KS3 ASSESSMENT

[BIOLOGY]

BRAMHALL HIGH SCHOOL

Year 7	Acquiring	Developing	Secure	Mastered
	Is beginning to acquire the necessary knowledge for the topic(s)	Is developing the knowledge necessary to understand the topic	Understands the topic and is able to make links using the knowledge	Fully understands the topic and is able to confidently link knowledge.
Term 1a 7A Cells, Tissues, Organs and System.	Able to demonstrate a basic knowledge of cells, tissues, organs and systems including: Identify things as being alive or not. State the meanings of: tissue, organ, organ system. Identify the basic parts of a light microscope. Identify a cell as an animal cell. Identify a cell as a plant cell.	Able to demonstrate a growing knowledge of cells, tissues, organs and systems including: Describe the life processes. Describe how cells, tissues, organs and organ systems are related. Describe how to prepare a microscope slide. List the main features commonly found in animal cells. List the main features commonly found in plant cells.	Able to demonstrate and begin to apply an excellent knowledge of cells, tissues, organs and systems including: Use life processes to justify whether something is living or is non-living. Describe the functions of different tissues within an organ. Calculate total magnification using a formula. Describe the function of the nucleus, cell membrane and cytoplasm. Describe what the cell wall, permanent vacuole, chloroplasts do.	Able to demonstrate and apply an extensive knowledge of cells, tissues, organs and systems including: Compare life processes in a range of plants and animals. Consider the use of tissue in an organ transplant. Estimate the size of a specimen under a microscope. Suggest reasons for differences Between animal cells in terms of their function. Suggest reasons for differences Between plant cells in terms of their function.

Term 1b 7A Cells, Tissues, Organs and System. 7B Sexual Reproduction in Animals	Identify some plant and animal organs. State the meaning of organ system. _____ Able to demonstrate a basic knowledge of reproduction including: State the meaning of sexual reproduction. Identify ways in which animals care for their offspring.	Describe the functions of major organs. Describe how organs work together as organ systems. _____ Able to demonstrate a growing knowledge of reproduction including: Identify sperm cells and egg cells as gametes. Describe how fish, birds and mammals care for their offspring.	Identify similarities between the functions of different organs. Identify organs working together as a system. _____ Able to demonstrate and begin to apply an excellent knowledge of reproduction including: Describe how the fusing of gametes and their nuclei during fertilisation forms a fertilised egg cell. Compare the amount of care of in fish, birds, mammals.	Identify differences between the parts of an organ. Compare the roles of different organ systems. _____ Able to demonstrate and apply an extensive knowledge of reproduction including: Describe how a fertilised egg cell grows into an embryo. Explain the implications of a certain level of aftercare in different situations.
Term 2a 7B Sexual Reproduction in Animals	Identify the structures and organs in the human reproductive system. State the meaning of: growth, cell division. Recall the length of pregnancy in humans.	Describe the functions of the structures and organs of the human reproductive system. Describe what happens during cell division. State the meaning of:	Use knowledge of the of reproductive organs to make deductions about reproductive processes. Describe how a woman becomes pregnant after fertilisation. Identify and recall the names of the structures surrounding	Compare the reproductive systems of humans and other Animals. Explain how identical and non-identical twins occur. Describe how the developing foetus is protected inside

