

**Lesson 2: Produce More!**

- I can explore how new plants can be grown from cutting and bulbs.
- I can carry out a scientific enquiry to find out how some plants reproduce.

**Quick Quiz!**

1. Last week, you learnt about \_\_\_\_\_ reproduction in plants.
2. What contains the male cells of a plant? \_\_\_\_\_
3. Where is the pollen produced? \_\_\_\_\_
4. What are the female reproductive cells of a plant called? \_\_\_\_\_
5. What is the function of a sepal? \_\_\_\_\_
6. In order to reproduce, the pollen must \_\_\_\_\_ the egg.

**Glossary**

asexual reproduction	reproduction which does not require both male and female cells
offspring	the young of a parent or parents
propagation	the continued reproduction of species
gametes	the male and female cells required for sexual reproduction
Cloning	creating a copy



As you learnt last week some plants reproduce when pollen fertilises an egg. However, other plants reproduce **asexually**—this is where offspring are created from just one plant and there is no combination of male and female **gametes**.

Bulbs, tubers or runners can be **propagated** by splitting or cutting them into sections and replanting. They reproduce asexually through **vegetative propagation** – this is **cloning** of the parent plant by using different parts of it such as root cuttings.



**Talk to your partner: what is the difference between sexual and asexual reproduction?**

Asexual reproduction differs from sexual reproduction because \_\_\_\_\_



There are **three** types of **vegetative propagation**

bulbs



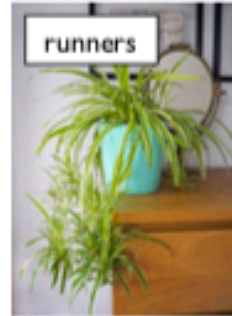
Bulbs are a part of a plant that stores food underground, which grow a new shoot. Eg; lilies, daffodils, onions, garlic.

Tubers



Tubers are underground food stores, which provide a new plant with sustenance until it can make its own. Food made by the new plant is used to make new tubers through reproduction. Eg. potato, yam, cassava.

runners



Runners are side shoots which grow out from the parent plant. Buds form at points along the runner and eventually these buds form roots and grow into new plants. Eg; strawberry plant, spider plant.

Some plant stems can grow roots if they are planted in the correct conditions. Gardeners do this to create lots of copies of the same plant without having to grow them from seeds. This is called **artificial propagation**. The two methods of artificial propagation to cultivate plants asexually are: taking cuttings and grafting.



Cuttings are small pieces of stem with some leaves attached, the new plant grows from this.

They can be placed in moist soil or water (and sometimes dipped in rooting powder).



Grafting: a plant that has a twig or bud from another plant attached to it so they are joined and grow together.



<https://www.sciencelearn.org.nz/videos/949-propagating-tea-plants-using-cuttings>

Answer the following questions?

Why do you think, new tea plants are propagated using cuttings?

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How long does it take the new plant to become mature enough for the first harvest?

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Watch this short [film](#) and then give some advantages of these two types of asexual reproduction of plants.



Asexual reproduction	
vegetative propagation	artificial propagation
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**HOMEWORK TASK!** Grow Carrot Tops (Remember to allow time to check on the progress of the plants every week.)

1. Take a carrot and cut off the top about 1 inch (2.5 cm) from the crown. Remove any green leaves from the carrot.
2. Fill a shallow bowl with sand, pebbles or marbles. Then fill with water.
3. Stand the carrot top in the water (push into the sand) with the cut end in the water.
4. Place the bowl near a sunny window.
5. Keep the water topped up so that the carrot doesn't dry out.
6. In a few days you will hopefully see the fernlike sprouts of the carrot plant grow out of the top. Sadly it won't grow a new carrot.