

Biological Processes		Curriculum Checkpoints: What do students know and what can they do?				17 Clips
Year 8	Summative Comment	Developing	Securing	Mastering	Excelling	
Substantive Knowledge		<p>I need to ..... name the parts of the gas exchange system</p> <p>..... state the parts of the gas exchange system are adapted to their function</p> <p>..... state that the composition of the air inhaled and exhaled are different using data provided. I need to state what happens to the ribcage and diaphragm during inhaling and exhaling</p> <p>..... state where joints are found in the body</p> <p>..... state how a muscle exerts force during movement</p> <p>..... state the definition of antagonistic muscles</p> <p>..... the requirements for aerobic respiration</p> <p>..... state the process where energy is released in cells.</p> <p>..... state the word equation for aerobic respiration.</p> <p>..... state the products of anaerobic respiration</p> <p>..... state one difference between aerobic and anaerobic respiration</p> <p>..... state the word summary for anaerobic respiration</p>	<p>I can ..... describe the structure of the gas exchange system</p> <p>..... partially explain how the adaptations of the parts of the gas exchange system help them to perform their function</p> <p>..... partially describe the process of inhaling and exhaling</p> <p>..... partially describe how the bell jar can be used to model what happens during breathing</p> <p>..... partially explain how to measure lung volume</p> <p>..... partially explain how the actions of the ribcage and diaphragm lead to inhaling and exhaling</p> <p>..... describe the structure of the skeleton</p> <p>..... describe the function of the skeletal system</p> <p>..... describe the role of joints</p> <p>..... explain how to measure the force exerted by different muscles</p> <p>..... partially interpret observations about the muscles involved in the movement of the elbow</p> <p>..... describe the function of major muscles groups</p> <p>..... partially explain how antagonistic muscles cause movement</p> <p>..... partially describe the process of respiration I can partially explain how the reactants for respiration get into the cells</p> <p>..... partially describe the differences between aerobic and anaerobic respiration</p> <p>..... partially explain the uses of the products from anaerobic respiration</p> <p>..... partially explain the differences between the two types of respiration</p>	<p>I can ..... confidently describe how the parts of the gas exchange system are adapted to their function</p> <p>..... confidently describe the gas exchange system as an organ system, linking the organs</p> <p>..... confidently explain how the actions of the rib cage and diaphragm lead to inhaling and exhaling</p> <p>..... confidently explain the relationship between the bones and joints in the skeleton</p> <p>..... confidently explain the link between structure and functions in the skeletal system</p> <p>..... confidently explain how the parts of the joint allow it to function</p> <p>..... confidently explain the relationship between the forces required to move different masses</p> <p>..... confidently explain how the muscle groups interact with other tissues to cause movement</p> <p>..... confidently explain why it is necessary to have both muscles in antagonistic pair to cause movement</p> <p>..... confidently explain the process of aerobic respiration</p> <p>..... confidently describe the differences between aerobic and anaerobic respiration</p> <p>..... confidently explain the uses of the products from anaerobic respiration</p> <p>..... confidently explain the differences between the two types of respiration</p>	<p>I can ..... expertly describe and explain the following adaptations for gas exchange:</p> <p>a. Trachea is made up of c-shaped rings of cartilage</p> <p>b. There are millions of alveoli. I can explain one cause, one symptom and one prevention method of osteoporosis. I can expertly explain the process of aerobic respiration and why it is necessary</p> <p>..... expertly explain the process of aerobic respiration and anaerobic respiration I can expertly compare and contrast aerobic and anaerobic respiration.</p> <p><a href="https://www.bbc.co.uk/programmes/p0131m4r">https://www.bbc.co.uk/programmes/p0131m4r</a></p> <p><a href="https://www.youtube.com/watch?v=3h4T1C0y4A">https://www.youtube.com/watch?v=3h4T1C0y4A</a></p>	
	Disciplinary Knowledge	<p>I need to ..... state what each part of the bell jar model represents</p> <p>..... state the value of lung volume</p> <p>..... be able to use apparatus provided to obtain a lung volume</p> <p>..... carry out an experiment to make simple observations</p> <p>..... state the function of major muscle groups</p> <p>..... be able to follow instructions and carry out an experiment about muscles involved in movement of the elbow</p>	<p>I can ..... carry out an experiment to make a record measurement of forces using the correct units</p> <p>..... partially compare the bell jar model with how we breathe</p> <p>..... use appropriately calibrated apparatus to obtain lung volume with instruction.</p>	<p>I can ..... confidently interpret data given to compare the composition of inhaled and exhaled air</p> <p>..... confidently compare the bell jar model with how we breathe</p> <p>..... confidently explain weaknesses of the bell jar model in explaining breathing</p> <p>..... confidently explain how to measure lung volume</p> <p>..... confidently interpret data collected in an experiment, to identify a pattern between muscle fatigue and repetitive muscle contraction</p>	<p>I can ..... expertly and independently use appropriately calibrated apparatus to obtain an accurate lung volume</p> <p>..... evaluate the precision of the instruments involved</p> <p>..... expertly and independently carry out an experiment to record measurements of forces in Newtons</p> <p>..... evaluate the accuracy and precision of the method chosen</p> <p>..... expertly and independently interpret data from the muscle contraction experiment, identifying patterns between the levels of fatigue during muscle contraction given different periods of rest</p> <p><a href="https://www.youtube.com/watch?v=C1xQ8Kd08">https://www.youtube.com/watch?v=C1xQ8Kd08</a></p>	