

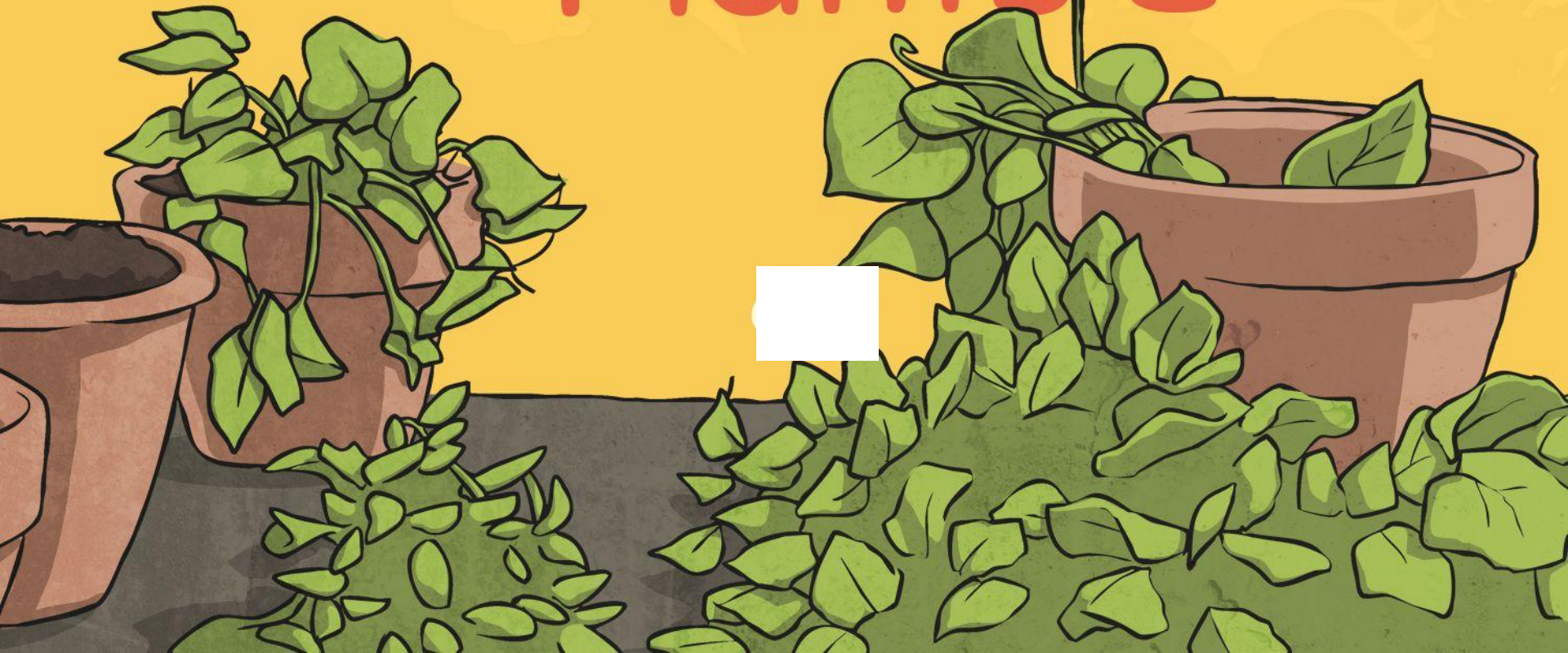


Science

Living Things and Their Habitats



Making New Plants 2





Aim

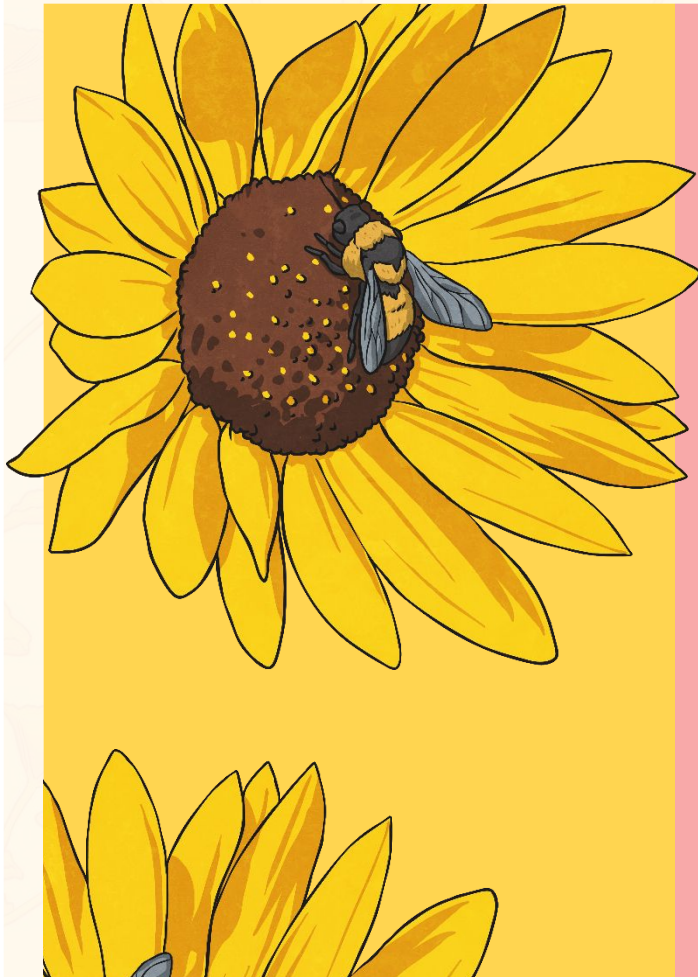
- I can describe how some plants reproduce.

Success Criteria

- I can describe asexual reproduction in plants.
- I can identify advantages and disadvantages to sexual and asexual reproduction in plants.
- I can explain different ways to make new plants.



Asexual Reproduction



Some plants use sexual reproduction to make seeds, which grow to make new plants. These plants need pollen (containing the male gamete or sex cell) from one flower to fuse with the ovule (the female gamete) of another flower, which makes a seed.

However, some plants use asexual reproduction to make new plants.

Unlike sexual reproduction, asexual reproduction only needs one parent plant to make new plants.

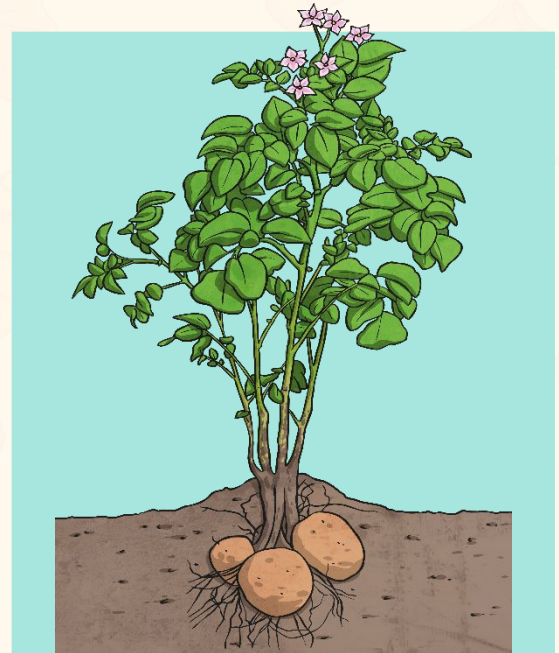
Because there is only one parent plant, there is no fusion of gametes, and no mixing of genetic information. The new plants are identical to the parent plant. They are clones.



Plants That Use Asexual Reproduction

Other plants produce side branches or runners with new plantlets on. The roots of each plantlet grow down into the soil, and the plantlets will grow to form new plants identical to the parent.

Spider plants and strawberries are examples of plants that reproduce this way.



Potato plants grow tubers underground during the spring and summer. These tubers will grow into new plants the following spring if they are left undisturbed.



Daffodil bulbs store energy underground. Once the daffodil plant has died back, the bulb develops side shoots that will grow into new daffodils for next year.





Plants That Use Asexual Reproduction

Some plants develop bulbs or tubers underground. These bulbs or tubers will develop into new plants for the following year. The new plants will be genetically identical to the parent plant.

Daffodils and potatoes are examples of plants that reproduce this way.



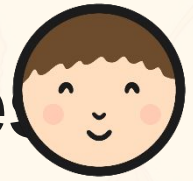
Spider plants send out branches with baby plantlets on. Each plantlet will grow into a new plant.



Strawberry plants send out runners with small plantlets on. These will each grow into a new strawberry plant.



Advantages and Disadvantages



There are advantages and disadvantages to plants using sexual or asexual reproduction. Have a look at the statements on your Advantages and Disadvantages Activity Sheet. Can you match each statement to show whether it is an advantage or disadvantage of each type of reproduction?

