



## Y8 Science – Spring Term - Knowledge Overview

Year group:	Unit:	Date (from and to):		
Week beginning:	Big question / concept:	Learning intentions:	Resources	
			Offline: Offline:	Online including links on how to access these:
4 <sup>th</sup> January	Why is there variation between species?	<p><b>Identify</b> the difference between eukaryotic and prokaryotic cells</p> <p><b>Explain</b> how DNA is linked to the nucleus</p> <p><b>Define</b> variation as differences between species</p> <p><b>Describe</b> the causes of variation</p> <p><b>Explain</b> how the environment affects variation</p>	<p>Lesson 1 – Read the information on page 2.</p> <p>Label the diagrams on page 2.</p> <p>Read the information on page 3 and label the cell diagram</p> <p>Complete the table on page 4 identifying the differences between prokaryotic and eukaryotic cells.</p> <p>Lesson 2 –</p> <p>Read the information on page 4 and complete the questions on page 4 and the Venn diagram on page 5.</p>	<p>Eukaryotic cell - <a href="https://classroom.thenational.academy/lessons/comparing-animal-and-plant-cells-6gv38r?step=2&amp;activity=video">https://classroom.thenational.academy/lessons/comparing-animal-and-plant-cells-6gv38r?step=2&amp;activity=video</a></p> <p>Prokaryotic cell - <a href="https://classroom.thenational.academy/lessons/unicellular-organisms-6cuk0r?step=2&amp;activity=video">https://classroom.thenational.academy/lessons/unicellular-organisms-6cuk0r?step=2&amp;activity=video</a></p> <p>Variation and the environment - <a href="https://classroom.thenational.academy/lessons/variation-75gk6t?step=2&amp;activity=video">https://classroom.thenational.academy/lessons/variation-75gk6t?step=2&amp;activity=video</a></p> <p><a href="https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/3d5707ba-2286-40be-ab94-65392bf40a94/session">https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/3d5707ba-2286-40be-ab94-65392bf40a94/session</a></p>
4 <sup>th</sup> January	What makes someone's offspring look similar but not identical?	<p><b>Identify</b> gametes and where male and female gametes are produced</p> <p><b>Describe</b> how sexual reproduction leads to variation</p> <p><b>State</b> what is meant by heredity in terms of chromosomes</p>	<p>Lesson 3 –</p> <p>Read the information on page 5 and answer the questions.</p> <p>Read the information on page 6 and answer the questions.</p>	<p>Gametes and sexual reproduction – <a href="https://classroom.thenational.academy/lessons/sexual-vs-asexual-reproduction-ccr64t?from_query=gametes">https://classroom.thenational.academy/lessons/sexual-vs-asexual-reproduction-ccr64t?from_query=gametes</a></p> <p><a href="https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/3b37ba5d-c28f-4d5a-87ae-c5ac7f3c80af/session">https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/3b37ba5d-c28f-4d5a-87ae-c5ac7f3c80af/session</a></p>

		<p><b>Explain</b> why offspring from the same parents look similar but are not usually identical.</p>		
11 <sup>th</sup> January	How does a baby develop in the womb of a mother?	<p><b>Describe</b> the requirements of a developing foetus</p> <p><b>Use a diagram</b> to show stages in development of a foetus from the production of sex cells to birth</p>	<p>Lesson 4 – Use the information provided on page 7 about the development of the foetus and complete the task on page 8.</p>	<p>Development of the foetus  <a href="https://classroom.thenational.academy/lessons/gestation-6cr68d?from_query=foetus">https://classroom.thenational.academy/lessons/gestation-6cr68d?from_query=foetus</a></p> <p>Pregnancy -  <a href="https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/6e9d6e89-61fb-4bf3-88e2-645495fc768a/session">https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/6e9d6e89-61fb-4bf3-88e2-645495fc768a/session</a></p> <p><a href="https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/d2631b02-3042-4afb-8c65-9ec5743558e9/session/start">https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/d2631b02-3042-4afb-8c65-9ec5743558e9/session/start</a></p>
11 <sup>th</sup> January	How can you calculate the probability of someone's offspring?	<p><b>Define</b> alleles</p> <p><b>Define</b> homozygous and heterozygous</p> <p><b>Define</b> dominant and recessive</p> <p><b>Define</b> phenotype and genotype</p> <p>Use a Punnett squares to show how genes are inherited</p> <p>Use Punnett squares to calculate the probability.</p>	<p>Lesson 5 – Read the information on page 8 and answer the questions.</p> <p>Lesson 6 – Complete the questions on Punnett squares on page 9 and 10 by reading the example provided on page 9.</p>	<p>Alleles and Punnett squares -  <a href="https://classroom.thenational.academy/lessons/inheritance-cngkjt?step=2&amp;activity=video">https://classroom.thenational.academy/lessons/inheritance-cngkjt?step=2&amp;activity=video</a></p>

