Explore, review, think, talk....

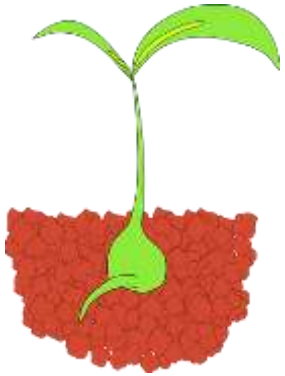
What do you already know about the life cycle of a plant?
(5 minutes)

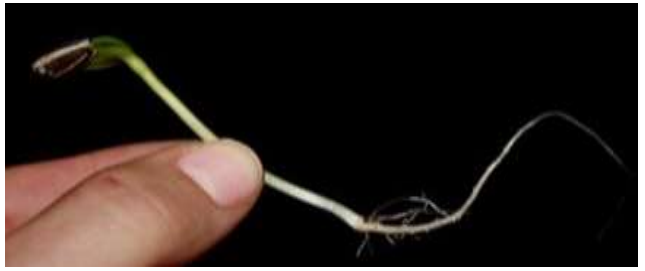
Watch this clip from 'Explorify'.

https://explorify.wellcome.ac.uk/en/activities/whats-going-on/shooting-sprouts/classroom?view-type=public

- Which stage of a plant's life cycle is shown?
- Can you name the parts of the plant?
- What do you think will happen next?

- Many plants reproduce by developing **seeds**.
- Seeds will **germinate** provided they have the appropriate conditions, e.g. enough water and warmth. This stage of the life cycle is called **germination.**
- **Roots** grow first, followed by a **shoot with leaves**.





Watch, read, listen...

The life cycle of a plant – sexual reproduction
(5-10 minutes)

Read this section of BBC bitesize and watch the video clip.

https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/zyv3jty

- What are the main life cycle stages for a flowering plant?
- How are non-flowering plants different?

Flowering plant life cycle

Non-flowering plants like ferns produce spores instead of seeds.

Comparing sexual and asexual reproduction

Exploring how plants can reproduce asexually with bulbs, tubers, runners or side shoots
(5 minutes)

Some plants produce an **underground food store** which develops into next year's plants. This is **asexual reproduction**.

- **Bulbs**, like daffodils, can form small side bulbs underground which then grow into copies of the parent plant.

- **Tubers**, like potato tubers, form underground and can reproduce **asexually** to make new plants.

Other plants grow sideways **runners** or **side shoots** with **plantlets** which are copies of the parent plant. This is also **asexual reproduction.**

- Strawberry plants send out sideways **runners** with **plantlets**.

- The Chinese money plant forms **side shoots** which can be cut and grown into a new identical plant.

Investigating seeds in some foods we eat

Comparing the size, shape and number of seeds in different fruits
(page 5-7: 20-30 minutes)

- Food which contains seeds inside are fruits, even though we might think about some of them as vegetables!
- Watch this clip.
  https://www.bbc.co.uk/bitesize/clips/zvypyrd
- Now jot down a list of fruits you might find in a supermarket… not forgetting the ones that might be in the 'vegetable section'!



Investigate some fruit we eat and make a fact file about two or three different fruits. If you need to use a knife to cut the fruit, ask an adult to help you and take care!

- Where is the seed found in the fruit?
- How many seeds are there in one fruit?
- What size, shape and colour is the seed?
- Do we usually eat the seed?

You may like to make drawings or take photographs of the fruit and seeds.

Create a fact file in your books. Look at the example given on the right.

Possible options of fruit:

apple, orange, lemon, tomato, green bean, pear, sugar snap pea, avocado, plum, green or red pepper, melon, cucumber…

(Note: Some varieties of fruit are grown as 'seedless' like grapes and satsumas.)

I can identify a variety of fruits we eat and compare their seeds.

