
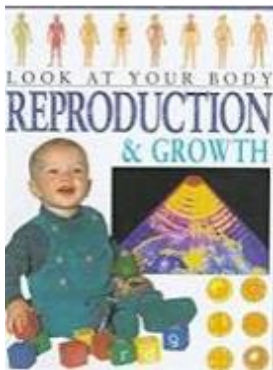
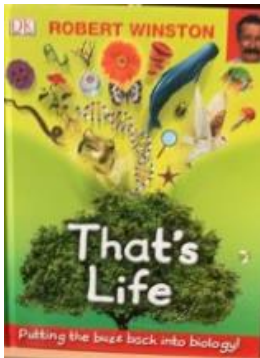

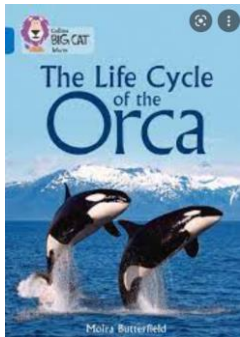


BILSTON CHURCH OF ENGLAND PRIMARY



MEDIUM TERM PLANNING

Subject	Topic/Key Question	Year Group	Term	Time Allocation
Science	Reproduction in Plants and Animals.	5	Summer 1	12 hours
 Library	 Library service	 Library	 Reading scheme	 Reading scheme
End of upper Key stage 2 Outcomes	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>Using test results to make predictions to set up further comparative and fair tests.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written</p>			

	<p>forms such as displays and other presentations.</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>
End of Unit Outcomes	<p>I can describe the life process of sexual reproduction in flowering plants, including pollination and fertilisation.</p> <p>I can explain the role of different parts of the flower in sexual reproduction.</p> <p>I can present the process of sexual reproduction in flowering plants in a storyboard or other sequence.</p> <p>I can identify, name and describe in detail the function of the reproductive parts of a flower and the processes involved in plant reproduction.</p> <p>I can describe how the flowers of some plants are different, including only male or female parts.</p> <p>I can explain how the process of reproduction differs in plants that have single sex flowers.</p> <p>I can describe ways that plants are able to reproduce other than by producing seeds.</p> <p>I can suggest why it is useful for plants to reproduce asexually.</p> <p>I can produce a step-by-step 'How to' guide for a propagation method of my choice.</p> <p>I can describe how some amphibians and insects reproduce.</p> <p>I can identify metamorphosis as a stage in the life process of reproduction that is specific to these two types of animals.</p> <p>I can explain that amphibian and most insect reproduction is sexual reproduction, requiring two animals, one male and one female.</p> <p>I can describe how some mammals and birds reproduce.</p> <p>I can identify similarities and differences between the life process of reproduction in</p>

	<p>these two types of animals.</p> <p>I can explain that mammal and bird reproduction is a type of sexual reproduction, requiring two animals – one male and one female.</p> <p>I can name and sequence the stages on a human life cycle diagram.</p> <p>I can compare the human life cycle with that of other mammals.</p> <p>I can present data as a scatter graph. and use my graph to answer a question about life cycles</p> <p>I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>I can describe the life process of reproduction in some plants and animals.</p>
Vocabulary	<p>reproduction, reproduce, flower, organ, carpel, stamen, pollen, seeds, seed head, berry, fruit, pollinator, pollination, fertilisation, reproduction, reproduce, propagate, stem, leaf and root cuttings, runners, tubers, bulbs, rhizomes, gender, male, female, sex, sexual, asexual, metamorphosis, mate, sperm, pregnant, give birth, young, pup, calf, foal, chick, hatch, fledge, fledgling life process of reproduction, plants, animals, life cycle, mammal, amphibian, insect, bird, prehistoric, similarities, differences.</p>

Lesson Sequence	Time Allocation	Key Question/WALT	Teaching Activities	Resources
Lesson 1 How do flowering plants reproduce?	2 hour	<p><u>WALT: understand plants.</u></p> <p><u>Success Criteria</u></p>	<p><u>E-learning Link – Data Handling.</u></p> <p><u>I can choose an appropriate tool (digital microscope) to help me collect data</u></p> <p><u>Working scientifically links:</u></p>	<p>Enough flowers for at least one between two children.</p> <p>Ensure that</p>

