

Life cycles of plants and animals (ages 7-11)

Explorify planning support



Curriculum statements	Explorify activities	Suggested use / taking it further
SEXUAL REPRODUCTION IN PLANTS		
<p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (England)</p> <p>Describe the life process of reproduction in some plants and animals. (England)</p> <p>Non Statutory: Pupils should find out about different types of reproduction, including sexual and asexual</p>	<p>Plant lifecycles with sexual reproduction Growing seed WGO</p>	<p>Start a discussion about life cycles on flowering plants by watching Growing Seed. You can use this to establish what children remember/understand about what a seed is and lead into your plants work on germination (what plants need to grow).</p>
	<p>Red and bumpy ZIZO</p>	<p>Look at the seeds on a strawberry fruit with the ZIZO; this is good revision in Year 5. Why are the seeds on the fruit? What is the connection between fruit and seed?</p> <p>Useful linked video on plant life cycles: https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/zyv3jty</p>
	<p>Look closely at flowers Curious Crown ZIZO</p>	<p>Explore the flower's role in sexual reproduction. The ZIZO's show the female and male parts clearly.</p>
	<p>Do you like butter? ZIZO</p>	

<p>reproduction in plants, and sexual reproduction in animals.</p> <p>The main stages of the life cycle in some living things</p> <p>Obvious changes that occur in the lifecycles</p> <p>Plants and plant growth (Northern Ireland)</p> <p>By investigating the lifecycles of plants and animals, I can recognise the different stages of their development (Scotland)</p> <p>I can explore the relationship between living things, their habitats and their life cycles</p> <p>I can explain the role of different organs and systems that enable plants and animals to live and grow (Wales)</p>	<p>What's inside flowers? OOO</p>	<p>The OOO compares a lily, bluebell and climbing rose. This is an excellent opportunity for children to apply their knowledge in different flowers and appreciate that the stamen and stigma can look very different.</p> <p>Children enjoy dissecting flowers and looking closely at shapes, colours and numbers of each flower part. Science and Plants for Schools has a step by step guide (starts on page 5) as does CLEAPSS (most schools are members of CLEAPSS but you will need to ask for the school username and password).</p> <p>These videos are useful: How plants produce seeds - KS2 Science - BBC Bitesize Why are bees attracted to flowers? - BBC Bitesize</p>
	<p>Pollination Friends of flowers OOO</p>	<p>These show images of insects pollinating flowers.</p>
	<p>Feathery friend ZIZO</p>	<p>Children can act out pollination. Make simple flowers out of paper cones with coloured petals attached to them, then put a sticky lolly in the middle to represent the stigma. Fill the cones with cheesy Wotsits for the pollen. Cut out some large bee images with holes for "finger" legs. The children who are the bees visit the flowers, pick up some pollen on their legs (fingers) as they take the Wotsits and end up also rubbing the pollen off onto another flower's stigma. There is a photo illustrating this in the teacher support of What's inside flowers. https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/zqbcxfr https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-what-is-pollination-and-how-does-it-work/zv4df4j</p>
	<p>Sharing is caring LWCYH</p>	<p>This could be a nice stimulus to listen to and ask what are bees busy doing?</p> <p>Follow up with this video explaining the importance of bees: https://www.bbc.co.uk/teach/would-we-starve-without-bees/zkf292p</p>
	<p>What if there were no insects? WI</p>	<p>Good discussion activity to reflect on the importance of insects. Can the children explain their role in pollination correctly?</p>

