

**Assessment Schedule – 2008****Biology: Describe the functioning of human digestive and skeletomuscular systems (90166)****Evidence Statement**

<b>Q</b>	<b>Achievement</b>	<b>Achievement with Merit</b>	<b>Achievement with Excellence</b>
SECTION A ONE (a)	Describes the purpose of digestion. Eg: Digestion occurs to break down large (food) molecules into small (food) molecules / digestion occurs to break down food so it can be absorbed.		
(b)	Describes the function of the stomach in digestion. Eg: The stomach adds gastric juice with the enzyme pepsin to digest protein OR HCl kills bacteria.  (NOTE: Need the word 'enzyme' or a named enzyme for the first option.)		

(c)	<p>Describes the role of the duodenum in the process of digestion.</p> <p>Eg: Bile, secreted by the gall bladder, emulsifies fat. OR Bile, secreted by the gall bladder, neutralises the acidic material from the stomach. OR The pancreas secretes pancreatic juice / enzymes / a named enzyme, OR Pancreatic juice secreted by the pancreas neutralises the acidic material from the stomach. OR Muscle contractions (peristalsis), mix food with bile / enzymes / pancreatic juice.</p>	<p>Explain the role of the gall bladder OR the pancreas in change in pH OR change in surface area in the duodenum.</p> <p>Eg: Bile contains salts that emulsify fat into small droplets; this increases the surface area of the food so that digestive enzymes can work more effectively / can work faster. OR The alkaline nature / high pH of the bile neutralises the acidic content of the stomach enabling enzymes to work efficiently. OR The alkaline nature of pancreatic juices neutralise the acidic content of the stomach enabling enzymes to work efficiently.</p>	<p>Link the role of the gall bladder and changes in pH and surface area with the role of the pancreas in the duodenum.</p> <p>Eg: The duodenum is where bile is added to the food to help digest fats. Bile is an alkaline liquid that is stored in the gall bladder ready to be released into the duodenum when food that contains fat is present. Bile contains salts, which help to break up the fat molecules, by breaking up large fat globules into an emulsion of many tiny droplets. This greatly increases the surface area of the fat, speeding up the action of the fat-digesting enzyme lipase, which has also been added from the pancreas. The alkaline nature of the bile neutralises the acidic content of the stomach and creates the correct pH that enables all the enzymes that have been secreted by the pancreas to digest starch, proteins and fats, to work properly. The muscle movement (peristalsis) in the walls of the duodenum helps to mix the food (chyme) with the bile and the enzymes, enabling rapid digestion to occur.</p>
TWO (a)	<p>Describes constipation AND diarrhoea.</p> <p>Eg: Constipation occurs when there is hard / dry faecal material .</p> <p>AND</p> <p>Diarrhoea occurs when faecal material is very soft / liquid.</p>	<p>Identifies a reason for how constipation and diarrhoea are different.</p> <p>Eg: Constipation occurs when there is not enough movement of faecal material in the large intestine, resulting in hard faecal material that is difficult to pass due to loss of water by reabsorption. Diarrhoea, on the other hand, occurs when not enough water is absorbed from the faecal material, resulting in very soft or liquid faecal material that moves quickly through the large intestine.</p>	

(b)	<p>Describes the process of chemical AND physical digestion.</p> <p>Eg: Physical digestion occurs when food is broken down into smaller pieces by the teeth or the muscle action of the intestine wall.</p> <p>Eg Food is broken down into smaller pieces by the action of enzymes.</p>	<p>Gives a reason for why physical OR chemical digestion necessary for efficiency.</p> <p>Eg: Physical digestion occurs when food is broken down into smaller pieces by the teeth or the muscle action of the intestine wall. This is necessary for efficient digestion because it increases the <u>surface area</u> available for the enzymes to act on.</p> <p>Eg: Chemical digestion occurs when enzymes break the bonds holding food particles/molecules together.</p>	<p>Makes links between physical and chemical digestion AND reasons for why both are necessary for digestion to be efficient.</p> <p>Eg: Physical digestion occurs when food is broken down into smaller pieces by the teeth or the muscle action of the intestine wall. Chemical digestion is similar in that it results in food being broken down into smaller pieces, but is different in that it involves the use of enzymes that break the chemical bonds holding the food molecules together. Both types of digestion are required because physical digestion breaks up the larger pieces of food first, thus increasing the surface area available for the enzymes in chemical digestion to work on and therefore increasing the efficiency of the digestive process.</p>
SECTION B THREE (a)	<p>Describes a function of muscles in the body.</p> <p>Eg: Muscles are for movement of the body.</p> <p>OR</p> <p>Any specific muscle function that results in movement.</p>		
(b)	<p>Describes a muscle strain.</p> <p>Eg: A muscle strain occurs when there is damage to the muscle fibres or the tendon that attaches the muscle to the bone.</p>	<p>Identifies a reason for how muscle strain affects movement.</p> <p>Eg: A muscle strain occurs when there is damage to the muscle fibres or the tendon that attaches the muscle to the bone, caused by the fibres or tendon being stretched beyond normal. This has the effect of reducing movement because the damaged tendon or muscle cannot pull effectively on the bone, and therefore movement of the joint is restricted.</p>	

