



Year 5 Science Project Living things

In our science project this week we want you to explore living things by doing some of your own research and carrying out investigations at home. Each day you will be given a different theme and ideas for investigations. You **do not** have to complete all of the activities. These are ideas of what you could do to find out more, explain what you know or to just have fun exploring science!

You can present your work however you want - the more creative the better! You can take photographs, videos, produce artwork, write poetry, draw graphs, make a book (to name just a few). We would love to see your hard work so please send us an email on the class accounts 5C@ashdeneschool.net or 5AH@ashdeneschool.net or post on the school twitter account.

Websites to visit

- https://www.ducksters.com/science/biology/flowering_plants.php
- https://www.ducksters.com/science/biology/non-flowering_plants.php
- <https://www.ducksters.com/animals.php>
- <https://www.dkfindout.com/uk/animals-and-nature/plants/>
- <https://www.bbc.co.uk/bitesize/topics/zgssgk7/resources/2>
- <https://www.bbc.co.uk/bitesize/articles/znghnrd>
- <https://ypite.org.uk/audiences/kids>
- <http://www.mbgnet.net/bioplants/pollination.html>
- <http://www.mbgnet.net/bioplants/seed.html>
- <https://www.natgeokids.com/uk/discover/science/nature/the-life-cycle-of-flowering-plants/>
- <https://www.natgeokids.com/uk/discover/animals/insects/butterfly-life-cycle/>
- <http://www.crickweb.co.uk/ks2science.html>

Please remember...

- You should ALWAYS wash your hands after handling plants (including seeds), soils, composts, manures, equipment and other a related materials
- Plants (or parts of plants) can be poisonous, cause allergic reactions in some people or may have been treated with chemicals (such as pesticides). Always ask an adult before handling plants.
- You must NEVER eat plants, unless given instructions that you may do so by a trusted adult.
- Wild flowers should not be picked and it is illegal for anyone (without the permission of the landowner or occupier) to uproot any wild plant



Monday – Reproduction in plants (sexual)

Today we would like you to start investigating how flowering plants reproduce.

Look carefully at the plants in your garden or local area. What is the same? What is different?

Watch the following clips (and complete the quizzes) to give you the information you will need. You may want to take notes as you are watching.

<https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/zyv3jty> - introduction to both types of reproduction

<https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/zqbcxfr>

<http://studyjams.scholastic.com/studyjams/jams/science/plants/flowers.htm>

<https://www.youtube.com/watch?v=493WeySyf-8>

Show your understanding of the process of sexual reproduction in plants.

You must include the names of the male and female parts of a plant and a definition.

This could be presented as a list, table, spider diagram, glossary of terms, an explanation, diagrams of the process or it could be incorporated into one of the activities below.

Activity ideas

Can you explain how flowering plants reproduce?

Dissect a flowering plant – following the instructions on this clip. https://www.youtube.com/watch?v=Eue0BV6VHvc Remember to ask an adult before you start – safety first with sharp knives. Examples of suitable plants: gladiolus, peony, perennial geranium, tulip, lily (careful of staining), sweet pea.	Write the journey of a piece of pollen explaining its role in reproduction. You could write this in first person, as if you are the pollen. You could use the sequencing activity to help with this.	Sketch and colour plants from your surroundings, using either the linnean style or the ecological style, as shown on these Natural History Museum clips. https://www.youtube.com/watch?time_continue=112&v=awirBMBXaeg&feature=emb_logo https://www.youtube.com/watch?time_continue=242&v=kSvvh6LoTM4&feature=emb_logo
Make your own flowering plant, using craft and food items from around your house – make all the reproductive parts of the flower as accurately as you can. This is one example: https://www.pinterest.co.uk/pin/660058889109271636/	Complete the matching activity (see attached file). If you do not have a printer you could copy them in the correct order. Then watch the clip above again or look at one of the web links to check your answers.	Play plant reproduction taboo (see attached file). You could make your own cards. You have to describe the part of the plant at the top of the card without saying that word or any of the words listed below it.



Tuesday – Reproduction in plants (asexual)

Today we would like you to continue investigating how flowering plants reproduce.

Look carefully at the plants in your garden or local area.

Remember safety: ask an adult first, wash hands after handling plants, do not eat anything, never remove wild plants.

Watch the following clips (and complete the quizzes) to give you the information you will need. You may want to take notes as you are watching.

<https://www.youtube.com/watch?v=NfPP2CQGuC0>

<http://www.mbgnet.net/bioplants/seed.html>

<https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/zyv3jty> - re-cap if needed

<https://www.bbc.co.uk/bitesize/topics/zxfrwmn/articles/z28dpbk>

1. Record the different ways plants distribute their seeds, in a method of your choice.
2. Research one plant life cycle and record.

