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|  | **Science – Biology**  **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 7** | | | | |
| **Learning Focus** | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5** |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Classification and Cells** | I can state that cells are the fundamental unit "building block" of organisms (8)  I can name some equipment that may be used to observe cells (6,7)  I can list some tissues and organs (11)  I can name the main Kingdoms of living things (1)  I can state that different acids and alkalis may have different strengths (2)  I can state colours on the pH scale (4) | I can list the main parts of cells (cell wall, cell membrane, nucleus, vacuole, mitochondria and chloroplasts) and identify them from a diagram (8)  I can accurately draw parts of cells when viewing them under a light microscope (6,7)  I can describe a tissue, an organ and an organ system and describe how multicellular organisms are organised (11)  I can name an example of a unicellular organism (5)  I can use keys to classify organisms (2,3,4)  I can describe the main groups of plants, Invertebrates and Vertebrates.  I can state the purpose of an indicator and describe how Universal indicator is used to find the strength of an acid or alkali using the pH scale (3) | I can describe the functions of the main parts of cells, including the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts (8)  I can describe the structural adaptations of some animal and plant cells (9)  I can describe the difference between a unicellular and a multicellular organism (10)  I can identify some structures of amoeba and euglena (10)  I can explain the differences between groups and use these ideas to produce my own keys (5)  I can describe neutralisation and the reaction of metals and acids, as examples of chemical reactions (6)  I can identify the ions responsible for acidity and alkalinity (10)  I can identify strengths and weaknesses of different substances on the pH scale using different indicators (4) | I can compare and contrast animal and plant cells (6,7)  I can identify the structural adaptations of some unicellular organisms (10)  I can organise individuals into their groups applying knowledge to new organisms (1,3,4,5)  I can identify a salt from a word equation (11)  I can select the appropriate indicator to use when testing particular strength Acids and Alkalis (5) | I can explain the structure and function of euglena (10)  I can explain the process that occurs in chloroplasts (8,9)  I can develop Keys to enable classification of more complex and unusual organisms (5) |
| I can write word equations for the reactions of acids with bases, alkalis, metals and carbonates (11) |

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| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Life** | I can name and describe the functions of some tissues and organs in the human reproductive systems (5)  I can state what is meant by fertilisation (5)  I can state how long pregnancy lasts (7)  I can state a simple definition of the menstrual cycle (11)  I can name the parts of a flower (1)  I can state what is meant by pollination (2)  I can describe the methods of seed and fruit dispersal (3) | I can describe fertilisation (5)  I describe the main structures in the male and female reproductive systems (5)  I can name and describe the functions of some tissues and organs in the reproductive systems of plants (1) | I can explain how gametes are involved in fertilisation (5)  I can describe the function of the main structures in the male and female reproductive systems (5)  I can describe the stages of pregnancy and birth (6,7,8)  I can describe the main stages in the menstrual cycle (11)  I can describe the process of pollination (2)    I can describe the process of fertilisation in plants (12) | I can explain the sequence of fertilisation and implantation (5,7)  I can describe accurately the sequence of events during gestation (8) | I can explain how the different parts of the male and female reproductive system work together to achieve certain functions (5)  I can explain in detail how contractions bring about birth (8)  I can evaluate some methods used to resolve infertility problems (12)  I can make links between the menstrual cycle, fertilisation and infertility problems.  I can discuss the impact of menstrual lifestyle on the foetus (10,12)  I can discuss the importance of insect pollination and plant reproduction, with reference to human food security (2)  I can explain the processes of wind and insect pollination comparing the similarities and differences between the two (2) |

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|  | **Science – Biology**  **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 8** | | | | |
| **Learning Focus** | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5** |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Body Systems 2** | I can list some nutrients (4,15)  I can name some tissues and organs in the human gas exchange system and label a simple diagram of the human gas exchange system (1)  I can state that organisms release energy from carbohydrates by respiration (3) | I can outline the process of digesting food (6,8)  I can describe the impact of exercise, asthma and smoking on the human gas exchange system (1) | I can explain the consequences of imbalances in the diet (obesity, starvation and deficiency related diseases) (3)  I can calculate and compare energy values of different foods in kJ (using food labels) (3)  I can name and describe the functions of some tissues and organs in the human digestive system (6,8)  I can state what happens to the air, ribs and diaphragm during breathing and describe changes in lung volume (1) | I can make calculations of energy requirements in a healthy daily diet (4,5)  I can explain how digestion happens, with reference to enzymes (6,7)  I can summarise the reactants and products of aerobic and anaerobic respiration using word equations (2)  I can compare and contrast aerobic and anaerobic respiration (2)    I can describe some applications of aerobic and anaerobic respiration (2) | I can link adaptations of different parts of the digestive system to their functions (6,7)  I can evaluate the implications of aerobic and anaerobic respiration for organisms based on the reactants and products (2,3)  I can explain how ventilation occurs with reference to pressure changes and measuring lung volume (1,2)  I can interpret data about and evaluate the impact of exercise, asthma and smoking on the human gas exchange system (1,2) |