	State the meaning of: premature baby. Recall the length of the menstrual cycle. State the meaning of: puberty, adolescence.	foetus, gestation, umbilical cord, placenta. Recall the names of substances in a mother's blood that may harm a developing foetus. Explain the purpose of the menstrual cycle. Identify the role of sex hormones in puberty.	the developing foetus that provide nutrition, oxygen, waste removal. List the main stages of giving birth in humans. Explain why the uterus lining is maintained if fertilisation occurs. Identify the parts of the body that change in males and females during puberty.	the mother. Describe what happens during labour and birth in humans. Describe the stages in the menstrual cycle. Describe what happens to parts of the body during puberty.
Term 2b 7C Muscles and Bones	Able to demonstrate a basic knowledge of muscles and bones including: Recall the major bones in the human skeleton. State the functions of the muscular, skeletal, locomotor and musculoskeletal systems.	Able to demonstrate a growing knowledge of muscles and bones including: Describe the functions of the major bones in the human skeleton. Describe how muscles and bones work together to allow movement.	Able to demonstrate and begin to apply an excellent knowledge of muscles and bones including: Relate the properties of bones to their functions. Classify joints as different types.	Able to demonstrate and apply an extensive knowledge of muscles and bones including: Compare the different types of skeleton. Describe what happens when muscles contract and relax to move a bone.

Term 3a 7C Muscles and Bones	Describe the functions of the main parts of the human gaseous exchange system. Describe the functions of red blood cells, white blood cells, plasma and platelets. State the meaning of: drug. _____	Describe how muscles attached to ribs and the diaphragm produce breathing Movements. Explain how a red blood cell is adapted to its function. Classify drugs as legal, illegal, medical, recreational. _____	Describe what happens during gas exchange. Describe the route taken by blood through the heart. Recall the effects and side effects of some common drugs (including medicines). _____	Use a knowledge of respiration and ventilation to explain why inhaled air differs from exhaled air. Explain the oxygenation levels of the blood in different parts of the heart. Describe the effects of stimulants, depressants on reaction times. _____ Able to demonstrate and apply an extensive knowledge of ecosystems including: Describe how hybrids can be distinguished from species. Explain how environmental and inherited factors can cause variation. Explain how variation can cause problems for classification.
7D Ecosystems	Able to demonstrate a basic knowledge of ecosystems including: Define what is meant by: variation. Define the meaning of: ecosystem, community, Interdependent. Describe physical and behavioural adaptations of a range of organisms to their habitats.	Able to demonstrate a growing knowledge of ecosystems including: Identify variation between organisms of the same type and of different types. Describe physical and behavioural adaptations of a range of organisms to their habitats. Identify the preferred physical conditions of an organism.	Able to demonstrate and begin to apply an excellent knowledge of ecosystems including: Tell the difference between and identify examples of continuous and discontinuous variation. Explain how particular adaptations increase the chances of survival. Explain how and why some environmental factors are related.	

Term 3b 7D Ecosystems	Identify examples of resources needed by more than one type of organism. Define the meanings of: recycling, reusing, landfill.	Explain why organisms are in competition in a given habitat. Define feeding relationships in terms of energy flow.	Describe how the distribution of organisms is controlled by the availability of resources. Explain the gains and losses of energy from living.	Explain how changes in a population in an ecosystem affect other populations. Analyse data to draw pyramids of biomass.

Year 8	Acquiring	Developing	Secure	Mastered
	Is beginning to acquire the necessary knowledge for the topic(s)	Is developing the knowledge necessary to understand the topic	Understands the topic and is able to make links using the knowledge	Fully understands the topic and is able to confidently link knowledge.
Term 1a 8A Food and Digestion	Recall that tests can be done for nutrients in food. State what is shown on food labels. Recall the different names of the different nutrients in food and why we need food. State the meaning of diabetes, obesity and balanced diet.	Describe the food test for (starch, protein, fats, sugar). Interpret nutrition information labels. Describe the general uses of the nutrients by the body and how it acts as fuel for the body. Describe the relationship between diet, exercise, age and energy.	Interpret the results of food tests (for starch, proteins and fat). Use nutrition information labels to calculate the totals of different things (in a meal, in a diet), using different units. Explain how deficiency diseases are caused and their effects on health. Use dietary advice or nutrition information to describe a healthy diet.	Interpret the results of food tests (sugar). Evaluate different types of (nutritional, advertising) labelling on foods. Justify the need for protein and other nutrients, from a variety of different sources. Calculate and use BMIs to draw conclusions about rates of obesity.

