evidence through observation.
- Record stages in work.

Curriculum links

- This topic links to environmental studies as the learners are looking at the range of living things in the world. This should help them appreciate the beauty and wonder of the natural world and realise that it is something that should be cared for.
- There is an opportunity to link to Mathematics in Activity 1.1 if learners are involved in sorting and classifying living things, comparing their heights and measuring them using standard and non-standard units.

Ideas for the lesson

- Look at the picture on page 6 of the Learner's Book and talk about things in the picture that are alive and things that have never been alive. Alternatively, you could use Picture 1.1 on the Cambridge Elevate edition which includes further examples.
- Activity 1.1 in the Learner's Book asks learners to go outside and observe living things. Higher achieving learners could use Worksheet 1.1a, which asks them to predict what living things they will find. Making predictions is an important scientific enquiry skill to be developed at this stage.
- An alternative to making a tour of the school grounds with the learners would be for you to collect examples from around the school, such as pets and plants. Learners should not forget that humans are also living things, so you can talk about adults and young people too. Worksheet 1.1a can be used for this alternative as well. Here, the learners think about the living things they might find, note the living things found and are encouraged to group them into animals and plants, allowing them to practise the science skills of sorting and grouping.
- Use Exercise 1.1 in the Activity Book to encourage learners to talk some more about living things and non-living things in the context of a pet and garden centre. Learners are asked to talk about how the pet and garden centre owner cares for the animals and plants in her shop. Learners might think about drink, food, space and the home provided for the animals, or the water and light provided for the plants.
- Worksheet 1.1b gives further support in talking about living and non-living things. It is set in the context of a farm, which links with the next topic on environments.
- Resource sheet 1.1 provides the words to learn for this topic. You could use these to support lower achieving learners, or use them to start a wall display for this unit. Learners could produce pictures of animals and plants to go in the 'alive' section of the display, and pictures of, for example, tractors, rocks and clouds, to go in the 'non-living' section of the display.

- Ask learners to tell you about animals and plants that they see in the environment.
- Talk about the photographs on page 7 of the Learner's Book. Ask learners to identify things that are living and things that are non-living. Picture 1.1 on the Cambridge Elevate edition might come in useful here as well. Higher achieving learners should be expected to give reasons for their answers; for example, living things need food and water, living things can move, and living things have young.
- You could end the lesson by asking learners questions such as: Is a rainbow alive? Which is alive, the nest or the bird?

Notes on practical activities

Activity 1.1

Each pair or group will need:
- clipboard
- digital camera (optional).

Allow learners the opportunity to observe in the school grounds. Tell them that the search outside is to answer the question 'What living things can we find?' and that they will be collecting evidence through observation (looking). This is a scientific enquiry skill required at this stage. Learners can develop recording skills by making sketches or taking photographs of the living things they find. This will encourage them to look at the plants and animals outside and recognise them as living things (make sure that learners are able to distinguish between living things and non-living things). Focus the learners' attention on where plants grow and where animals are observed, for example in trees, under logs or stones and in the soil.

Give learners an objective, for example, to find six things. This will encourage them to look harder. Another way to encourage careful observation is to ask questions such as 'What is the tallest living thing you can observe?' This question could also be linked to mathematics if you involve the learners in comparing heights and measuring using non-standard and standard units.

Higher achieving learners could use Worksheet 1.1a for this activity. This worksheet asks learners to predict what living things they might find before they start the search and to record those they do. Comparing what happened with predictions is another scientific enquiry skill to be developed at this stage.

Check (as far as possible) that the areas that you visit are free from poisonous or stinging plants. Also check for any allergies to plant material and for hayfever. Make sure that learners wash their hands after the activity.

Ensure that learners are well-supervised at all times, particularly in areas where there may be vehicles.

Internet and ICT

- The website www.bbc.co.uk/nature/collections/p00fxfvq includes a film of baby animals. It would be a great starting point for talking about animals. However, make sure you watch it beforehand to check there is no content that would be inappropriate for your learners. The film is well signposted and you could choose not to use all of it.

Assessment

- Can learners describe animals or plants as living things? Give learners pictures or real examples. Can they talk or write about the features?
- Can learners identify living things and things that have never been alive? Ask learners to sort pictures of living and non-living things. They might colour code them.
- Learners could self-assess their drawings from Activity 1.1. Ask them to say two things that they think are good about them and one thing that they would like to improve.
- Higher achieving learners could self-assess the accuracy of their predictions about what living things they would find in Activity 1.1, as recorded on Worksheet 1.1a.