(c)	<p>Describes the function of ONE part of the joint.</p> <p>Eg: The tendon attaches the muscle to the bone. OR Ligaments hold bones together / stabilise joints. OR Muscles contract / relax to lift / lower bones. OR Bones are attachment sites for tendons / muscles.</p>	<p>Gives a reason for how TWO parts of the joint work together to allow the joint to bend.</p> <p>Eg: The tendon attaches the muscle to the bone. As the muscle contracts and shortens, the tendon pulls the lower bone upwards.</p>	<p>Makes links between how ALL parts of the joint work together to allow the joint to bend.</p> <p>Eg: The tendon attaches the muscle to the bone. As the muscle contracts and shortens, the tendon pulls the lower bone upwards. Meanwhile the ligament, which attaches the lower and upper bones in the joint to each other, stretches to allow for the movement while maintaining the stability of the joint.</p>
FOUR (a)	<p>Describes a function of the skeleton.</p> <p>Eg: The skeleton provides support for the body / protection for vital organs / makes blood cells.</p>		
(b)	<p>Describes osteoporosis AND arthritis.</p> <p>Eg: Osteoporosis occurs when bones are weakened / lose density OR Arthritis occurs when a joint is inflamed and stiff.</p>	<p>Gives a reason for the causes AND effects of osteoporosis OR arthritis.</p> <p>Eg: Osteoporosis occurs when bones are weakened due to loss of bone density. This can be caused by loss of density of the bone due to aging, loss of calcium from the bone, and hormonal changes during menopause.</p> <p>Arthritis is caused by the wearing away of the cartilage on the ends of bones in a joint which results in the bones rubbing over each other causing swelling and reducing movement.</p>	<p>Gives reasons for the causes AND effects of osteoporosis AND arthritis.</p> <p>Eg: Osteoporosis occurs when bones are weakened due to loss of bone density. This can be caused by loss of density of the bone due to aging, loss of calcium from the bone, and hormonal changes during menopause. Arthritis, on the other hand, is caused by the wearing away of the cartilage on the ends of bones in a joint, which results in the bones rubbing over one another and the joint swelling, reducing movement.</p>

## Judgement Statement

Note: this standard requires evidence from both the human digestive system and the skeletomuscular system; this is noted by reference to specific sections as below.

Achievement	Achievement with Merit	Achievement with Excellence
<p>Total of SIX opportunities answered at Achievement or higher:</p> <p>At least TWO must be from Section A</p> <p>AND</p> <p>At least TWO must be from Section B.</p>	<p>Total of EIGHT opportunities answered correctly:</p> <p>TWO at Merit level or higher in Section A</p> <p>OR</p> <p>TWO at Merit level or higher in Section B.</p> <p>PLUS</p> <p>SIX at Achievement level (including 2 from Section A and 2 from Section B).</p>	<p>Total of NINE opportunities answered correctly:</p> <p>ONE at Excellence level from Section A</p> <p>AND</p> <p>TWO at Merit level from Section A</p> <p>OR</p> <p>ONE at Excellence level from Section B</p> <p>AND</p> <p>TWO at Merit level from Section B</p> <p>PLUS</p> <p>SIX at Achievement level (including TWO from Section A and TWO from Section B ).</p>
$6 \times A$	$2 \times M + 6 \times A$	$1 \times E + 2 \times M + 6 \times A$