Science 1.11 AS 90950 Investigate biological ideas relating to interactions between humans and micro-organisms

Analysing Exemplars – Virus H1N1

Success Criteria: For each sentence identify main concept and what life process it relates to

Viral pathogens work by taking over cells and getting them to carry out viral cell replication rather than carrying out the processes they were designed to do. An example of this is “the flu”. The true flu, of which H1N1 is an example, is breathed into the lungs and throat of a person. If the immune system does not instantly destroy it then the flu can enter the cell of the linings of the lungs and throat and take over the lung lining cells and force them to make multiple copies of the H1N1 virus. When the copying is complete the cells burst and induce an attack of coughing in the person so as the viral components are expelled at about 100kmhr-1. (2) The virus stops the cells taking oxygen to the blood as they now are manufacturing viral cells. If too many cells are compromised then the lungs break down and death can result. This is why “flu” viral diseases are dangerous. Antibiotics do not work on viruses. Doctors try to keep you alive until your immune system forms a antibody and then can destroy the flu virus. (1) Countries combat flu attacks by producing vaccination programmes and make these vaccinations available to people at risk including those with asthma and other lung diseases. The flu vaccination is passive vaccination so needs to be produced yearly. (3)	

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Analysing Exemplars – Bacteria Salmonela

Success Criteria: For each sentence identify main concept and what life process it relates to

Bacterial pathogens are microscopic single celled prokaryote organisms that can cause disease in humans. Not all bacteria cause disease and most bacteria are useful to humans. The harmful one can kill us. Salmonella is a bacterium that can cause food poisoning in humans. It comes from contaminated food, (2) especially chicken. When the bacterium is eaten it travels through the stomach and lodges in the intestine. Here it attaches to the intestine wall and uses our wastes as its food supply. In carrying out its living processes it excretes wastes into our intestine. These wastes are a neurotoxin to humans and stop our intestine functioning correctly. The large intestine cannot absorb water correctly and so we suffer diarrhoea This then causes us to lose fluids and for some people the fluid loss can lead to thickening of the blood and death. Bacteria can be treated with antibiotics. (1) One of the simplest ways to treat salmonella is to stop contamination of the bacteria. This can be done by covering food and storing in the fridge and especially by washing hands before a meal and after using the toilet. (3)