Differentiation

- Support lower achieving learners by selecting very familiar examples of living and non-living things and assisting them with vocabulary. As stated previously, Resource sheet 1.1 could be useful for this group of learners.

- Higher achieving learners could be asked to make predictions about what living things they might find in Activity 1.1 and record them using Worksheet 1.1a.

Common misunderstandings and misconceptions

- Learners are often confused about whether the following are living things or non-living things: a river, a cloud, a clock, a rainbow, a flame.

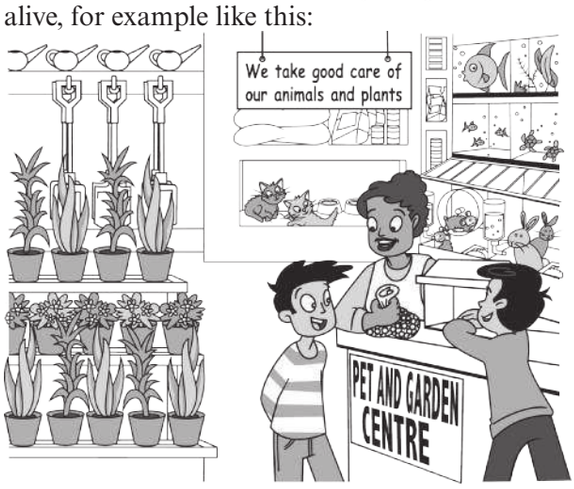
Homework ideas

- Worksheet 1.1b.
- Ask learners to draw four of their favourite living things. These pictures could be used for a wall display for the unit, as suggested as a lesson idea.

Answers to Activity Book exercise

Exercise 1.1

Learners should colour in everything that is alive, for example like this:



Learners are asked to talk about how the pet and garden centre owner cares for the animals and plants in her shop. Learners might think about drink, food, space and the home provided for the animals, or the water and light provided for the plants.

Answers to Worksheets

Worksheet 1.1a

Prediction: accept any sensible suggestions about the living things that might be found.

Results of observation: what living things were found.

Sorting: learners create a set of animals and a set of plants.

Worksheet 1.1b

The following things should be circled: goat, horse, cow, sheep, duck, bird, chicken, goose, trees, flowers, grass and bushes.

Topic 1.2 Local environments

This topic encourages learners to think about the many local environments that animals and plants live in. Living things often share a local environment but live quite different lives.

Learning objectives

- Explore ways that different animals and plants inhabit local environments.
- Make predictions.
- Explore and observe in order to collect evidence (measurements and observations) to answer questions.
- Make comparisons.
- Compare what happened with predictions.
- Model and communicate ideas in order to share, explain and develop them.

Curriculum links

- This topic links to environmental education. It is about living things living in local environments. Learners might find out about a local environment and think about the impact which people have, or might have, on it.
- Activity 1.2b links to Design and Technology when learners are asked to design a way to help birds.
- There are opportunities to link to literacy if you use the stories suggested in the ideas for the lesson.

Ideas for the lesson

- Use the large picture in the Learner's Book on page 8 to find out what learners know about animals and the local environments in which they live. Alternatively, you could use Picture 1.2 on the Cambridge Elevate

edition, which shows a variety of animals in different environments. If you use this picture you might ask higher achieving learners to suggest why the environments are suitable for the animals shown in the pictures. Suggesting ideas is an important scientific enquiry skill to be developed at this stage.

