

Year 9 checklist 2023

General skills : reading scales, calculating range and average, working with negative numbers

Drawing bar graph and line graphs.

Rates of reaction

Topic	We are learning to:
Definitions	Rate of reaction; reactant ; product; precipitate
Describe and explain how factors affect the rate of a reaction	How does changing the temperature affect the rate of a reaction?
	How does concentration affect the rate of a reaction?
	How does surface area affect the rate of a reaction?
	How does adding a Catalyst affect the rate of a reaction?
Collision theory	For a chemical reaction to happen, particles must collide with each other the particles must have enough energy for them to react

On the move

Topic	We are learning to:
Speed Trap	State the equation between average Speed, distance travelled and time taken.
	Use the equation between average Speed, distance travelled and time taken to carry out calculations.
	State the units of Speed.
Journey Graphs	Interpret a Distance – time graph.
	Draw a distance – time graph from information given.
	Use information from a Distance – time Graph to calculate speed.
	Use a Distance – time graph to describe an objects journey.
Braking News	State the definition of Thinking Distance.
	State the definition of Braking Distance.
	State how to calculate the total braking distance.
	Write down how total stopping distance can be increased.
	Interpret a thinking distance/braking distance chart.

Healthy body

Topic	we are learning:
Food	Name the 7 food groups and their role in the body
	<p>Food tests –Protein Sugar Starch Fat</p> <p>Recall the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases</p> <p>Careers – know the work of a dietician</p>
Digestion	<p>Digestive system – know the main organs and their function</p> <p>chemical digestion - know the definition of an enzyme, the names of 3 digestive enzymes and their role.</p> <p>Mechanical Digestion – Know the structure of teeth Know the different types of teeth and their roles</p>
Exercise	<p>know the importance of exercise to health</p> <p>the interaction between skeleton and muscles</p> <p>the function of muscles and examples of antagonistic muscles</p> <p>the structure and functions of the human skeleton, to include support, protection, movement and making blood cells</p>
Drugs	the effects of recreational drugs (including substance misuse) on behaviour, health and life processes.

Compounds, Mixtures and Separations

Topic	At the end of this booklet you should be able to:
Elements and compound	Sort substances into elements and compounds
	Interpret chemical formulae and relate the numbers to the number of atoms involved
	Understand the idea of energy change during compound formation
	Describe the formation of iron sulfide from its elements : iron and sulfur
Chemical reactions	Describe how elements can react with the substances around them
	Explain that metals often react with the elements in the air to form compounds
	Explain that thermal decomposition means to break down a compound using heat energy
How do compounds react with each other?	Evidence for a chemical reaction has taking place
	Recognise that reactions can take place between elements or compounds
	Explain observations in terms of reacting particles
mixtures	Classify materials as elements, compounds and mixtures
	Explain that mixtures do not have a fixed composition and cannot be represented by a chemical formula
	Know that particles in a mixture are not chemically joined together
What is a pure substance?	Know that elements and compounds melt and boil at a particular temperature
	Explain how the melting and boiling points can be used to identify substances
	Know that mixtures do not melt or boil at a fixed temperature
Solutions	What a solvent is.
	What a solute is.
	What a solution is.
	What dissolving means.
	What soluble means.
	How temperature affects the solubility of a solid.
	How stirring affects the solubility of a solid.
Separating techniques	How to separate Immiscible liquids.
	How to separate miscible liquids.
	How to separate pigments.
	How to separate a soluble substance from an insoluble substance.
	How to separate pure water from salt water.
	What a Liebig Condenser is.

Gas exchange

At the end of this booklet you should be able to:
The structure and function of gas exchange system in humans
The mechanism of breathing to move air in and out of the lungs
Simple measurements of lung volume
The impact of exercise, asthma and smoking on the human gas exchange system
The role of leaf stomata in gas exchange in plants

Electricity

At the end of this booklet you should be able to:
Recall circuit symbols for common components
Investigate how the brightness of a bulb can be changed
Plan an investigation to determine whether a material is a conductor or insulator.
Define the terms conductor and insulator
Describe how a two-way switch works
Describe the difference between series & parallel circuits
Calculate current and voltage in series and parallel circuits
Explain why bulb brightness varies in series & parallel circuits
Use a model to explain current and voltage in series and parallel circuits
Design an experiment to measure current and voltage through a bulb
Describe the dangers of electricity
Explain how a plug is designed to protect users
Conduct an experiment to investigate the relationship between length of wire and resistance