

Investigative work - Design and carry out practical investigations safely, record data in a variety of formats, form detailed conclusions using scientific ideas and evaluate work to suggest improvements and further work which can be undertaken.

BIOLOGY	CHEMISTRY	PHYSICS
<p><u>Cells, tissues, organs and systems</u></p> <p>Discuss the function of plant and animal cells and explain the relationship between different tissues, organs and organ systems to evaluate how humans function.</p> <p><u>Sexual reproduction in animals</u></p> <p>Evaluate the role of human sex cells and the male and female reproductive systems.</p> <p>Explain the processes of menstruation, ovulation and gestation to evaluate how humans function.</p> <p><u>Muscles and bones</u></p> <p>Explain the role and function of the skeletal muscular system, to evaluate how the body is controlled.</p> <p>Explain how the short and long-term use of drugs can affect health.</p> <p><u>Ecosystems</u></p> <p>Evaluate how the key features of an ecosystem interact with each other in order to survive.</p>	<p><u>Mixtures and separation</u></p> <p>Discuss the processes of dissolving, filtration, chromatography and distillation using scientific ideas about particles.</p> <p><u>Atoms, elements and molecules</u></p> <p>Discuss the differences between pure and impure substances using scientific ideas about particles.</p> <p>Compare metallic and non-metallic elements, compounds and describe the structure of different atoms.</p> <p><u>The particle model</u></p> <p>Compare and contrast the properties of solids, liquids and gases and use particle models to explain changes of state between matter.</p> <p><u>Acids and alkalis</u></p> <p>Compare practical methods used to test and identify acids and alkalis.</p> <p>Explain the reactions which occur between acids and alkalis, metals and carbonates using scientific ideas.</p>	<p><u>Energy</u></p> <p>Discuss how different forms of energy can be transferred.</p> <p>Compare non-renewable and renewable energy resources and evaluate how different power stations generate electricity.</p> <p><u>Sound</u></p> <p>Discuss how different types of sound are made using scientific ideas about waves and particles and analyse wave diagrams.</p> <p>Discuss how the human ear works and compare and contrast the differences between sound waves.</p> <p><u>Forces</u></p> <p>Compare and contrast the effects of different contact and non-contact forces and discuss how balanced and unbalanced forces can affect different objects and their motion.</p> <p><u>Current electricity</u></p> <p>Discuss the function of a variety of components in electrical circuits and build complex circuits safely using diagrams.</p> <p>Explain how electricity flows around a circuit.</p>

Investigative work - Explain how to change and control variables in an investigation, carry out practical work safely, record data accurately in tables and graphs, form conclusions using scientific ideas and evaluate work to suggest improvements.

BIOLOGY**Cells, tissues, organs and systems**

Explain the function of a plant cell, and an animal cell and explain the relationship between different tissues, organs and organ systems.

Sexual reproduction in animals

Explain the function of human sex cells and the features of male and female reproductive systems.

Explain the processes of menstruation, ovulation and gestation.

Muscles and bones

Explain the function of the skeleton and explain how muscles control movement, breathing and the action of the heart.

Ecosystems

Explain how the key features of an ecosystem interact with each other in order to survive.

CHEMISTRY**Mixtures and separation**

Explain the processes of dissolving, filtration, chromatography and distillation.

Atoms, elements and molecules

Explain the difference between pure and impure substances.

Explain the differences between metallic and non-metallic elements, compounds and describe the structure of different atoms.

The particle model

Explain how materials form solids, liquids and gases and explain changes of state between matter using ideas about particles.

Acids and alkalis

Explain how acids and alkalis can be tested using different practical methods.

Explain what happens during simple chemical reactions between acids and alkalis, metals and carbonates.

PHYSICS**Energy**

Explain how energy can be transferred, how non-renewable and renewable energy resources are produced and how power stations use energy resources to generate electricity.

Sound

Explain how different types of sound are made and draw labelled wave diagrams showing an understanding of waves.

Explain the function of the key parts of a human ear which enable us to hear and explain the differences between sounds.

Forces

Explain the effect of different contact and non-contact forces and explain how balanced and unbalanced forces can affect different objects and their motion.