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|  | **Science – Biology**  **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 8** | | | | |
| **Learning Focus** | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5** |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Environment 2** | I can state that all organisms in an ecosystem may affect each other and are affected by their environment (3,6)  I can construct and interpret simple food chains (7)  I can identify variation between organisms of the same and different types (4)  I can sample habitats for plant species and invertebrates (1,2,3) | I can describe how a change in the numbers of one organism may affect another (7)  I can list some physical environmental factors in an environment (6)  I can use food webs to write food chains (7)  I can explain how to use a quadrat and how to dig a pitfall trap (1,2) | I can use food chains to make food webs (7)  I can identify predators, prey, consumers, producers, herbivores and carnivores from a food chain (7) | I can describe and explain how organisms may be affected by their environment, with reference to adaptations (3,6)  I can explain how a change in the numbers of one organism may affect another, with reference to competition and predation (5,7)  I can explain how adaptations increase the chances of survival for organisms (6)  I can describe the role of variation in natural selection (5)  I can explain the causes and effects of extinction (11) | I can evaluate the impact of humans on other organisms, with reference to the accumulation of toxic materials (9)  I can evaluate the effect of humans on the Atmosphere (10)  I can explain how energy is lost in food chains (7,8)  I can interpret and draw pyramid of numbers and a pyramid of biomass (8)  I can explain the effects of some persistent pesticides on top predators (9)  I can describe the purpose of gene banks (12) |

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|  | **Science – Biology**  **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 8** | | | | |
| **Learning Focus** | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5** |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Microbes** | I can name types of microbes, describe their basic structure and place in order of size (1)  I can state some uses of microbes (2)  I can name some diseases caused by microbes and the pathogens that cause them (5)  I can suggest simple ways to stop spread of disease (5) | I can describe mechanisms for the spread of disease (5)  I can identify some of the body’s defences (6)  I can describe the action of white blood cells (6)  I can describe how microbes can make us ill (5) | I can discuss the benefits of bacteria in the human digestive system (3)  I can explain how we have used our knowledge of white blood cells to produce vaccinations (5)  I can explain how our ideas of disease have changed over time and the work completed by famous Microbiologist that have led to these changes (7) | I can explain how Vaccination can prevent the spread of disease and Herd Immunity (6)  I can explain the different forms of Immunity (6)  I can explain specificity of vaccination using knowledge of antigens and antibodies (6) | I can evaluate the use of viruses in medicine (2)  I can interpret how microbes effect the composition of the atmosphere through Photosynthesis, decomposition and respiration (4) |

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| **Biology**  **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 9** | | | | | |
| **Learning Focus** | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5** |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| **Genetics** | I can describe specialised cells and link their adaptations to their function (1)  I can describe how organisms are organised (1,2)  I can describe the types of variation seen in organisms (5) | I can explain that variation can be caused by Inherited or Environmental factors or a mixture of both (5)  I can explain the process of development that leads to a new organism (3,4)  I can identify variation as continuous and discontinuous (6)  I can define DNA and suggest its’ importance in variation (7) | I can explain how Inherited Variation occurs and relate to DNA (5)  I can explain the difference between Natural and Artificial Selection (and between cross and Selective breeding) (9)  I can present discontinuous and Continuous Variation appropriately (6) | I can correctly apply the terms Dominant and Recessive to inheritance (8)  I can use Punnet squares to predict outcomes of crosses (8)  I can apply ideas to suggest how to produce specific individuals through selective and or cross breeding (9)  I can apply ideas about Asexual reproduction to explain Cloning methods (10) | I can compose Punnet Squares to speculate on possible outcomes of crosses (8)  I can evaluate the practices of cloning (10)  I can describe the work of Watson, Crick and Franklin in the discovery of the structure of DNA (7) |

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| **Biology**  **KEY STAGE THREE ASSESSMENT FRAMEWORK, YEAR 9** | | | | | |
| **Learning Focus** | **Milestone 1** | **Milestone 2** | **Milestone 3** | **Milestone 4** | **Milestone 5** |
| **Emerging** | **Developing** | **Securing** | **Mastering** | **Beyond** |
| Photosynthesis | I can state that all Food Webs start with the Sun (1)  I can identify plant organs and tissues (2)  I can test food and leaves for Starch (3)  I can correctly use the terms; Producer, Consumer, Carnivore, Herbivore, Trophic level, Omnivore (11)  I can link food chains to produce a food web (11) | I can describe functions of plant organs and tissues (2)  I can explain how green plants use the sun to photosynthesize (1,3,4,5,)  I can write a method for Starch testing (3,4)  I can state the conditions necessary for Photosynthesis (3,4)  I can draw pyramids of biomass (11,12) | Explain how plant cells are adapted for their function (1,2)  I can draw pyramids of numbers and Biomass and interpret them to explain the effects of changes in the environment (11)  I can recall reactants and products of Photosynthesis (3,4,5)  I can explain the role of guard cells in limiting water loss (2)  I can explain why various steps of Starch testing have to be completed (3,4)  I can plan to investigate which factors that affect the rate of photosynthesis (7,8,9) | I can compare and contrast Photosynthesis and respiration in plants (10)  I can write a word equation for Photosynthesis (3,4)  I can interpret results from Starch testing experiments (3,4)  I can explain why other minerals/nutrients are required for healthy plant growth (6)  I can explain factors that affect photosynthesis (3,4)  I can apply knowledge to explain energy loss from Food Webs(11,12) | I can write a balanced symbol equation for Photosynthesis (3,4)  Generate ideas to explain why Green plants are green in relation to their energy source (4)  I can describe and explain how humans impact upon food chains (12) |