Activity ideas

How do plants reproduce asexually?		
Go on a plant hunt. Find seeds and investigate how they are dispersed and investigate other ways plants reproduce e.g. In the garden / local area: dandelion, sticky weed, bluebells, strawberry plants, animal dispersal (yes I mean bird droppings – do not touch!)	Blow a dandelion seed head and watch what happens. Write a poem / story / piece of music / description about its movement.	Try and compare growth rates of different methods of reproducing plants. You could: plant some seeds (you could use fruit or dandelion seeds); take a cutting (e.g. ivy, clematis); plant a sprouting potato (if they last long enough in your house); investigate strawberry runners or spider plant spiderette and plant a bulb.
Try to replicate how seeds move on the wind – sycamore seeds, dandelion seeds. http://www.planet-science.com/categories/under-11s/our-world/2011/09/make-a-spinning-seed!.aspx You could investigate the impact of: size, material, wind speed, weight (add paper clips), changing the shape / relative dimensions or one of your own ideas.	Investigate effective seed dispersal. You could investigate: How well seeds grow on different surfaces e.g. rocky, sandy, soil, water logged etc, If the density of seeds in an area has an impact on growth. Which is an effective dispersal method for your seed/s – wind, water, on an animal's coat (wooly jumper? not an actual animal),	Take cuttings from different parts of a plant and see which grow. You could try the leaf, roots and stem (flowers and tubers – if it has them). You could try all the same plant OR the recommended ones below. Stem: Cut a 5cm shoot tip from a geranium plant - just below a leaf node (where the leaf joins the stem), This is where the new roots will grow from. Leaf: Take a mature leaf (not old and tough) from near the centre of the African violet plant including the petiole (leaf stem) Roots: cut off a piece of root – some garden weeds would be useful for this.

Wednesday – Reproduction in animals

Let's move on to looking at reproduction in animals. There are two types of reproduction: asexual and sexual. Watch the videos and see if you can find out what the difference is between them.

<https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/z9xb39q> (don't miss the game underneath the video!)

<https://www.youtube.com/watch?v=fcGDUCGjcyk> (this one gets a little complicated towards the end so just use it to find out the difference between sexual and asexual reproduction. Don't worry about the rest!)

<https://www.bbc.co.uk/bitesize/clips/z2mjmp3>

Minute Earth on YouTube has lots of interesting videos including 'Why can't mules have babies?' <https://www.youtube.com/watch?v=PBCNWMU5apE> and 'Why it sucks to be a male hyena' <https://www.youtube.com/watch?v=PBCNWMU5apE>

Don't forget humans are animals too: <https://www.bbc.co.uk/bitesize/clips/zpmqxn timer>

Activity Ideas

Choose a range of animals to research. Investigate how they reproduce. For example, do they lay eggs? What are their offspring called?

What are the different stages of reproduction?

Compare your animals. What's the same and what's different about how they reproduce?



Create some animal top trumps cards of your choice. For example:

Name: GREY SQUIRREL	
	
Type of animal:	MAMMAL
Development time:	38 DAYS
Number of offspring:	5
Aftercare:	13 WEEKS
Fertilisation:	INTERNAL
Development:	INTERNAL
Survival rate:	20%

Have a look at Smithsonian's National Zoo's Panda Cam: <https://nationalzoo.si.edu/webcams/panda-cam>

Investigate why breeding pandas is incredibly difficult:

<https://animals.howstuffworks.com/mammals/panda-birth-rate.htm>

<https://www.smithsonianmag.com/smart-news/breeding-pandas-insanely-hard-1-180956401/>





Thursday – Animal life-cycles

Today we're going to research life cycles:

<https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/zwn6mnb>

Most animals including fish, mammals, reptiles and birds have very simple life cycles.

These animals have three stages: before birth, young and adult.

Amphibians, like frogs and newts, have slightly more complicated life cycles. They undergo **metamorphosis**: <https://www.youtube.com/watch?v=DRTnN0TSDO4>

What can you find out about the different stages of life cycles of different animals?

You might want to compare the life cycles of: mammals, amphibians, insects and birds.