	<p>Which pollinators visit our school grounds?</p>	<p>TBQ</p> <p>Watch Busy Bee and then brainstorm questions about bees and flowers. Children could visit a park or wild flower area on a sunny day and watch the pollinators at work and carry out their own investigations. For example, which colour flowers do bees visit the most? Do flowers in the shade or sun get more visits? Are particular shaped flowers more popular? How many different types of bees can they spot?</p> <p>https://hwb.gov.wales/api/storage/2cd9fa3c-943a-4384-b895-b54d64123299?preview=true</p> <p>https://friendsoftheearth.uk/nature/bee-identification-guide</p>
	<p>Seed dispersal</p> <p>Have you ever noticed a plant growing in cracks in the pavement?</p>	<p>HYE</p> <p>You could use the Have you ever activity to provoke a discussion about plants growing where they haven't been planted.</p>
	<p>Winter seeds – wind and animal dispersal</p>	<p>OOO</p> <p>Then use Seed dispersal - KS2 Science - BBC Bitesize to introduce dispersal by wind, animals (eating and sticking) water and explosion then use these OOOs to explore the children's understanding. Can they explain how the seeds would be dispersed?</p>
	<p>Three weeds - dandelion at three stages of development</p>	<p>OOO</p> <p>Three weeds challenges children because it is a dandelion at three stages of development. Children could search for dandelions around school and consider how effective wind dispersal is. This video dramatically shows how explosion along a line of weakness can disperse seeds.</p>
	<p>Super seeds</p>	<p>WGO</p> <p>Either collect a range of seeds for the children to classify by the type of dispersal, or take the children out looking for seeds. The best time to do this is towards the end of the summer term, or early in the Autumn term.</p> <p>The RHS resource below is a nice way to continue the lesson and gives the children an opportunity to make and improve a 'seed spinner'</p> <p>https://schoolgardening.rhs.org.uk/Resources/Lesson-Plan/Seed-dispersal</p>

	Brown and sticky	ZIZO	These ZIZOs would be good short activities where children can identify the type of seed dispersal.
	Wet and shiny	ZIZO	
	Red and bumpy	ZIZO	
	What if plants could move from one place to another?	WI	This interesting discussion prompt allows children to think about WHY seeds need to be dispersed. Demonstrate with a simple model what would happen if the seeds from a plant stayed in the space around the parent plant? Ask the children to act as seeds around you and notice how the competition for space, light, and water would increase.
	Seeds	MS	Children design and make a seed for a particular type of dispersal.
	A sudden downpour - desert plant germinating	WGO	Discuss how the life cycles of some plants need to be very quick. The desert plants have adapted to their habitat where there is less rain by having a rapid lifecycle.

ASEXUAL REPRODUCTION IN PLANTS

	New Beginnings – spider plant	ZIZO	<p>It is important that children experience growing plants without seeds. They could go on to do one or more of:</p> <ul style="list-style-type: none"> • Take- cuttings of mint, • Use Terrific Scientific Grow or NFU's Stemterprise Year 5 (lesson 2) to propagate spring onions, • Grow your own potatoes • https://uk.bulbs4kids.com <p>They could look at the spores on a fern using a hand lens or microscope.</p>
	Brown spots – fern	ZIZO	
	Mystery eyes – potato	ZIZO	
	Blackened edges	ZIZO	
	Three roots – cassava, yam and potato	OOO	

ANIMALS

<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird (England)</p> <p>Non statutory: They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall</p> <p>The main stages of the life cycle in some living things (Northern Ireland)</p> <p>By investigating the lifecycles of plants and animals, I can recognise the different stages of their development (Scotland)</p> <p>I can explore the relationship between living things, their habitats and their life cycles. I can recognise patterns from my observations and investigations and can communicate my findings</p>	<p>Revising animal classification Terrific tree dwellers – frog, sloth and sun bird</p>	000	Good activity to get children discussing the differences between amphibians, mammals and birds. Revisit previous learning about the key features of vertebrate groups by playing games e.g. Who am I? with stickers on their backs.
	<p>Others if needed for extra practice:</p> <p>Hot-steppers - lizard, duck and lion.</p>	000	Differences between reptiles, mammals and birds.
	<p>Baby animals - duck, lamb and elephant.</p>	000	Differences between mammals and birds.
	<p>Spot the difference - Moth, Peacock and caterpillar</p>	000	Revision of invertebrates and vertebrates
	<p>Lifecycles</p>		<p>WWT lifecycle visuals - These are particularly useful to help children who find recording challenging (especially if you prepare written explanations which they can match to the pictures)</p> <p>When comparing lifecycles of different types of animals, the TAPS focused assessment plan for Year 5, called lifecycles, gives guidance for assessing the children's working scientifically skills in reviewing and reporting their findings.</p> <p>https://www.bbc.co.uk/teach/class-clips-video/science-ks2--ks3-the-life-cycles-of-different-organisms/zvh8qp3</p>
	<p>Mammals When we were young – human baby, lamb and puppy</p>	LWCYH	<p>Start a discussion about life cycle of mammals</p> <p>Could use to research average gestation periods of mammals.</p> <p>https://www.animalsatozforkids.com/</p> <p>https://www.activewild.com/a-to-z-animals/</p> <p>https://kids.nationalgeographic.com/animals</p> <p>NFU's Live Lambing lesson https://encounteredu.com/live-lessons/nfu-science-farm-live-2021</p>

