Science KS3 – Programme of Study			
PRIOR LEARNING (KEY STAGE 3)			
Cells and organisation	**The particulate nature of matter**	**Nutrition and digestion**	**Health**
Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.	Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Demonstrate that dissolving, mixing and changes of state are reversible changes.	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
Scientific Skills: • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where data and results of increasing complexity using scientific diagrams and labels, classification keys, necessary • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Recording tables, scatter graphs, bar and line graphs • Using test results to make predictions to set up further comparative and fair tests • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations • Identifying scientific evidence that has been used to support or refute ideas or arguments			
KEY STAGE 3			

Cells and organisation	The particulate nature of matter	Nutrition and digestion	Health
To know that cells are the fundamental unit of living To know how to observe, interpret and record cell structure using a light microscope To be able to label a cell diagram and describe the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts To be able to list the similarities and differences between plant and animal cells To be able to describe the structural adaptations of some unicellular organisms	To know the 3 states of matter and be able to describe the properties of each state (solid, liquid and gas) using the particle model, including gas pressure. To be able to explain changes of state in terms of the particle model	To know the contents of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed. To know about the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. To be able to calculate energy requirements in a healthy diet. To know how the digestive system digests food To know the tissues and organs of the human digestive system, including adaptations to function.	Understand the effects of recreational drugs (including substance misuse) on behaviour, health and life processes *Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.*

To be able to describe the organisation of multicellular organisms: from cells to tissues to organs to systems to organisms	**Chemical reactions** To be able to define acids and alkalis in terms of neutralisation reactions To know about the pH scale for measuring acidity/alkalinity; and indicators To know that reactions of acids with metals produce a salt plus hydrogen To know that reactions of acids with alkalis produce a salt plus water	To be able to describe the role of enzymes as biological catalysts. To be able to explain the importance of bacteria in the human digestive system	

Scientific Skills (throughout each unit of study):

Scientific Attitudes:

- Understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review

Experimental Skills and Investigations:

- Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience

Analysis and Evaluation:

- Interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
- Present reasoned explanations, including explaining data in relation to predictions and hypotheses