AQA GCSE Combined Science: Trilogy Topic Checklists **4.2 Organisation**

4.2.1 Principles of Organisation				
Topic	**Success Criteria**	**Progress**		
Principles of Organisation	I can explain the differences between cells, tissues, organs and organ systems.			

4.2.2 Animal Tissues, Organs and Organ Systems				
Topic	**Success Criteria**	**Progress**		
The Human Digestive System	I can describe how the organs of the digestive system work together to digest and absorb food.			
	I can describe how to test for sugars, starch, proteins and lipids using qualitative reagents, including the expected results (required practical activity 3).			
	I can describe the role of enzymes in digestion.			
	I can describe how enzyme activity is affected by temperature and pH changes.			
	I can carry out rate calculations for chemical reactions.			
	I can explain enzyme action using the 'lock and key theory', including the specificity of the active site.			
	I can recall the sites of production and the action of amylase, proteases and lipases.			
	I can give the reactants and products of the reactions catalysed by carbohydrases (including amylase), proteases and lipases.			
	I can describe a method to investigate the effect of pH on the rate of reaction of amylase enzyme (required practical activity 4).			
	I can explain what the products of digestion are used for in the body.			
	I can give the sites of production and storage of bile.			
	I can describe the function of bile and explain why it is alkaline.			

Topic	Success Criteria	Progress		
The Heart and Blood Vessels	I can name and identify the main structures associated with the lungs.			
	I can explain how the lungs are adapted for gaseous exchange.			
	I can name and identify the four chambers of the heart.			
	I can explain the role of the heart in a double circulatory system.			
	I can name and identify the main blood vessels associated with the heart.			
	I can explain how resting heart rate is controlled.			
	I can describe the function of artificial pacemakers.			
	I can identify the three different types of blood vessel present in the body.			
	I can explain how the structure of arteries, veins and capillaries relates to their function.			
	I can use simple compound measures such as rate and carry out rate calculations for blood flow.			
Blood	I can name the four components of blood.			
	I can describe the functions of each of the components of blood.			
	I can recognise the different types of blood cells in a photograph or diagram.			
	I can explain how the different types of blood cells are adapted to their functions.			
	I can evaluate the risks related to the use of blood products.			

Topic	Success Criteria	Progress		
Coronary Heart Disease: A Non-Communicable Disease	I can describe what happens to the coronary arteries in coronary heart disease and explain how this affects the heart muscle.			
	I can describe how stents are used to treat coronary heart disease.			
	I can describe how statins are used to treat coronary heart disease.			
	I can describe how heart valves may become faulty and explain the consequences of faulty heart valves.			
	I can describe how faulty heart valves can be replaced using biological or mechanical valves.			
	I can describe how a donor heart, or heart and lungs can be transplanted in the case of heart failure.			
	I can explain when an artificial heart might be used.			
	I can evaluate the advantages and disadvantages of treating cardiovascular diseases by drugs (statins), mechanical devices (stents) or transplant.			
Health Issues	I can give a definition for the term 'health'.			
	I can give some factors that contribute to ill physical and mental health.			
	I can describe how different types of diseases may interact.			
	I can construct and interpret frequency tables and diagrams, bar charts and histograms, and use a scatter diagram to identify a correlation between two variables.			

Topic	Success Criteria	Progress		
The Effect of Lifestyle on Some Non-Communicable Diseases	I can discuss the human and financial cost of some non-communicable diseases to an individual, a local community, a nation or globally.			
	I can give some examples of risk factors that are linked to an increased rate of a disease.			
	I can explain the effect of lifestyle factors including diet, alcohol and smoking on the incidence of non-communicable diseases at local, national and global levels.			
	I can explain that many diseases are caused by the interaction of a number of factors.			
	I can extract and interpret information from charts, graphs and tables, and use a scatter diagram to identify a correlation between two variables in terms of risk factors.			
Cancer	I can give a definition for the term 'cancer'.			
	I can explain the difference between benign and malignant tumours.			
	I can give some lifestyle and genetic risk factors for various types of cancer.			

4.2.3 Plant Tissues, Organs and Systems				
Topic	**Success Criteria**	**Progress**		
Plant Tissues	I can name and identify the main tissues present in plants.			
	I can explain how the structures of plant tissues are related to their functions.			
	I can describe the structure of a leaf.			
Plant Organ System	I can name the parts of a plant that form an organ system for the transport of substances around the plant.			
	I can explain how the structure of root hair cells is adapted for the efficient uptake of water by osmosis, and mineral ions by active transport.			
	I can describe the role of xylem tissue in plants.			
	I can explain how the structure of xylem tissue is adapted for the transport of water in the transpiration stream.			
	I can describe the role of stomata and guard cells in leaves.			
	I can explain the effect of the following factors on the rate of transpiration: • temperature; • humidity; • air movement; • light intensity.			
	I can describe the role of phloem tissue in plants.			
	I can explain how the structure of phloem tissue is adapted for the transport of sugars by translocation.			