		<ul style="list-style-type: none"> • I can describe the life process of sexual reproduction in flowering plants, including pollination and fertilisation. • I can explain the role of different parts of the flower in sexual reproduction. • I can present the process of sexual reproduction in flowering plants in a storyboard or other sequence. 	<p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>Ask: What do we know already about how flowering plants reproduce?</p> <p>Play True/False/Not always with children using Resource sheet 1.</p> <p>Read the cards in turn, display them and write down children's responses. This will provide a useful opportunity for you to assess children's existing knowledge and understanding, along with any misconceptions they may have. This card sort is used here and again at the end of the lesson. Statements included at this point revise children's learning about reproduction in flowering plants from Year 3. Additional cards should be added for the Reflect and Review part of the lesson, to help children recognise how their understanding has developed.</p> <p>Children should learn that all flowering plants do not produce 'perfect flowers' complete with male and female organs, but that there are some flowering plants with different sex flowers on the same or separate plants.</p> <p>Reinforce the importance of the flower. In this lesson the focus is on 'perfect flowers', those that contain both male and female parts. In the next lesson children will look closely at flowering plants that have separate male and female flowers on the same or different plants.</p>	<p>the flowers are large enough to have identifiable male and female organs, such as alstroemeria or daffodils (you can also use lilies, unless children dissected these in Year 3, Module 1, Lesson 8). Magnifiers, digital microscopes, iPads, digital cameras.</p> <p>Collins Snap Science Resource Sheets.</p>
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				Challenge slides. Snap Science Animation 1.
Lesson 2 Are all flowers on all plants the same?	2 hour	<p>WALT: understand plants.</p> <p><u>Success Criteria</u></p> <ul style="list-style-type: none"> • I can identify, name and describe in detail the function of the reproductive parts of a flower and the processes involved in plant reproduction. • I can describe how the flowers of some plants are different, including only male or female parts. • I can explain how the process of reproduction 	<p><u>E-learning Link – Data Handling.</u></p> <p><u>I can choose an appropriate tool (digital microscope) to help me collect data</u></p> <p><u>Working scientifically links:</u></p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Display the four statements on the first part of Interactive 1 and ask which are true and which false.</p> <p>Go on to the second part of Interactive 1 and click on the boxes to reveal explanations of the answers.</p> <p>Remind children that in the last lesson they learned about reproduction in most flowering plants. Ask them to talk to their partners and come up with a description of a flower and the process of reproduction. Ensure that they mention and name the male and female parts of the flower, such as stamen and carpel, and describe their function.</p> <p>Remind them of the term ‘perfect flower’ to describe a flower that has both male and female organs.</p> <p>Explain that today they are going to learn about some other types of flowering plants. Show them the Male and female flowers (Video 1), which gives a number of examples of other arrangements of flowers on plants: separate male</p>	<p>A variety of flowers (different from those observed in Lesson 1, including some single sex flowers), such as courgette, marrow, holly. If none are available, use images of single sex flowers, magnifiers, digital microscopes, digital cameras, modelling clay, clay, junk</p>

		differs in plants that have single sex flowers.	<p>and female flowers on the same plant, male and female flowers on separate plants of the same type.</p> <p>Ask: What did you notice about male and female flowers from the same plant? How are they different from 'perfect flowers' – those that have male and female parts?</p>	<p>modelling resources.</p> <p>Collins Snap Science Resource Sheets.</p> <p>Challenge slides.</p> <p>Snap Science Video 1.</p> <p>Snap Science Interactive 1.</p>
<p>Lesson 3</p> <p>Do all plants reproduce by producing seeds?</p>	2 hour	<p>WALT: understand plants.</p> <p><u>Success Criteria</u></p> <ul style="list-style-type: none"> • I can describe ways that plants are able to reproduce other than by producing seeds. • I can suggest why it is useful for plants to reproduce asexually. • I can produce a step-by-step 'How to' guide for a propagation 	<p><u>Working scientifically links:</u></p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>Begin with a number of prompt questions.</p> <p>Ask: Why is it useful for plants to reproduce without producing seeds? What needs to take place for seeds to be produced? Can you think why this could sometimes be a problem?</p> <p>Show children Propagating plants (Video 1), which describes how plants can reproduce themselves, other than by producing seeds.</p>	<p>Examples of bulbs such as garlic, onions or shallots (some of which can be cut up), tubers, rhizomes, seed potatoes, plants in pots such as fuchsia, begonia, geranium, rosemary,</p>