	Recall the order in which organs of the digestive system are involved in digestion. Use a model to describe basic enzyme action.	Describe how food is moved through the digestive system and describe the functions of the organs involved. Describe the function of named enzymes in the human digestive system.	Explain how some bacteria are useful in the gut. Use the lock-and-key hypothesis to explain how enzyme action is affected by different factors.	Compare the benefits and drawbacks of the presence of these bacteria. Describe the importance of surface area in the speed at which food can be digested by enzymes.
Term 1b 8A Food and Digestion 8B Plants and their Reproduction	State what is meant by: diffusion. Recall the five kingdoms of organisms. Define the meaning of: biodiversity. Identify and give examples of Characteristics that vary due to Different factors. Identify plants that can reproduce asexually.	Explain how the structure of villi allows efficient absorption of the soluble products of digestion. Describe the key characteristics of the five kingdoms into which organisms are classified. Explain why preserving biodiversity is important. Explain how these factors can cause variation. Describe how plants such as reproduce asexually.	Use a knowledge of diffusion to explain how nutrients enter the blood from the small intestine. Identify the many groups to which an organism belongs. Use simple calculations to compare biodiversity. Explain how these factors can cause variation of the same characteristic.	Explain the problems caused by diseases such as food intolerances, food allergies, coeliac disease etc. Use criteria to judge how good a fit a certain organism is in a certain kingdom. Suggest ways in which biodiversity can be improved, considering trends in calculations. Explain how variation can cause problems for classification. Evaluate the advantages and disadvantages of sexual and

	Describe the functions of the structures in flowers.	Describe the events that occur after pollination leading to fertilisation.	Explain the difference in outcomes of asexual and sexual reproduction in plants. Explain the importance of pollination for the production of foods.	asexual reproduction in plants in different conditions. Evaluate pollen grains to decide on a plant's method of pollination.
Term 2a 8B Plants and their Reproduction 8C Breathing and Respiration	Describe how different fruits disperse seeds. Recall the resources needed for germination. Recall what happens in aerobic respiration.	Explain the importance of seed dispersal. Describe the life cycle of a plant. Describe how respiration can be detected	Explain why plants try to avoid self-pollination. Compare the life cycles of different plants that grow in different places. Model aerobic respiration using a word equation.	Evaluate different methods of seed dispersal. Explain the importance of light/darkness for some seeds and their germination. Compare burning (combustion) and respiration.
Term 2b 8C Breathing and Respiration	State the function of the lungs Describe how breathing rate and heart rate are affected by exercise.	Describe what happens during gas exchange. Describe the effects of some chemicals in tobacco smoke on the body.	Use a knowledge of respiration and ventilation to explain why inhaled air differs from exhaled air. Explain the changes in heartbeat and breathing rate during exercise.	Use a pressure model to explain ventilation Explain why exercise is recommended to [prevent, help people with] cardiovascular disease. Compare gas exchange organs

	State the function of the gas exchange system Recall what happens in anaerobic respiration	Explain how lungs are adapted for gas exchange Explain why anaerobic respiration happens	Model aerobic respiration with a word equation Model anaerobic respiration with a word equation	Compare the different forms of respiration
Term 3a 8D Unicellular Organisms	Identify different cell structures. Know some conditions that microorganisms need to grow. Identify the basic parts of a bacteria cell.	Describe characteristics of the five kingdoms Describe how yeast multiply by budding. Know why bacteria are used in yoghurt making.	Use characteristics to classify organisms. Explain how yeast are used to make bread. Describe what the [loop of DNA, soft cell wall, flagella, cytoplasm, cell membrane and plasmids] do.	Explain the importance of surface area to volume ratio. Calculate rates of growth Link a microorganism's method of respiration to its use by humans.
Term 3b 8D Unicellular Organisms	Describe what happens in photosynthesis. Define the word ecosystem.	Explain the function of chlorophyll. Explain the importance of decomposers.	Modal photosynthesis using a word equation. Model the recycling of carbon using a cycle	Use the word equation for photosynthesis to identify limiting factors. Compare the benefits of decay