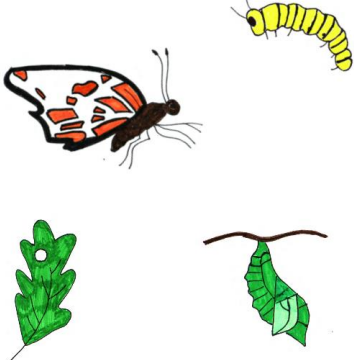
Activity ideas

You might want to research and make a fact file for: Courtship displays: https://www.youtube.com/watch?v=nNrieMwfpWQ Maternal Care: https://www.youtube.com/watch?v=F5C-rRvaQVQ Metamorphosis: look at amphibians e.g. butterflies Parental Investment: https://www.youtube.com/watch?v=8xVgAULDWNE&list=PLEIB7nLNHZvjCQHR0R_0IEQAoWpzAxPek&index=1 Paternal Care: https://www.youtube.com/watch?v=FOrvbE06Mps	Research the life cycles of animals from different parts of the world and compare them. You might want to choose an animal from: • Rainforest • Oceans • Desert areas • Prehistoric Times	What can you find out about the human life cycle? Can you draw and label it? https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/z2msv4j									
Can you find an example of an animal, insect or bird for each of these categories below. The attachment called 'Comparing animal life cycles' may help give you some ideas! <table border="1"> <tbody> <tr> <td data-bbox="110 1417 337 1564"> Are viviparous Give birth to live young </td><td data-bbox="341 1417 568 1564"> Undergo metamorphosis Have different juvenile and adult body plans </td><td data-bbox="571 1417 799 1564"> Have a placenta </td></tr> <tr> <td data-bbox="110 1568 337 1722"> Are brood parasites </td><td data-bbox="341 1568 568 1722"> Are eusocial Different types of individual perform different functions </td><td data-bbox="571 1568 799 1722"> Some females are sterile Some females cannot reproduce </td></tr> <tr> <td data-bbox="110 1726 337 1873"> Are oviparous Lay eggs </td><td data-bbox="341 1726 568 1873"> Nurse their young with milk </td><td data-bbox="571 1726 799 1873"> Reproduce sexually Require both a male and female to reproduce </td></tr> </tbody> </table>	Are viviparous Give birth to live young	Undergo metamorphosis Have different juvenile and adult body plans	Have a placenta	Are brood parasites	Are eusocial Different types of individual perform different functions	Some females are sterile Some females cannot reproduce	Are oviparous Lay eggs	Nurse their young with milk	Reproduce sexually Require both a male and female to reproduce	Have a go at this online quiz: https://www.educationquizzes.com/ks2/science/life-cycles---animals/	Complete the animal reproduction worksheet (attached). If you don't have a printer you can draw your own pictures and write out the information in the correct order in your books.
Are viviparous Give birth to live young	Undergo metamorphosis Have different juvenile and adult body plans	Have a placenta									
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Friday – Animal Life- Cycles

We're going to get creative with life cycles now and look at different ways to apply what you learnt yesterday. Below are lots of different suggestions of how you can show and represent different life cycles. Use whatever you can find around the house and garden (ask an adult before you do this). If the examples below show a butterfly, you might want to try and select a different animal to represent. There are so many mammals, amphibians, insects and birds to choose from!

Activity ideas

Make a life cycle wheel of an animal or insect of your choice: https://bbsrc.ukri.org/documents/lifecycle-wheel-pdf/ https://www.youtube.com/watch?v=pELtz87zp4I	Make a 3D model of a life cycle: https://www.youtube.com/watch?v=v3t0f3kcCas You might need to get a bit creative with what you can find around the house!	<u>Make a life cycle movie:</u> Using a phone or tablet (ask permission) make a life cycle movie using whatever you can find round the house! If you don't have the toys you can draw and cut out the parts of the life cycle you need. https://www.youtube.com/watch?v=0bqMTyzTKCU Think outside the box: You can make fake frogspawn by setting gelatin (clear jelly) in ice cube trays and dropping a raisin (or anything similar!) into it.
Get creative and make the life cycle of your choice. There lots of ideas of how you can do this here: https://www.livinglifeandlearning.com/life-cycle-activities-kids.html 	Draw each of these pictures in the correct order, using arrows to link them together. Then add detailed labels to explain what's happening at each stage. <i>Extra challenge: can you do the same thing for a different animal?</i> 	★ <u>Extra challenge:</u> ★ All animals are specially adapted for their habitats: https://www.bbc.co.uk/bitesize/clips/zbp6n39 Your task is to design your own species. You will need to consider: • How do they reproduce? • What does their life cycle look like? • What is their natural habitat? • What do they eat? Are they carnivores, herbivores or omnivores? • What are its predators and how does this fit into the food chain? https://www.wildscreen.org/media/3152/wildscreen_design_a_species_instructions.pdf