Name of fruit: _____ Description of seed size, shape and colour: _____ _____ Where seeds are found: _____ Parts we eat: _____ Number of seeds in one fruit: _____ Diagram/Picture:	Name of fruit: _____ Description of seed size, shape and colour: _____ _____ Where seeds are found: _____ Parts we eat: _____ Number of seeds in one fruit: _____ Diagram/Picture:
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Optional Challenge...

You may like to investigate seed patterns or try growing a plant from a cutting.

Do fruits from the same type of plant all have the same number of seeds?

- Buy a packet or bag of fruit. *Good options include sugar snap peas, green beans or other peas/beans sold in pods. You can also use apples, oranges and pears.*

- Open each fruit and count the number of seeds inside.
- Think about how you will record your results and report your findings.

Can cuttings from vegetables we eat be used to grow new plants?

- Save some stalks or ends from some of the vegetables you eat. *You might choose lettuce, broccoli, spring onions, leeks, fennel, cauliflower...anything!*
- Put them in some water in a glass or jar so you can observe any change.

Think about how you will record your observations over two to three weeks.

Glossary of terms

- **Asexual plant reproduction** is when a plant reproduces by making a copy of the parent plant.
- A **bulb** is an underground food store. Side bulbs can form to make copies of the parent plant through asexual reproduction. For example, daffodils grow from bulbs.
- A **tuber** is an underground food store. It can make copies of the parent plant through asexual reproduction. For example, a potato is a tuber.
- A **runner** is a side shoot which can grow a plantlet which is a copy of the parent plant. For example, strawberries grow runners.
- **Sexual plant reproduction** is when a plant reproduces by forming seeds or spores.
- **Germination** is when a seed or spore starts to grow into a new plant.
- **Pollination** is when pollen is carried from the male part to the female part of a plant, usually by insects or the wind.
- **Fertilisation** is when pollen fertilises the eggs within the female part of a plant, so seeds can form. The seeds are often contained within a fruit.

There are many possible outcomes. This shows an example of four fruits.
Try measuring the largest seed to the nearest millimetre.

It is hard to count the seeds for some fruits like the tomato, melon or cucumber. Try spreading them out on a plate and putting the seeds in groups of 10 to make counting easier.

Possible learning outcome: I can identify a variety of fruits we eat and compare their seeds.

Name of fruit: *Apple*

Description of seed size, shape and colour: *The seeds are small, dark brown and shiny. They are an oval shape. The largest is 4mm long.*

Where seeds are found: *The seeds are in the centre of the fruit.*

Parts we eat: *We eat the flesh of the fruit but not the core and seeds.*

Number of seeds in one fruit: *There were five seeds in my apple.*

Diagram/Picture:

Name of fruit: *Plum*

Description of seed size, shape and colour: *The seed is hard and round with a rough outside. It is a red-brown colour. It is 9 mm long.*

Where seeds are found: *The seed is in the centre of the fruit.*

Parts we eat: *We eat the flesh of the fruit but not the seed.*

Number of seeds in one fruit: *There is only one seed. It is often called a stone.*

Diagram/Picture:

Name of fruit: *Sugar snap pea*

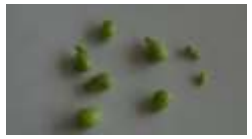
Description of seed size, shape and colour: *The seeds are small, light green and soft. They are an oval shape. The largest is 5mm long.*

Where seeds are found: *The seeds are inside the pod and attached to one of the edges by a little stalk.*

Parts we eat: *We eat the whole fruit, including the seeds.*

Number of seeds in one fruit: *There were eight seeds in my pod.*

Diagram/Picture:



Name of fruit: *Tomato*

Description of seed size, shape and colour: *The seeds are oval and tiny, about 1mm long. They are a light yellow colour.*

Where seeds are found: *The seeds are in a jelly-like substance in the centre of the fruit.*

Parts we eat: *We eat the whole fruit, including the seeds.*

Number of seeds in one fruit: *They are hard to count. I found about 94 in one tomato.*