Year 9	Acquiring	Developing	Secure	Mastered
	Is beginning to acquire the necessary knowledge for the topic(s)	Is developing the knowledge necessary to understand the topic	Understands the topic and is able to make links using the knowledge	Fully understands the topic and is able to confidently link knowledge.
Term 1a 9A Genetics and evolution	Define what is meant by species Define what is meant by: variation. State the base pairing rules for adenine, thymine, cytosine and guanine. Describe adaptations of a range of organisms to their habitats. State that the individuals in a population are likely to vary from one another genetically.	Describe how hybrids can be distinguished from species. Tell the difference between and identify examples of continuous and discontinuous variation. Describe the structure of a DNA molecule. Explain how particular adaptations increase the chances of survival. Explain how natural selection determines the survival of certain variations of adaptations within a population.	Identify the parents of a hybrid. Interpret information on continuous variation using normal distribution curves. Use a model to illustrate the relationship between DNA, chromosomes, genetic information and genes. Explain how particular adaptations limit an organism's distribution, Explain how natural selection can lead to evolution.	Explain why hybrids confuse the idea of a species and make classification difficult. Investigate the variations within a species to illustrate continuous variation and discontinuous variation. Evaluate the role of Watson, Crick, Chargaff, Franklin and Wilkins in the discovery of the structure of DNA. Make predictions about how changes in factors will affect survival. Evaluate the contribution made to our understanding of evolution by Charles Darwin and Lamarck.

Term 1b 9D Biology transition to GCSE	State different ways in which diseases may be caused. State the function of the nervous system and recall some hormones. Identify effects and side effects of some drugs. Identify the apparatus used for measuring distribution and abundance. Define the meaning of: osmosis.	Identify ways in which different diseases are spread. Describe the functions of the human nervous system and where hormones are produced. Describe the steps taken when a new drug is tested Describe how changes in a physical environmental factor affect the distribution of organisms. Explain how osmosis occurs.	Explain how viruses cause disease by taking over cell function. Use a model to explain how information is transmitted around the body Explain the importance of using placebos in drug testing. Use data to estimate population size. Identify and explain changes in cells due to osmosis.	Compare the structures of different microorganisms Compare and contrast different systems for transferring information around the body. Evaluate the use of double-blind trials and placebos in drug testing. Predict how changes in physical factors affect population size Use surface area:volume ratio calculations to explain certain features of organisms.
Term 2a Key concepts in biology	Recall the parts of a microscope. Identify the parts of plant and animal cells	Calculate total magnification. Make drawings of plant and animal cells and identify their parts.	Recall what is meant by resolution. Describe the function of sub-cellular structures	Explain why some cell structures can be seen easily with an electron microscope but not a light microscope. Estimate size using scale bars

Term 2b Key concepts in biology	Recall some examples of specialised cells Identify a bacterial cell	Know the function of a gamete Describe the function of common parts of bacteria	Describe how specialised cells are adapted to their function Describe why bacteria are classified as prokaryotic	Draw conclusions about a cells function from its adaptations Change numbers to and from standard form
Term 3a Key concepts in biology	State that enzymes are proteins. State what enzyme specificity means Explain what is meant by the term optimum	Describe enzymes as biological catalysts State that an enzymes action is due to its active site Describe the effect of temperature on enzyme activity	Give examples of enzymes and where they are found in the human body Describe the role of the active site in enzyme function Describe the effect of pH on enzyme activity	Recall the subunits from which carbohydrates, proteins and lipids are formed. Use the lock and key model to develop explanations of enzyme activity Describe the effect of substrate concentration on enzyme activity
Term 3b Key concepts in biology	State that substances can be transported by diffusion	Describe how substances are transported by osmosis	Explain how substances are transported by active transport (including the need for energy)	Calculate percentage gain and loss of mass in osmosis