Advantages and Disadvantages

Some plants use sexual reproduction to make new plants, while other plants use asexual reproduction. Fill in the diagram with the statements to show the advantages and disadvantages of each type of reproduction.

	Advantages	Disadvantages
Sexual Reproduction		

Statements

Time and energy are needed to wait for another parent plant to reproduce with.	Diseases will not affect all the individuals in a habitat because they will all be different.	The species can change over time to adapt to new environments and habitats.	Reproduction is not possible for an isolated plant.
Only one parent plant is needed so new plants can be made even if there are no other plants nearby.	There is no variation or difference in new plants, so the species is less resilient to diseases or changes in climate.	The population can be increased quickly.	Good features of the parent plant will always be passed on.

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Science | Year 5 | Living Things and Their Habitat | Making New Plants | Lesson 2




Making New Plants



You are going to work with a partner to try to make new plants from one parent plant. If you are successful, each plant that grows will be a clone of the parent plant! This means it will be genetically identical to the parent plant.

Follow the instructions on your Taking Cuttings Activity Sheet to try to make new geranium plants.

Complete the activity sheet with your explanation of how you will make new plants.



★ ★ Draw a picture or stick a photo of your cuttings in the box.

★ ★ Taking Cuttings

Taking cuttings from a plant is an artificial method of asexual reproduction. If you are successful, you will make new plants that are genetically identical to the parent plant! Cuttings are small pieces of stem that are carefully removed from the parent plant and encouraged to grow their own roots, making new plants.

These instructions take cuttings from a geranium plant:

1. Cut a side stem that is about 5 cm to 10 cm long off the main stem of the parent plant. You should cut the side stem just below a leaf joint.
2. Carefully cut off all the leaves except the very top ones.
3. Put each cutting in a beaker or jar of water.
4. Place the beaker or jar in a bright place, but not in direct sunlight.
5. Watch your cuttings for a few weeks. If you are successful, your cuttings will develop roots!
6. You can then plant each cutting in a pot of compost. You will have created your own cloned plants!

the fact _____

roots. _____

Science Year 5 Learning and the Regent Study Year 5 Lesson 2

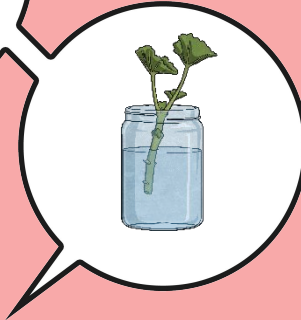


What's New?



Tell your partner three new things you have learnt today.

Include two things about asexual reproduction and one thing about taking plant cuttings.





Aim



- I can describe how some plants reproduce.

Success Criteria

- I can describe asexual reproduction in plants.
- I can identify advantages and disadvantages to sexual and asexual reproduction in plants.
- I can explain different ways to make new plants.



Living Things and Their Habitats: Making New Plants 2



REGENT STUDIES
Focused education on life's walk!
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<p>Aim: To describe the life process of reproduction in some plants and animals by exploring asexual reproduction in plants.</p> <p>I can describe how some plants reproduce.</p>	<p>Success Criteria: I can describe asexual reproduction in plants.</p> <p>I can identify advantages and disadvantages to sexual and asexual reproduction in plants.</p> <p>I can explain different ways to make new plants.</p>	<p>Resources: Lesson Pack</p> <p>Large geranium plant per group</p> <p>Transparent beakers or jars</p>
	<p>Key/New Words: Asexual, sexual, reproduction, cuttings, roots.</p>	<p>Preparation: Advantages and Disadvantages Activity Sheet - 1 per child</p> <p>Taking Cuttings Activity Sheet - 1 per child</p>

Prior Learning: The children will have learnt about sexual reproduction in plants in lesson 1.

