## Year 8 Department: Science Unit of Work: – Food, nutrition, plants and their reproduction.

| Projection Grades (end of year 11) 1-3 | Projection Grades (end of year 11) 4-6 | Projection Grades (end of year 11) 7-9 |
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| ❑ Correctly use the term: diet and recall what is meant by a balanced diet.<br>❑ Recall why we need food (energy, growth and repair, health).<br>❑ State what is shown on food labelling and Interpret nutrition information<br>❑ Recall some good sources of carbohydrates, fats, proteins and fibre.<br>❑ Recall that if a person's energy intake is different from the amount of energy that they need, their mass will change.<br>❑ Calculate energy requirements for daily needs and activities.<br>❑ Describe the general uses of carbohydrates, fats (lipids), proteins, vitamins and minerals by the body.<br>❑ Explain the benefits of a balanced diet and correctly use the term: malnutrition.<br>❑ Explain how deficiency diseases are caused and describe the factors that may lead to obesity.<br>❑ Identify and recall the main parts of the human digestive system and describe the functions of the organs in the human digestive system.<br>❑ Describe the role of enzymes as catalysts in digestion.<br>❑ Recall some benefits and drawbacks of bacteria in the digestive system.<br>❑ Recall what happens in respiration<br>❑ Recall where digested food enters the blood and the function of blood plasma.<br>❑ Explain how diffusion occurs in terms of movement of particles.<br>❑ Explain the short- and long-term effects of alcohol.<br>❑ Describe the key characteristics of the five kingdoms of organisms and use this to assign organisms to their kingdoms.<br>❑ Correctly use the term biodiversity.<br>❑ Explain how organisms are classified, using smaller and smaller groupings of shared characteristics.<br>❑ Correctly use the terms asexual reproduction and sexual reproduction.<br>❑ Recall ways in which plants reproduce asexually.<br>❑ Identify and give examples of inherited variation.<br>❑ Describe how the fusing of gametes (sex cells) and their nuclei during fertilisation form a fertilised egg cell.<br>❑ Correctly use the terms species, hybrid and pollination.<br>❑ Identify the main structures and functions in a flower and identify those that are male and those that are female.<br>❑ Use flower structure and pollen shape to identify wind-pollinated and insect-pollinated flowers.<br>❑ Identify different structures within a seed.<br>❑ Identify different kinds of fruits and describe how they disperse seeds.<br>❑ Describe the events that occur after pollination leading to fertilisation.<br>❑ Describe how a fertilised egg cell grows into an embryo.<br>❑ Describe a plant's life cycle using a diagram.<br>❑ Recall the resources needed for germination.<br>❑ Describe what happens in photosynthesis. | ❑ Describe the uses of fibre and water by the body.<br>❑ Describe tests for fat and starch.<br>❑ Interpret results from simple food tests (e.g. fat, starch, protein, vitamin C).<br>❑ Describe the relationships between diet, exercise, age, sex and energy.<br>❑ Explain why body mass changes if energy input into the body does not match energy output.<br>❑ Recall sources of some individual vitamins and mineral salts (e.g. vitamin A, vitamin C, calcium, iron).<br>❑ Describe the effects of obesity on health.<br>❑ Use dietary advice and nutrition information to design a healthy diet.<br>❑ Interpret Reference Intake (RI) information.<br>❑ Recall and identify examples of deficiency diseases (kwashiorkor, scurvy, rickets).<br>❑ Explain the links between specific forms of malnutrition, diet and lifestyle.<br>❑ Describe what happens during ingestion, absorption and egestion.<br>❑ Explain how food is moved through the digestive system.<br>❑ Use a model to describe basic enzyme action.<br>❑ Explain how the structure of the small intestine allows efficient absorption of the soluble products of digestion.<br>❑ Explain how the cells in the small intestine are adapted to absorb nutrients quickly.<br>❑ Use a knowledge of diffusion to explain how nutrients enter the blood from the small intestine.<br>❑ Identify the genus and species names from a binomial name.<br>❑ Explain why preserving biodiversity is important (useful products, organism interactions, enriches our lives, disaster recovery).<br>❑ Explain how inherited variation is caused (does not include genes).<br>❑ Explain the difference in outcomes of asexual and sexual reproduction in plants.<br>❑ Identify pollen grains and ovules as containing the male and female gametes.<br>❑ Describe how the structures of a flower are adapted to their functions.<br>❑ Describe how plants avoid self-pollination.<br>❑ Explain why plants try to avoid self-pollination.<br>❑ Explain how some pollen grains are adapted to their functions.<br>❑ Explain the functions of the different parts of a seed and the importance of seed dispersal.<br>❑ Explain the need for the different resources by a seed as it germinates.<br>❑ Explain the importance of pollination for the production of foods.<br>❑ Describe examples of interdependence and explain how changes in a population or community in an ecosystem affect other populations.<br>❑ Explain how and why some seeds are prevented from germinating until a certain time. | ❑ Interpret results from food tests for reducing and non-reducing sugars (glucose and sucrose).<br>❑ Describe the roles of vitamin A, vitamin C, calcium and iron in the body.<br>❑ Describe the causes and control of Type 2 diabetes.<br>❑ Evaluate different models of basic enzyme action.<br>❑ Explain how bile helps in the digestion of lipids.<br>❑ Use simple calculations (e.g. biodiversity index) to compare biodiversity.<br>❑ Evaluate the advantages and disadvantages of sexual and asexual reproduction in plants in different conditions.<br>❑ Evaluate different methods of pollination.<br>❑ Evaluate different methods of seed dispersal.<br>❑ Describe the importance of hybridisation in plant breeding.<br>❑ Explain the production of seedless fruits using hybridisation.<br>❑ Explain the importance of light/darkness for some seeds and their germination. |