- Remind learners about Worksheet 1.1b. What animals were there on the farm? Talk about what a farm does. Point out that some farms produce crops (plants that we eat), some produce animals that we eat (many learners may not make the link between animals on farms and the meat they eat – treat this subject with care) and some produce both.
- You could read the story of *The Gruffalo* by Julia Donaldson. All the animals have different houses and yet they live in the same woods. They all want to eat the mouse. What else can they eat?
- Ask learners to talk about animals they see in the local area. These may be pets (animals kept in the home), farm animals and wild animals. Ask them to talk about how wild animals choose where to live and that they must have certain things (food, water, shelter, and so on).
- Hand out animal pictures to half the class. To the rest, hand out pictures of environments. (You will find suitable pictures on Resource sheets 1.2a and 1.2b.) Ask learners to speak to one another and to match each animal with an environment it could live in.
- Bring some safe invertebrates, such as snails or woodlice, into class for a few days. Ensure that you care for them well and ask learners to talk about their care. Discuss where these animals are found. Ensure you return the animals to their natural environments after you have studied them, and explain to learners why you must do so.
- Ask the learners to think back to what they did in the last lesson. Where did they find living things in the school grounds? At this point learners could do Activity 1.2a. This activity introduces learners to environments where plants grow. Ask learners to predict where they might find plants growing in the school grounds. Higher achieving learners could record their predictions on Worksheet 1.2a. Take the class outside to observe plants growing. Focus their attention on where plants do and do not grow.
- Most schools have birds visiting the site during the school day. Before introducing Activity 1.2b, you might use the extension activity to ask learners to observe (look at) the birds and where they are seen. Learners can then carry out Activity 1.2b to design a feeding station for the birds. Point out that providing food and water makes the environment better for the birds. The availability of food is very important in making an environment suitable for an animal or plant to live in.
- Exercise 1.2 in the Activity Book involves matching animals to their environments. It allows learners to make comparisons. You could use it to start a discussion or as a quick assessment of learners' knowledge and understanding.
- Worksheet 1.2b could be used to support lower achieving learners. Learners are asked to cut out pictures of animals and stick them or the picture of the environment they live in.
- Resource sheet 1.2c provides the words to learn for this topic. You could also use these to support lower achieving learners. Add them to the wall display for the unit. Learners could be asked to draw some different environments, things you would find on a farm (for example animals, crops and objects such as tractors), and pets (domestic animals) to add to the display.
- You could use these questions at the end of the lesson: Where do birds build their nests? Why does a frog live near water? What does a plant need to grow? (The final question is more suitable for higher achieving learners, unless you have already taught Unit 2.)

Notes on practical activities

Activity 1.2a

Each pair or group will need:

- clipboard
- digital camera (optional).

Before going outside, learners should predict where they might find plants growing. Allow learners to then examine areas on the school site that are different in character, for example, a place where there is lots of good soil and a place where there is not much soil. Tell them that the search outside is to answer the question 'Where do plants grow?' and that they will be collecting evidence through observation (looking). This is a scientific skill required at this stage. Learners could consider environments that are very unsuitable for plants (a roadway) and more suitable areas (a flower bed or field). Encourage learners to talk about what they observe and to explain what they see.

Ask learners to identify the features that plants appear to like, for example, soil to grow in, space to grow, little disturbance and water. Learners can develop the scientific enquiry skill of recording stages in work as they record what they find using drawings, photographs or both. Higher achieving learners can record their predictions and their findings on Worksheet 1.2a. All learners can compare their findings with their predictions. They can also make comparisons between different areas in terms of how many plants they found. Making comparisons and comparing what happened with predictions are both scientific enquiry skills to be developed at this stage.

As in Topic 1.1, check (as far as possible) that the areas that you visit are free from poisonous or stinging plants. Also check for any allergies to plant material and for hayfever. Make sure that learners wash their hands after the activity.

Ensure that learners are well-supervised at all times, particularly in areas where there may be vehicles.

Activity 1.2b

Each pair or group will need:

- water and food trays
- bird seed.

The resources above can be used to illustrate the requirements for a feeding station. Learners will develop important scientific enquiry skills here associated with modelling and communicating ideas.

Begin by asking the learners to talk about the birds they see on the school site. Encourage them to talk about the different types of birds (describing the differences in appearance, at least). Allow the learners to look outside for a short period of time (five or ten minutes). Can they see birds? Where do they see birds?

Ask learners to talk with others and to think about how they might design a bird feeding station. What would they include? A perch? Water? Food? A roof? There is the opportunity here to practise the scientific enquiry skill of modelling and communicating ideas in order to share, explain and develop them. Ask the learners to draw sketches to show their ideas. If you have time, and appropriate materials, then you might ask learners to make the feeding station they have designed.

You could challenge learners further by asking them to suggest ways that they could encourage more birds. As well as providing food directly, this could involve sowing seed-bearing plants or plants that will encourage insects.

