	Year 8 Biology– Environment **You must been able to complete /understand all the previous pathway information to reach your pathway**
7-9	Evaluate food chains and food webs as models of feeding relationships. Use a random number generator to acquire random coordinates for sampling. Use the idea of equilibria to explain starch production. Explain why phosphates and potassium are important nutrients for plants. Describe what can affect the rate of photosynthesis.
6-8	Compare models of energy transfer in food chains and webs. State the balanced chemical equations for Photosynthesis and Respiration. Select the appropriate sampling method. Explain the importance of nitrates to plants. Describe the synthesis of starch and proteins in plants. Recall some functions of different proteins.
5-7	State the chemical equations for Photosynthesis and respiration. Estimating population sizes from data. Use food webs to predict the effects of changes in populations. Explain the effects of some persistent pesticides on ecosystems. Be able to explain why specialized plant cells can do their job properly.
4-6	Describe the differences between nutrition in animals and plants. Describe how organisms are interdependent in ecosystems. State the word equations for Photosynthesis and Respiration. Use food chains to create food webs and identify food chains within food webs. Describe how the distribution of organisms is controlled by the availability of resources. Explain the gains and losses of energy from living organisms.
3-5	State different methods of sampling organisms. Calculate the area of a simple quadrilateral. Define feeding relationships in terms of energy flow. Describe what happens in photosynthesis. Recall that plants use glucose produced by photosynthesis to make new substances, often using mineral salts. Explain how roots and leaves are adapted for their jobs.
2-4	State that plants use Photosynthesis to make food. Tell the difference between and identify examples of continuous and discontinuous variation. Identify the physical environmental factors that make up the environment in a habitat. Label the stem, root and leaves of a plant. Be able to draw and label some parts of a plant cell.
1-3	Describe the test for starch. Describe how starch is used as a food storage material. Be able to draw simple food chains and identify producer & consumer. Describe some simple food chains. Know what is meant by; predator and prey. Recall that plants need water, light and air to grow.

	Year 8 Biology Module – Health **You must been able to complete /understand all the previous pathway information to reach your pathway**
7-9	Explain how variables affect the rate of enzyme controlled reactions. Evaluate different models of basic enzyme action. Explain how and why a concentration gradient is maintained for oxygen and carbon dioxide between the blood and lungs. Analyse and explain the changes in heartbeat and breathing rate during and after exercise.
6-8	Interpret results from food tests for reducing and non-reducing sugars. Explain the links between specific forms of malnutrition, diet and lifestyle. Use a pressure model to explain ventilation. Use the key characteristics of microorganism cell structure to classify microorganisms. Explain why multicellular organisms need efficient transport systems.
5-7	Describe the functions of enzymes, and their role in the digestive system. Differentiate between breathing and respiration. Interpret results from simple food tests. Recall some benefits and drawbacks of bacteria in the digestive system. Explain how food is moved through the digestive system. Use a model to describe basic enzyme action. Explain how the structure of the small intestine allows efficient absorption of the soluble products of digestion.
4-6	Explain the benefits of a balanced diet and correctly use the term: malnutrition. Explain how deficiency diseases are caused. Describe the effects of obesity on health. Describe the functions of the organs in the human digestive system. Use a knowledge of diffusion to explain how nutrients enter the blood from the small intestine. Explain how the lungs are adapted for efficient gas exchange.
3-5	Identify different organ systems in both plants and animals and describe their roles. Describe the uses of fibre and water by the body. Describe tests for fat and starch. Describe the factors that may lead to obesity. Recall and identify examples of deficiency diseases. Explain why digestion is necessary. Describe the functions of the organs in the human gaseous exchange system and what happens during gas exchange. Describe how muscles attached to ribs and the diaphragm produce breathing movements and use a model to explain how lungs expand and contract. Describe how breathing rate and heart rate are affected by exercise.
2-4	State that organ systems are groups of organs working together for a common role. Describe the functions of the organs in the human digestive system. Correctly use the terms: breathing, breathing rate, ventilation, inhalation, exhalation. Describe the structure of the lungs.
1-3	State that living organisms have different organs. Correctly use the term: diet. Recall why we need food. Recall the names of the nutrients in food. Identify and recall the main parts of the human digestive system. Recall where digested food enters the blood.