

The topics in the Year 9 Science Test (2022) :

1. Solids, liquids and gases
2. On the move
3. Food and digestion
4. Atoms and elements
5. Gas exchange
6. Electricity

There are revision checklists inside each of the pupil booklets

Solids, liquids and gases

Topic	We are learning to:	😊	😐	😞
The three states of matter	Identify the three states of matter			
Solids, liquids and gases	Identify the different properties of solids, liquids and gases			
	Draw diagrams to illustrate the arrangement of particles in the three states			
	Explain what happens to the particles during a change of state			
Diffusion	Identify diffusion			
	Explain what diffusion is			

On the move

Topic	We are learning to:	😊	😐	😞
Friction	State what causes Friction.			
	State the direction in which Friction acts.			
	State the definition of Friction.			
	Draw Friction force arrows onto diagrams to show the direction of Friction.			
	Identify situations when Friction is helpful or a nuisance.			
Reducing the effects of friction	Identify ways of reducing Friction.			
	Identify ways of increasing friction.			
	Describe how a change in situation can increase the Friction.			
Balanced and Unbalanced forces	Draw arrows to represent the size and direction of forces.			
	Identify when forces are balanced and unbalanced.			
	State what happens to an object when acted on by balanced Forces.			
	State what happens to an object when acted on by unbalanced forces.			
	State Newton's First Law			
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.			

Food and digestion

Topic	We are learning to:	😊	😐	😞
Food	Know how to make a healthy food choice			
	Know the 7 nutrients necessary for good health			
Food tests	To develop practical skills and to investigate the nutrients in food			
	To recall the test for starch and the test for sugars			
	To recall the test for protein and the test for fats			
Digestive system	Know the structures and functions of the digestive system			
Enzymes	Investigate enzyme activity			
	Understand that enzymes help the digestion of food			
Energy from food	learn how to measure the energy content of food			
Food choices	Understand that people and the media can influence food choices			

Atoms and elements

Lesson	What we learned	😊	😐	😞
Matter	Matter is anything that occupies space			
	Matter is made up of building blocks called elements			
	Elements are made up of just one kind of atom			
	An atom is the smallest particle of an element.			
Air	The air contains chemical elements			
	Each element has its own characteristics or properties			
	How to make oxygen, hydrogen and carbon dioxide in the laboratory			
	Some tests that can be used to identify gases			
Atomic structure	Learn the general atomic structure of an atom			
	Recall the names and positions of three subatomic particles			
	Recall the charge of each structure			
	Know that each element has a unique atom structure			
	Define atomic number			
Periodic table	Elements can be sorted into metals and non-metals			
	Elements were first arranged into groups of eight			
	The Periodic Table was first put together by Dimitri Mendeleev			
	The Periodic table helps us to predict the properties of elements with which we are not familiar.			
	Know the properties of halogens, alkali metals & noble gases			
compounds	Compounds are formed when 2 or more elements join together			
	The smallest particle of a compound is called a molecule			
	That compounds are different than the elements they are made of			
	Compounds are represented by chemical formula			
	Chemical formula show how many of each element are present in a molecule			

Gas exchange

Topic	Respiration and Breathing	😊	😐	😞
respiration	Recall (Aerobic) Respiration word equation glucose + oxygen → carbon dioxide + water + energy			
	Understand that energy that is released during respiration may be used: <ul style="list-style-type: none"> ■ to build larger molecules from smaller ones ■ in animals, movement ■ in mammals and birds, to maintain a steady body temp 			
breathing	Compare inhaled and exhaled air			
	Identify the parts of the breathing system: <ul style="list-style-type: none"> — lungs, trachea, bronchi, bronchioles, alveoli, diaphragm, ribs and intercostal muscles 			
	Describe the mechanism of ventilation in terms of changes in volume and pressure			
	Measure lung capacity			
smoking	Describe the consequences of Smoking			
exercise	The effects of exercise on the circulatory system			
	The relationship between heart beat, breathing rate and exercise			

How does Electricity Work?

Topic	We are learning to:	😊	😐	😞
Electric Circuits	State that electrons have a negative charge and are attracted to the positive charge.			
	Describe electric circuits.			
	Recognise a complete working circuit.			
Electrical Components	Discuss the benefits of representing electrical components using symbols.			
	Draw and identify electrical components using symbols.			
Conductors and Insulators	State that conductive materials allow electricity to flow.			
	Know that insulators stop electricity flow.			
	Design and build a circuit to test if a material conducts electricity.			
	Categorise materials as conductors and insulators.			
Resistance	Describe resistance.			
	State the unit and symbol of resistance.			
	Define conductors and insulators in terms of resistance.			
	Build a dimmer switch.			
	Give examples of variable resistors in everyday life.			
Electric Current	Describe electric current as the flow of electrons.			
	Carry out a risk assessment on an electrical experiment.			
	Relate bulb brightness to current.			
Series and Parallel Circuits	Identify series and parallel circuits.			
	Describe what happens to current in series and parallel circuits.			
	Calculate the current at different places in a series and parallel circuit.			
	State the effect of removing a light bulb in each type of circuit.			