

# PLANT LIFECYCLES (JUNE-OCTOBER)

Find out how plants are trying to take over the world.

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## LEARNING OUTCOMES

KS2 Science (year 3)

- understand the role of pollinators in plant reproduction
- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

KS2 Literacy

- Spoken language: maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments

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## RESOURCES

- Orchard with young or mature trees, along with other plants
- Cagoules for wet weather work, first aid kit, whistle
- Camera or iPad – check device and usage permissions
- **Seed and fruit hunt:** gloves, example of different plant seeds and fruit that will be dispersed in different ways (e.g. an apple (animal eats), acorn (animal buries), a grass head (sticks to animal's fur), a dandelion (wind blows), a pea pod (pod explodes),) bags or baskets, enough for one between 2.
- **Seed dispersal:** 5 labelled hoops
- **Where does fruit come from?:** apples, flower drawing or model, model or paper bee.
- **Pollination game:** At least 20 balls and 2 hoops of each colour: red, green, blue and yellow.

### WALK TO THE ORCHARD (10 MINS)

*Make sure that the children walk in pairs and check they know who is person 1 and who is person 2. They'll work with this partner during the lesson. They'll work in groups of four for the seed and fruit hunt.*

*When you arrive at the orchard, make your way to a point where there is the biggest range of plants, e.g. fruit trees, bushes, smaller plants and grass.*

#### **Where do you think you are?**

Why are there lots of trees here? What kind of trees do you think they are? Why do you think they're planted like this, with big gaps between each tree?

*Orchards are a group of five or more trees, planted with the intention of providing food. They often have quite big spaces between them to allow people to harvest the fruit easily and to allow light to reach all the fruit.*

## SEED AND FRUIT HUNT (10 MINS)

### What other plants can you see?

As well as the fruit trees, what is there?

Point out the range of plants growing there.

### Did you know that all these plants want to take over the world?

They want to grow everywhere. How do they try and spread everywhere? What do they do?

Plants produce seeds to try and spread themselves everywhere. Show the children the seed and fruit examples you have brought and ask if they know what plant they came from.



### I challenge you to a seed and fruit hunt!

- Ask the children to stand next to their pair partner
- Ask person 1 to come and take a bag or basket and go back to their partner.
- Tell them they have 3 minutes to find as many different types of fruit and seed. Explain the physical boundary they must stay within. Tell them they must come back when they hear the whistle.
- While they are hunting, put out the paper/board/hoops for the next activity.
- After 3 minutes bring them back together.

## SEED DISPERSAL (15 MINS)

### How do plants try and get their seeds to spread far and wide?

These plants have found lots of different ways to get their seeds into the world.

Explain the five different ways seeds are spread far and wide (dispersed) and model putting the seed in the right hoop/piece of paper/board.

- **Wind blows** very light seeds – e.g. dandelion or ash
- **Exploding seed pods** or cases push seeds out in all directions – e.g. pea pods
- **Animals bury** seeds like nuts to store them for eating later. But they forget where some of them are and so some of them grow.
- **Furry animals** accidentally spread the seeds on their fur – e.g. sticky willy or some grasses
- **Animals eat** fruit and poo out the seeds – e.g. apple.

(N.B. A nut is just a type of fruit that has a hard case around the seed. It takes a lot of sitting in damp (and possibly cold) soil before it will be able to grow. Seeds that come from other fruits, e.g. an apple, will germinate with just a little water because they're not enclosed in such a hard case.)

(N.B. If there are water lilies growing on site you could talk about how water carries seeds)

### Can you work out what kind of seeds you've collected?

If you look carefully at the seeds you've collected, you might be able to work out how they get spread. Put them in the right hoop.

Take a couple of minutes to check they've put seeds in the right place to reinforce this. Then pick up the apple and a couple of other examples.

## POLLINATION GAME (25 MINS)

### **Where does fruit come from?**

What was this apple, before it became an apple? What was this blackberry before it became a blackberry? What was this dandelion before it became this ball of seeds?

*All fruit, nuts and seeds come from some kind of flower. Use your flower drawing or model, model or paper bee to explain how pollen gets carried from one plant to the next. The pollen grows into the flower and fertilises it to make the fruit.*

*(NB some plants are wind pollinated e.g. grasses and many nuts – anything that doesn't have a 'showy' flower.)*

### **Who wants to play the pollination game?**

-  Divide the class into four lines teams of busy bees about 2.5m apart from each other. Ask them to sit down.
-  About 5 metres away from the front of each row put down a hoop. Explain that they are different fruit flowers, all wanting to be pollinated. E.g. apple, pear, plum and cherry.
-  At the front of each row put down a hoop full of balls of the corresponding colour – explain that this is one flower, full of pollen.
-  Their job, as busy bees is to carry the pollen from the first flower to the second, buzzing all the way. If they want to take another piece or two of pollen they can, but they aren't allowed to use their hands or clothing!
-  They must take it in turns and only stand up when it's their turn to be the bee. They must pick up the pollen, carry it to the 'flower' – not forgetting to buzz - drop it in and then run to the back of their line. Then the next child takes their turn until everyone has had one go.

### **Which team got the most pollen into the flower? Which team had the best sounding bees?**

## TIME TO RECAP (5 MINS)

### **What have we learned today?**

What's the word beginning with 'p' that means pollen is taken from one flower to the next? What happens after a flower gets pollinated? Where does all fruit come from? What kind of animal can be a pollinator? Why do plants have fruit, nuts and seeds? How do the plants spread their seeds far and wide? What plants did we see today? What is an orchard?

## WALK BACK TO THE SCHOOL (10 MINS)