Internet and ICT

- The website www.bbc.co.uk/learningzone/clips/how-have-different-animals-adapted-to-their-habitats/12665.html shows animals in their habitats. Turn the sound down and ask the children to talk about what they see. The film shows lizards, penguins, camels, birds and bats. Make sure that all these are culturally appropriate before using the film.
- The website www.sebastianswan.org.uk/swan/bksw.html is an online book about the life of Sebastian Swan. This could lead to thought and discussion about the places that swans and other birds and animals live.
- The website www.gruffalo.com/ is the official website for all things connected to *The Gruffalo* story.

Assessment

- Can learners describe the ways that different plants live in local environments? You might make use of Worksheet 1.2a to elicit the ideas of the learners.
- Can learners describe the ways that different animals live in (inhabit) local environments? Ask learners to talk about local environments, and how animals live there,

for example in a lake, up in a tree, amongst the bushes. You could use Activity Book Exercise 1.2 to make a quick assessment of learners' knowledge.

- Learners could self-assess Activity 1.2a by thinking about what they did well and what they would like to improve if they repeated the activity.
- Learners could look at another learner's design for helping the birds in Activity 1.2b and say two things they like about it and one thing that could be improved. Higher achieving learners should be asked to explain how this thing could be improved.

Differentiation

- Lower achieving learners would benefit from being provided with extra support in terms of structure in tasks, modelling and vocabulary support (Resource sheet 1.2c would be useful for this). The matching activity, Exercise 1.2, would be particularly suitable for this group of learners. You could use a story format, as in *The Gruffalo* or the story about Sebastian Swan. Provide opportunities for learners to talk about what they see. Be prepared to challenge them as appropriate, to give them the opportunity to develop their ideas.
- Cater for higher achieving learners by asking them to make a number of suggestions and to explain what they think. For example, when talking about a desert environment you might ask them the question: 'Why don't many plants live here?'

Common misunderstandings and misconceptions

- Learners may not realise that wild animals choose where they make a home, for example a nest, very carefully.
- Learners may not realise that wild animals living in the wrong place will have to move or they will die.

Homework ideas

- Exercise 1.2 in the Activity Book.
- Worksheet 1.2b.
- Ask learners to list the living things they can see from a window at home.

Answers to Activity Book exercise

Exercise 1.2

goat – field
duck – river
crab – seashore
bird – tree

Answers to Worksheets

Worksheet 1.2a

Prediction: accept any sensible suggestions about where plants might grow.

Results of observation: where plants were found.

Worksheet 1.2 b

forest: owl, deer, squirrel

river and bank: duck, swan, fish

seashore: crab, starfish, sea bird, dolphin (**Note:** fish may be placed here.)

Topic 1.3 Animal babies

This topic appeals to learners' interests in animals and in young animals in particular. It refers to the young of a number of animals and how these young can grow into healthy adults who themselves can have young.

Learning objectives

- Know that humans and other animals produce offspring which grow into adults.
- Suggest ideas and follow instructions.
- Record stages in work.
- Model and communicate ideas in order to share, explain and develop them.

Curriculum links

- This topic only discusses the offspring of humans and animals. However, you could make a link to Unit 2, where young plants are discussed, and point out that plants also have 'babies'.
- There are links with Design and Technology as learners will design and make a nursery for young animals.

Ideas for the lesson

- Talk about the picture of adult and baby animals on page 10 of the Learner's Book. Alternatively, you could use Picture 1.3 on the Cambridge Elevate edition, which offers the opportunity to extend the examples being considered to include young that look very different to their parents. Talk to the learners about adults and their young, using the questions in the Learner's Book as a guide for the discussion. The picture of the animal nursery illustrates a number of talking points, for example, 'What are the zoo keepers doing?' You could talk about the years of care humans give to their young, then compare this example to that of a baby duck who is only looked after by its parents for a few weeks.
- If possible, arrange a class visit to either a zoo or a farm to look at animals and their babies.
- The website www.fossweb.com/modulesK-2/AnimalsTwobyTwo/index.html could be introduced at this point.
- Resource sheets 1.3a and 1.3b provide pictures of baby animals and the adults. Learners could play a matching game using these pictures. This game would be particularly suitable for lower achieving learners.
- Talk briefly about the needs of animals: shelter, food and water.
- Activity 1.3 asks learners to make a model of a nursery for an animal. Higher achieving learners could be asked to draw a plan of their nursery before they make it. They could use Worksheet 1.3 to record their ideas and help to develop the scientific enquiry skills of suggesting ideas and recording stages in work.
- You could use Activity 1.3 to begin a discussion about how to care for young animals and humans. Some learners may have younger siblings or young pets they can talk about.
- Resource sheet 1.3c gives the words to learn for this topic. These could be used to support lower achieving learners. You could also add them to the wall display for this unit. Ask learners to draw pictures of adult and baby animals (including humans) for the display.
- Exercise 1.3 in the Activity Book can be used to reinforce the idea that babies grow. Explain that in time young animals grow into adults. This exercise also extends learning and gives learners the opportunity to practise comparing, predicting, modelling and communicating, and deciding what to do to answer a science question.
- Play the game: I am a ……. , my babies are called ……. . For example, I am a cat, my babies are called kittens. This is an opportunity to work on vocabulary.
- You can use the following questions to summarise the learning in this lesson: Are most young animals like their parents? What is a young goat called? Why do some animals have lots of babies? The last question is particularly suitable for higher achieving learners as it involves understanding the dangers that young animals face in the wild, linking back to Topic 1.2 about environments.

