

# Home-School Learning Collaboration – Science



<b>Topics in this cycle:</b> Inheritance, Evolution and Drugs	<b>Taught:</b> Summer 1	<b>Year Group:</b> 9
Key knowledge/concepts to be learnt ('Tell me about...')		Websites/blogs/YouTube links and further reading to deepen and consolidate learning
<ul style="list-style-type: none"> <li>• <b>Where is our DNA stored?</b></li> <li>• "Describe the structure and function of DNA.</li> <li>• Use diagrams to show the relationship between DNA, chromosomes and genes.</li> <li>• Suggest benefits from scientists knowing all the genes in the human genome.</li>   <li>• <b>How are gametes made?</b></li> <li>• Demonstrate an understanding of the differences between mitosis and meiosis.</li> <li>• Understand that meiosis is exclusive to gamete production and subsequently sexual reproduction.</li> <li>• Demonstrate an understanding of the role of dominant and recessive alleles in determining specific characteristics.</li>   <li>• <b>What causes a mutation?</b></li> <li>• Mutations are not always negative.</li> <li>• Genetic manipulation is a highly specific technique. Its applications have major benefits.</li> <li>•</li> <li>• <b>What is a drug?</b></li> <li>• Describe what a drug is, whilst identifying some common examples</li> <li>• Identify the risks involved in excessive alcohol consumption.</li> <li>• Link the chemicals in smoke to health damage.</li> <li>• Link the effects of marijuana to evidence, to form an opinion on legalisation.</li> <li>• Evaluate how drugs shape the modern world and their place in society.</li> </ul>		<p>DNA  <a href="#">DNA - An Introduction (GCSE Biology) - Study Mind</a></p> <p>Gametes  <a href="#">Where does our genome come from? - Genomics Education Programme (hee.nhs.uk)</a></p> <p>Mutation  <a href="#">DNA and Reproduction – GCSE Biology (Combined Science) Edexcel Revision – Study Rocket</a></p> <p>Drug  <a href="#">Alcohol and Smoking - The Dangers of Alcohol and Smoking - 9-1 GCSE Biology - YouTube</a></p>

Key Vocabulary and Definitions To Be Learnt		What Will The Assessment Look Like?
<b>Cell</b>	A cell is the basic unit of life that is responsible for the living and functioning of organisms.	<p><b>Extended writing – Explain why you share some characteristics with your mother and some with your father.</b></p> <p><b>End of Unit test:</b> 25 marks</p> <ul style="list-style-type: none"> <li>• Short answer questions</li> <li>• Multiple choice</li> <li>• Extended writing</li> </ul>
<b>Chromosome</b>	The DNA is contained in structures called chromosomes.	
<b>DNA</b>	DNA, or deoxyribonucleic acid, DNA is a polymer made from two strands which twist around each other making a spiral ladder.	
<b>Gene</b>	A gene is a small section of DNA on a chromosome	
<b>Gamete</b>	Gametes are sex cells, that is egg and sperm in humans.	
<b>Nucleus</b>	The nucleus controls and regulates the activities of the cell (e.g., growth and metabolism) and carries the genes, structures that contain the hereditary information.	Family Learning Opportunities
<b>Allele</b>	Allele are different forms of a gene.	Create a funny genetic cartoon
<b>Mutation</b>	Any change in the DNA sequence of a cell	Create a drugs and alcohol throw and know ball
<b>Recessive Allele</b>	Only shows if the individual has two copies of the recessive allele.	<a href="#">Drugs and Alcohol Throw &amp; Know™ Activity Ball   Health Edco</a>
<b>Dominant Allele</b>	Dominant allele always shows, even if the individual only has one copy of the allele.	Create a drugs and alcohol poster for your friends.
<b>Depressant</b>	Drugs that decrease alertness by slowing down the activity of the central nervous system	<a href="#">Drug and Alcohol Prevention Posters (k12posters.com)</a>
<b>Stimulant</b>	Stimulants speed up the activity of the nervous system	Devise a quiz on DNA and test your family
<b>Passive Smoking</b>	Breathing in other people's smoke is known as exposure to second-hand smoke or passive smoking.	
<b>Medicinal Drug</b>	A substance or combination of substances that is intended to treat, prevent or diagnose a disease, or to restore, correct or modify physiological functions by exerting a pharmacological, immunological or metabolic action.	
<b>Recreational Drug</b>	"Recreational drugs" is a loose term that refers to legal and illegal drugs that are used without medical supervision.	