		<p>method of my choice.</p>	<p>Ask: What different methods of plant reproduction did we hear about? Has anybody propagated plants by taking cuttings, planted bulbs or grown potatoes themselves?</p> <p>Encourage children to talk about their experiences of gardening at home or with a relative, or in other classes at school or gardening club.</p> <p>Provide a selection of real plants and bulbs for children to look at, or alternatively use the images from Resource sheet 1. Encourage children to think about sorting the plants into groups, based on how they reproduce, other than by producing seeds.</p>	<p>mint, strawberry.</p> <p>Collins Snap Science Resource Sheets.</p> <p>Challenge slides.</p> <p>Snap Science Video 1.</p>
<p>Lesson 4</p> <p>How does the human life cycle compare of that of other mammals?</p>	<p>2 hour</p>	<p>WALT: work scientifically.</p> <p><u>Success Criteria</u></p> <ul style="list-style-type: none"> • I can name and sequence the stages on a human life cycle diagram. • I can compare the human life cycle with that of other mammals. • I can present data as a scatter graph. • I can use my graph to answer a question about life cycles. 	<p><u>Working scientifically links:</u></p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs.</p> <p>Show the life cycle diagram (Interactive 1) to children.</p> <p>Provide them with mini whiteboards and pens. For each familiar stage in turn (birth, growth, reproduction, ageing, death) ask children to write its name on their whiteboard before revealing it on the diagram (these will be the five labels nearest the top of the screen).</p> <p>Click below the reproduction label to reveal the arrow between reproduction and birth.</p> <p>Ask: What kind of animal are humans? What is the name for the stage between reproduction and birth in a mammal? Reveal the label for this stage. Move on to the</p>	<p>Mini whiteboards and pens.</p> <p>Collins Snap Science Resource Sheets.</p> <p>Challenge slides.</p> <p>Snap Science Slideshow 1.</p> <p>Snap Science Interactive 1.</p>

			<p>next screen to show the pictures and choose children to place them on the life cycle diagram.</p> <p>Draw attention to the adult male and female. The picture includes both because mammals reproduce sexually; a male and a female are needed. You may also want to draw attention to the fact that the elderly female is past the age at which she can reproduce.</p> <p>Move on to the next screen to the label for childhood (this is just after the birth label).</p> <p>Ask: What is the name for the stage between childhood and adulthood? Reveal the label. If children have not already learned about puberty in RSE lessons, explain to them that it is the stage during which humans become ready to reproduce.</p>	
<p>Lesson 5</p> <p>How do girls become women?</p>	2 hour	<p>WALT: understand animals and humans.</p> <p><u>Success Criteria</u></p> <ul style="list-style-type: none"> • I can identify differences between girls and women. • I can describe the changes that happen to girls during puberty. 	<p><u>Working scientifically links:</u></p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>Share the learning intention and explain to children that they will be learning about puberty in more detail. They are considering boys and girls separately; this lesson is about girls. Remind children about the ground rules that are used in PSHE lessons, including the use of correct vocabulary where known, rather than family or playground words. Provide each pair of children with the pictures of girls and women (Resource sheet 1), a sheet of paper and a pen. Ask them to sort the pictures into two groups – women and</p>	<p>Large sheets of paper and coloured pens or pencils for poster making; video camera, tablet computer with camera, or sound recording equipment, if available.</p>

		<ul style="list-style-type: none"> • I can give reasons for some of the changes. • If this lesson is taught after Lesson 8: I can compare puberty in males and females. 	<p>girls – and annotate the group or individual pictures within it to show what characteristics each group has. Remind the children that some of them may not be visible in the pictures. Take feedback from the pairs, list the features that have been identified and challenge any misconceptions. The outcomes from this activity will help you to identify children who may need additional support during the challenge activities. Children may already be familiar with some changes if your RSE programme introduces them in earlier year groups.</p>	<p>Collins Snap Science Resource Sheets.</p> <p>Challenge slides.</p> <p>Snap Science Animation 1.</p>
<p>Lesson 6</p> <p>How do boys become men?</p>	2 hour	<p>WALT: understand animals and humans.</p> <p><u>Success Criteria</u></p> <ul style="list-style-type: none"> • I can identify differences between boys and men. • I can describe the changes that happen to boys during puberty. • I can give reasons for some of the changes. • If this lesson is taught after Lesson 7: I can compare 	<p><u>Working scientifically links:</u></p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>Share the learning intention and explain to children that they will be learning about puberty in more detail. They are considering boys and girls separately; this lesson is about boys. Remind children about the ground rules that are used in PSHE lessons, including the use of correct vocabulary where known, rather than family or playground words. Provide each pair of children with the pictures of boys and men (Resource sheet 1), a sheet of paper and a pen. Ask them to sort the pictures into two groups – men and boys – and annotate the group or individual pictures within it to show what characteristics each group has. Take feedback from the pairs, list the features that have been identified and challenge any misconceptions. The outcomes from this activity can inform the grouping of children for the</p>	<p>Large sheets of paper and pens.</p> <p>Collins Snap Science Resource Sheets.</p> <p>Challenge slides.</p> <p>Snap Science Animation 1.</p>

		puberty in males and females.	challenge activities. Children may already be familiar with some changes if your RSE programme introduces them in earlier year groups.	
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