Learning Sequence

	<p>Asexual Reproduction: Explain asexual reproduction in plants using the Lesson Presentation. Refer to the last lesson on sexual reproduction in plants to highlight the differences.</p>	
	<p>Plants That Use Asexual Reproduction: Use the pictures and information on the Lesson Presentation to describe some familiar examples of plants that reproduce asexually.</p>	
	<p>Advantages and Disadvantages: Children match or sort the statements on the differentiated Advantages and Disadvantages Activity Sheet according to whether they describe advantages or disadvantages of each type of reproduction. <i>Look for children who can identify the advantages and disadvantages of each type of reproduction.</i></p> <p>★ Match statements that are already sorted into 'sexual reproduction' or 'asexual reproduction'.</p> <p>★★★ Use a Carroll diagram to sort statements according to whether they are an advantage or disadvantage of sexual or asexual reproduction.</p>	
	<p>Making New Plants: Children follow the instructions on the differentiated Taking Cuttings Activity Sheet to take cuttings from a geranium plant. This is an artificial method of asexual reproduction. Any cuttings that develop roots over the next few weeks can be planted into pots of compost. These new plants will be genetically identical to the parent plant. Children explain this method of asexual reproduction on their activity sheet. <i>Look for children who are able to explain their understanding of asexual reproduction in plants, and how this makes new plants.</i></p> <p>★ Use key words to explain how new plants will be made.</p> <p>★★ Use prompts in their explanation.</p> <p>★★★ Write their own explanation independently.</p>	
	<p>What's New? Children discuss three new things they have learnt in the lesson.</p>	

Taskit

Plantit: If you have access to a spider plant or strawberry plant, children could pot up the plantlets or runners to grow new plants.

Growit: Children could use the school garden, vegetable plot or large containers to grow their own potatoes. When they harvest them, they will see the tubers that have formed underground to create new plants for next season.

Researchit: Children could investigate plants from other habitats that reproduce in different ways. For example, bromeliads grow in the rainforest, and can reproduce both sexually and asexually depending on the conditions.