11 <sup>th</sup> January	How was the DNA model developed?	<p><b>Recall</b> the scientists involved in the development of the DNA model.</p> <p><b>Explain</b> the roles played by Watson, Crick, Wilkins and Franklin.</p>	Lesson 7 – Read the information on page 10 and answer the questions.	DNA Structures and its discovery <a href="https://classroom.thenational.academy/lessons/how-has-the-discovery-of-dna-changed-science-6wvk2c?step=2&amp;activity=video">https://classroom.thenational.academy/lessons/how-has-the-discovery-of-dna-changed-science-6wvk2c?step=2&amp;activity=video</a>
11 <sup>th</sup> January	What is the human genome project?	<p><b>Define</b> a genome</p> <p><b>Describe</b> the human genome project</p> <p><b>Suggest</b> benefits from scientists knowing all the genes in the human genome.</p>	Lesson 8 – Read the information on page 11 and answer the questions.	Human Genome Project <a href="https://classroom.thenational.academy/lessons/genes-dna-and-chromosomes-71gk6d?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/genes-dna-and-chromosomes-71gk6d?activity=video&amp;step=1</a>
18 <sup>th</sup> January 2021	<b>What happens to atoms in chemical reactions?</b>	<p><b>Explain</b> the term “conservation of mass” in terms of atoms.</p> <p><b>Describe</b> a chemical and physical change giving examples.</p> <p>Write word and symbol equations to represent chemical reactions.</p>	Lesson 1 of home learning pack 4 (pages 2 and 3) Complete <b>task 1</b> .  Lesson 2 and 3 of Home learning pack 4 (pages 4,5 & 6) Complete <b>task 1, 2 and 3</b> .	Conservation of mass lesson <a href="https://classroom.thenational.academy/lessons/conservation-of-mass-74tk8t">https://classroom.thenational.academy/lessons/conservation-of-mass-74tk8t</a>  Revision on Physical and Chemical changes <a href="https://www.bbc.co.uk/bitesize/guides/z96qv9q/revision/3">https://www.bbc.co.uk/bitesize/guides/z96qv9q/revision/3</a>
18 <sup>th</sup> January 2021	<b>What is combustion?</b>	<p><b>Describe</b> complete and incomplete combustion and use balanced symbol equations.</p> <p><b>Describe</b> the test for carbon dioxide</p>	Lesson 4 from home learning pack 4 (pages 7,8 and 9). <b>Complete task on page 9</b> .	Combustion lesson <a href="https://classroom.thenational.academy/lessons/combustion-chgk4e">https://classroom.thenational.academy/lessons/combustion-chgk4e</a>  Complete and incomplete combustion lesson <a href="https://classroom.thenational.academy/lessons/complete-and-incomplete-combustion-70ukgc">https://classroom.thenational.academy/lessons/complete-and-incomplete-combustion-70ukgc</a>

25 <sup>th</sup> January 2021		<p><b>Describe</b> thermal decomposition as a chemical reaction.</p> <p>Write word and balanced symbol equations for the thermal decomposition of metal carbonates.</p>	<p>Lesson 5 from home learning pack 4 (pages 10 &amp; 11) <b>Complete task on page 11.</b></p>	<p>Thermal decomposition lesson <a href="https://classroom.thenational.academy/lessons/thermal-decomposition-64uk4d">https://classroom.thenational.academy/lessons/thermal-decomposition-64uk4d</a></p>
1 <sup>st</sup> February 2021	<b>How do we utilize energy changes?</b>	<p><b>Describe</b> Endothermic and Exothermic reactions.</p> <p><b>Describe</b> the uses of endothermic and exothermic reactions to help with sports injuries.</p>	<p>Lesson 7 and 8 from home learning pack 4 (pages 14, 15 &amp;16). <b>Complete task on page 16.</b></p>	<p>States of matter lesson <a href="https://classroom.thenational.academy/lessons/solids-liquids-and-gases-74tp8t">https://classroom.thenational.academy/lessons/solids-liquids-and-gases-74tp8t</a></p> <p>Changes of state lesson <a href="https://classroom.thenational.academy/lessons/changes-of-state-6mw6ar">https://classroom.thenational.academy/lessons/changes-of-state-6mw6ar</a></p>
8 <sup>th</sup> February 2021	<b>What is everything made up of?</b>	<p>Recall a particle diagram for solid, liquid and gas.</p> <p>Show the changes of state using a diagram</p> <p><b>Explain</b> what happens to particles in terms of energy during melting and freezing.</p>	<p>Lesson 7 and 8 from home learning pack 4 (pages 14, 15 &amp;16). <b>Complete task on page 16.</b></p>	<p>States of matter lesson <a href="https://classroom.thenational.academy/lessons/solids-liquids-and-gases-74tp8t">https://classroom.thenational.academy/lessons/solids-liquids-and-gases-74tp8t</a></p> <p>Changes of state lesson <a href="https://classroom.thenational.academy/lessons/changes-of-state-6mw6ar">https://classroom.thenational.academy/lessons/changes-of-state-6mw6ar</a></p>