Notes on practical activities

Activity 1.3

Each pair or group will need:
- modelling material or a construction kit
- cardboard
- scissors
- glue
- sticky tape
- nursery items such as food, water, shelter.

Models could be made from paper and card, modelling material, clay or a construction kit. Learners can design an ideal nursery for an animal of their choice. Ask learners to think about what should be included in their nursery, for example, a bed, a shelter, water, food and a space to play. Higher achieving learners could be asked to plan their nursery more carefully and record their ideas on Worksheet 1.3. This activity is an opportunity for learners to talk about the needs of young animals for food, water and shelter. They should suggest, model and communicate ideas. These are all important scientific enquiry skills to be developed.

The picture on page 11 of the Learner's Book shows a baby monkey. If learners are unable to think of a baby animal of their own, then they could design a nursery for this baby.

Internet and ICT

- The website www.fossweb.com/modulesK-2/AnimalsTwobyTwo/index.html includes a simple game with photos of baby animals which need to be matched to photos of adult animals. Most of the matches are straightforward and this might be especially beneficial for lower achieving learners.
- Learners could make a presentation of photos of themselves as babies, or of their younger siblings.

Assessment

- Learners can look at another learner's nursery from Activity 1.3. They should say two things that they like about the design and one thing that they would like to change. Higher achieving learners should be asked to say why and how they would change this one thing.

Differentiation

- Support lower achieving learners by providing many concrete examples and opportunities to talk about what they see and their experiences. Resource sheets 1a–c may be useful for these learners. Assist with their vocabulary. This group will find the website mentioned above particularly useful.
- Cater for higher achieving learners by expecting them to be able to talk about a wide range of animals and their babies. This group could be introduced to the idea of life cycles. Challenge them with more examples, for example by making use of Picture 1.3 on the Cambridge Elevate edition.

Common misunderstandings and misconceptions

- Some learners may think that babies are identical in every way to the adults they grow in to, but smaller. Explain that babies are often similar to adults, but that they develop as they grow. Some young, particularly invertebrates, and some birds, amphibians and reptiles, are very different from their parents. A wider range of examples can be considered on Picture 1.3 on the Cambridge Elevate edition.

Homework ideas

- Ask learners to choose two animals, find out something about them and draw pictures of the adult and young.

Answers to Activity Book exercise

Exercise 1.3

1 The baby is growing.
2 Learners should draw a slightly larger footprint.
3 Sheena will need bigger shoes.
4 Accept any sensible suggestions about taking measurements of the baby's hand growth.

Answers to Worksheets

Worksheet 1.3

Animal: any suitable animals may be chosen.

Animal's needs: accept any sensible suggestions, for example, shelter, food, drink, environment.

Materials required: accept any suitable suggestions of what materials would be needed.

Drawing: learners draw their nursery ideas.

Topic 1.4 Healthy food and drink

In this topic, learners have the opportunity to think about healthy and less healthy foods. They are asked to think about a range of foods and to compare what they eat themselves to healthy foods. They learn that many foods are good for you, but that some should only be eaten in small quantities at any one time.

Learning objectives

- Know about the need for a healthy diet, including the right types of food and water.
- Suggest ideas and follow instructions.
- Record stages in work.
- Make comparisons.

Curriculum links

- You can make a link to Unit 2 if you explain that fruit and vegetables come from plants. Learners could be encouraged to think about which parts of the plant are used for food.