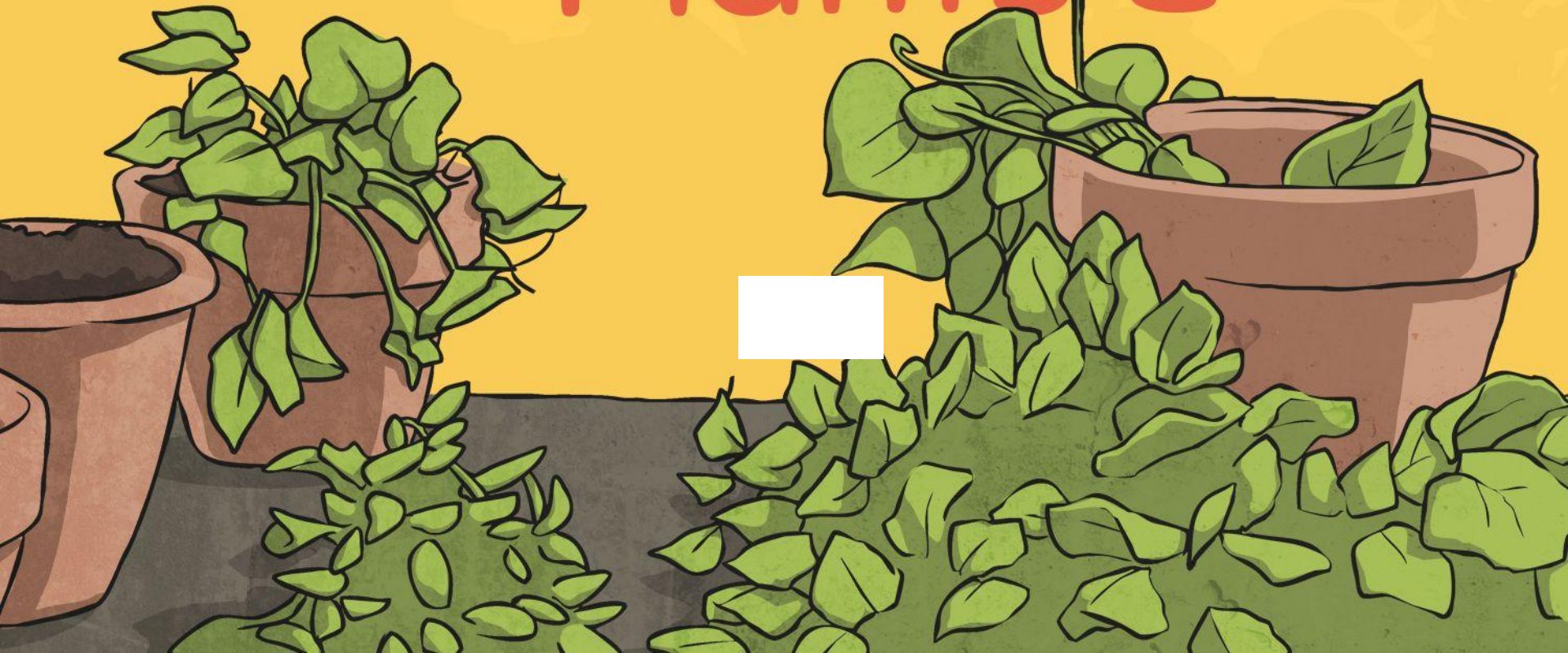


Science

Living Things and Their Habitats



Making New Plants 2





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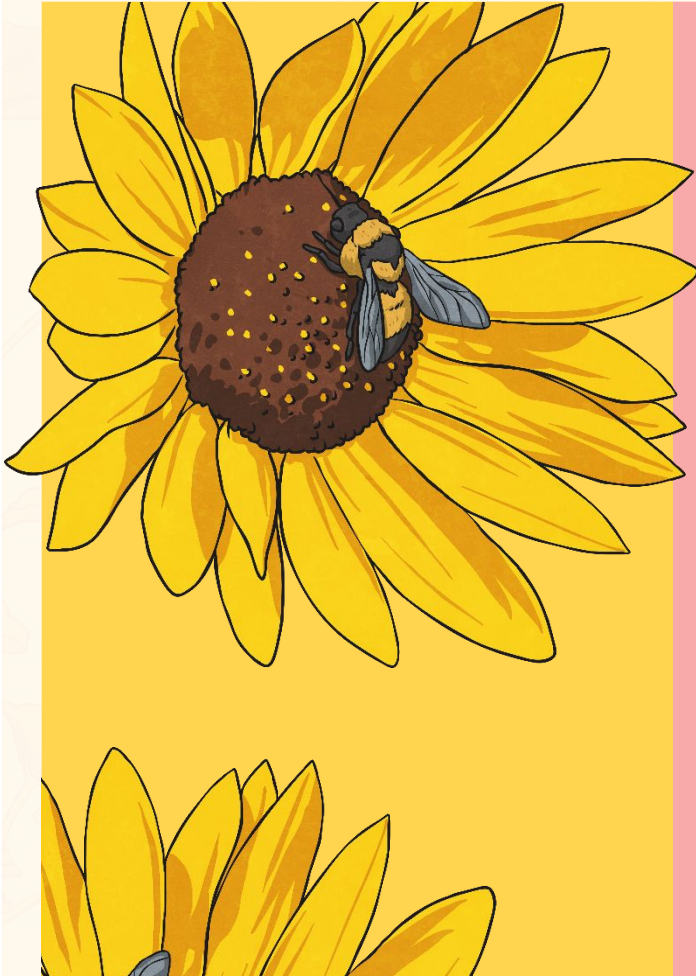
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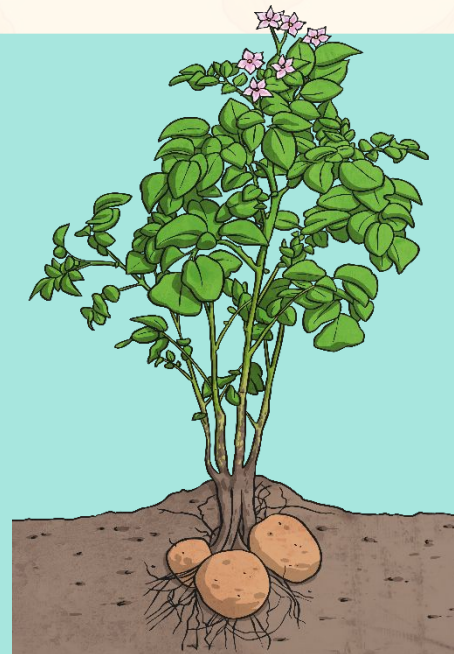
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Science | Year 5 | Living Things and Their Habitat | Making New Plants | Lesson 2

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Science Year 5 Living Things and their Reproduction: Making New Plants: Lesson 4

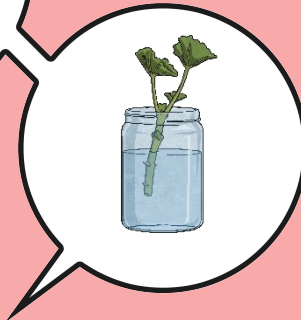


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Living Things and Their Habitats | Making New Plants 2

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