Current electricity

Explain the function of components in electrical circuits and use diagrams to build simple circuits safely, showing an understanding of how electricity flows around a circuit.

Investigative work - Describe variables in an investigation, carry out practical work safely, record data in tables and graphs, form conclusions and evaluate work.

BIOLOGY**Cells, tissues, organs and systems**

Describe the parts of plant cell and an animal cell and describe examples of different tissues, organs and organ systems.

Sexual reproduction in animals

Describe the function of human sex cells and the male and female reproductive systems.

Describe the processes of menstruation, ovulation and gestation.

Muscles and bones

Describe the function of the key parts of the skeleton and describe how muscles control movement, breathing and the action of the heart.

Describe how different drugs affect how the body works and their effect on the nervous system.

Ecosystems

Describe the key features of an ecosystem and how they interact with each other in order to survive.

CHEMISTRY**Mixtures and separation.**

Describe the processes of dissolving, filtration chromatography and distillation.

Atoms, elements and molecules.

Describe the differences between pure and impure substances.

Describe metallic and non-metallic elements, simple compounds and describe the simple structure of atoms.

The particle model

Describe materials as solids liquids and gases and changes of state between matter.

Acids and alkalis

Describe the colour and pH changes which take place when practically testing acids and alkalis.

Describe what happens during simple chemical reactions between acids and alkalis, metals and carbonates.

PHYSICS**Energy**

Describe the different types of energy, the variety of non-renewable and renewable energy resources and how power stations are used to generate electricity.

Sound

Describe the different types of sound are made and label the key parts of a wave diagram.

Describe the function of the key parts of a human ear and describe differences between sounds.

Forces

Describe the effect of different contact and non-contact forces and describe how balanced and unbalanced forces can affect different objects and their motion.

Current electricity

Describe the different components of a simple electrical circuit and build different electrical circuits safely using diagrams.

Working scientifically - Explain how to change and control variables in an investigation, carry out practical work safely, record data accurately in tables and graphs, form conclusions using scientific ideas and evaluate work to suggest improvements.

Biology	Chemistry	Physics
<p><u>Cells, tissues, organs and systems</u></p> <p>Identify and begin to describe different tissues, organs and organ systems and the key parts of a plant cell and an animal cell.</p> <p><u>Sexual reproduction in animals</u></p> <p>Identify and begin to describe the function of human sex cells and the male and female reproductive systems.</p> <p>Identify and begin to describe the processes of menstruation, ovulation and gestation.</p> <p><u>Muscles and Bones</u></p> <p>Name key parts of the skeleton and state how muscles control movement, breathing and the heart.</p> <p>Recall how different drugs affect how the body works.</p> <p><u>Ecosystems</u></p> <p>State the key features of an ecosystem and simply describe how they interact with each other in order to survive.</p>	<p><u>Mixtures and separation.</u></p> <p>Define key terms such as dissolving, saturated, mixture and filtration.</p> <p>Recognise the processes of chromatography, distillation and filtration.</p> <p><u>Atoms, elements and molecules</u></p> <p>Name metallic and non-metallic elements, simple compounds and identify the simple structure of atoms.</p> <p><u>The particle model</u></p> <p>Classify materials as solids liquids and gases and identify changes of state.</p> <p><u>Acids and alkalis</u></p> <p>Identify acids and alkalis using colour changes and the pH scale.</p> <p>Recall some simple chemical reactions between acids and alkalis, metals and carbonates.</p>	<p><u>Energy</u></p> <p>Identify different types of energy, non-renewable and renewable energy resources and different sorts of power stations.</p> <p><u>Sound</u></p> <p>State how different types of sound are made and name the key parts of a wave diagram.</p> <p>Identify key parts of a human ear and describe simple differences between sounds.</p> <p><u>Forces</u></p> <p>Identify the names of simple contact and non-contact forces and simply describe how balanced and unbalanced forces can affect different objects and their motion.</p> <p><u>Current electricity</u></p> <p>Identify and state the job of common circuit components and build simple electrical circuits safely.</p> <p>Name conductors and insulators.</p>