GCSE AQA Combined Science: Synergy

4.3.3.1 Spread of communicable diseases	Disease can spread: • Through the air when people cough or sneeze • Through food that is contaminated with bacteria • Through drinking water that is contaminated with microorganisms • Through contact with other people, or surfaces that infected people have touched • By animals that scratch, bite or draw blood.
4.3.3.2 Human communicable diseases	Salmonella food poisoning is spread by bacteria ingested in food, or on food prepared in unhygienic conditions. Fever, abdominal cramps, vomiting and diarrhoea are caused by the bacteria and the toxins they secrete. Salmonella bacteria are killed by cooking and pasteurisation. In the UK, poultry are vaccinated against Salmonella to control the spread.
4.3.3.3 Defences against pathogens	The human body defends itself against the entry of pathogens in the following ways: • The skin is a barrier and produces antimicrobial secretions • The nose catches particles • The trachea and bronchi secrete mucus that is moved by cilia • The stomach produces acid, which kills the majority of pathogens that enter via the mouth.
4.3.3.4 The human immune system	If a pathogen enters the body the immune system tries to destroy the pathogen. White blood cells are an important part of the immune system. They help to defend against pathogens through: • phagocytosis • producing antibodies • producing antitoxins.
4.3.3.5 Vaccination	If a large proportion of the population is immune to a pathogen, the spread of the pathogen is very much reduced.
4.3.3.6 Medicines	Antibiotics, such as penicillin, are medicines that help to cure bacterial disease by killing infective bacteria inside the body. It is important that specific bacteria should be treated by specific antibiotics. The use of antibiotics has greatly reduced deaths from infectious bacterial diseases. However, the emergence of strains of bacteria resistant to antibiotics is becoming a serious threat. Antibiotics cannot kill viral pathogens.