I can explain the role of different organs and systems that enable plants and animals to live and grow <i>(Wales)</i>	What if the average lifespan of a human was 200?	WI	You could also sign up for https://leaf.eco/farmertime/home This involves a fortnightly video call between a farmer and your school. A great way to learn about the life cycle of animals and plants. Could use to research average life span of mammals. How does it compare to size?
	Amphibians Tiny teeth - tadpoles	ZIZO	This is a good way to spark a discussion about the features of amphibian: smooth wet skin and their life cycles.
	Golden Jewel - toad	ZIZO	
	Wildlife in the pond	OOO	As an introduction to pond dipping or setting up an observation of frog spawn in the classroom.
	Insects Coming out to play - butterfly emerging from a chrysalis	WGO	See Celebrating Scientists at bottom of the table- Maria Sibylla Merian Clearly shows metamorphosis happening. https://www.bbc.co.uk/bitesize/topics/z6wwxnb/articles/zdvhxbk This video from BBC is great for showing the changes during metamorphosis of a tadpole to become a frog: https://www.bbc.co.uk/programmes/p015xmbq
	Very hungry caterpillars - eggs hatching	WGO	In this WGO, you can see the eggs of a butterfly and compare it with children's knowledge of a bird's egg. How are they the same? How are they different?
	Spectacular scales - butterfly	ZIZO	All launchpads for discussions about their life cycles.
	Hairy coil - butterfly	ZIZO	
	Feathery friend? - bee	ZIZO	
	Friends of flowers butterfly, ladybird and spider	OOO	
	Massive migration – Butterflies	ZIZO	The accompanying text explains how butterflies cannot survive northern hemisphere winters.

	Birds A home for baby birds -three baby birds in a nest	000	See Celebrating Scientists at bottom of the table- Mya-Rose Craig All focus on early life cycle of birds. Useful sites for children's research: https://www.birdspot.co.uk/identifying-birds/the-life-cycle-of-a-bird https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/bird-a-z/magpie/life-cycle/
	Special delivery - baby birds being fed	WGO	
	Barnacle dive - barnacle gosling trying to fly	WGO	
	The sound of silence - an owl hunting	WGO	Launchpad for investigating the life cycle of an owl
	Looking after baby - Clown fish, penguin and water bug with off spring.	000	
	What if animals did not have young?	WI	A good one to discuss the purpose of reproduction.

CELEBRATING SCIENTISTS

Through research and discussion, I have an appreciation of the contribution that individuals are making to scientific discovery and invention and the impact this has made on society <i>Scotland</i>	Who is... Maria Sibylla Merian?	WHO	Who is... Maria Sibylla Merian? - learn about a woman who studied insect life cycles in 1600s.
	Who is Mya-Rose Craig?	WHO	Called the 'bird girl' at 11 years old, Dr Mya-Rose Craig is now an ornithologist, environmentalist, writer, speaker and broadcaster. Inspire children to learn about birds and go bird watching.

ABBREVIATIONS AND DESCRIPTIONS OF THE DIFFERENT EXPLORIFY ACTIVITY TYPES		
ZIZO	Zoom In, Zoom Out	Visually engaging close-up photos
OOO	Odd One Out	Find similarities and differences
WGO	What's Going On?	Short, distraction-free videos
HYE	Have You Ever?	Activities linked to everyday experiences
WI	What If?	Explore ideas in new contexts
TBQ	The Big Question	Plan an investigation
PS	Problem Solvers	Think critically and creatively
MS	Mission Survive	Fun, imaginative hands-on challenges
MB	Mystery Bag	Use senses to work out contents in a bag
LWCYH	Listen What Can You Hear?	Recordings of familiar sounds
SWA	Start With Art	Using artworks to prompt science discussion
WJH	What Just Happened?	Observing changes over time
WHO	Who Is?	Learn about a diverse range of scientists

Other recommended resources to support planning:

[PLAN primary science assessment resources \(planassessment.com\)](https://planassessment.com)

[Assessment \(TAPS\) - Curriculum Materials | Primary Science Teaching Trust \(pstt.org.uk\)](https://pstt.org.uk)

[The Great Science Share](#) - see videos on Scientific Enquiry under the tab "Great Science Skills".

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