

Year 7 : Cycle 1: Science 100% sheet

Section 1: Lab equipment		Section 2: Hazard symbols	
Mass balance	Measures the mass of an object in units called grams.	Flammable	A substance sets on fire easily.
Measuring cylinder	Measures the volume of a liquid in units of ml or cm ³ .	Corrosive	A substance can destroy living tissues such as skin and eyes.
Bunsen burner	A device used to heat substances by burning natural gas.	Toxic	A substance can cause death if swallowed or breathed in.
Conical flask	A cone shaped glass container that is used to hold liquids.	Irritant	This substance can cause skin irritation.
Tripod	A three-legged stand used to hold items safely above a Bunsen burner flame.	Environmental hazard	This substance is toxic to wildlife living in water.
Section 3: Planning an investigation		Section 4: Living organisms	
Independent variable	The variable that is altered/changed during a scientific experiment.	Living Organisms	Living things that are made of cells and carry out the seven life processes.
Dependent variable	The variable being tested or measured during a scientific experiment.	Seven Life Processes	Movement, Reproduction, Sensitivity, Nutrition, Excretion, Respiration, Growth (MRS NERG).
Control variable	A variable that is kept the same during a scientific experiment to ensure a fair test.	Unicellular	Living organisms made from only one cell.
Method/Plan	Step by step instructions for an investigation.	Multicellular	Living organisms made from many cells.
Results table	Left hand column = independent variable. Right hand column = dependent variable.	Cell	Basic building block of life.
Section 5: States of matter		Section 6: Cell Organelles	
Solids	Particles very close together, regularly arranged. Particles vibrate around fixed positions. Strong forces between particles. Fixed shape and volume, cannot flow, or be compressed. High density.	Nucleus	Controls the cells activities and contains genetic information (DNA).
		Cytoplasm	Jelly-like fluid that fills the cell and is the site of chemical reactions.
Liquids	Particles close together, randomly arranged. Particles move around each other. Weak forces between particles. No fixed shape. Fixed Volume. Can flow. Cannot be compressed. Medium density.	Cell membrane	Semi-permeable boundary that controls what enters and leaves the cell.
		Mitochondria	The site of aerobic respiration.
Gases	Particles far apart, randomly arranged. Particles move at a range of speeds in all directions. Very weak forces between particles. No fixed shape or volume. Can flow and be compressed. Low density.	Chloroplast	Contains chlorophyll which absorbs light; the site of photosynthesis.
Melting and boiling point	MP = Temperature at which a substance melts when heated or freezes when cooled. (MP of ice = 0 °C). BP = Temperature at which a substance boils when heated or condenses when cooled. (BP of water = 100°C)		

Section 7: Solutions		Section 8: Specialised Cells	
Solution	A mixture formed when a solute dissolves in a solvent.	Sperm cell	Male gamete that carries male DNA; tail for swimming; many mitochondria to transfer energy.
Solvent	The liquid part of a solution e.g., water, ethanol.	Red blood cell	Carries oxygen; has a biconcave shape and no nucleus to increase surface area.
Solute	The substance dissolved in the solvent e.g. sugar, salt, carbon dioxide, copper sulphate.	Cilia cell	Has tiny hair-like structures called cilia to sweep mucus out of airways.
Soluble	Will dissolve in a solvent e.g., sugar/salt in water.	Root hair cell	Has a large hair like extension to increase surface area to absorb water and minerals from the soil.
Insoluble	Will <u>not</u> dissolve in a solvent e.g., sand in water.	Palisade cell	Found in leaves. They contain many chloroplasts to absorb light for photosynthesis.
Section 9: Types of Force		Section 10: Respiration and Photosynthesis	
Friction	Acts between two surfaces rubbing together. Acts in the opposite direction to movement.	Respiration	Chemical reaction that occurs in all living organisms. Releases energy for movement, growth etc.
Air Resistance	Acts on all objects moving through air. Acts in the opposite direction to movement.	Aerobic Respiration	Requires oxygen. glucose + oxygen -> carbon dioxide + water (+ energy)
Weight or Gravitational Force	Force caused by gravity. Pulls all objects towards the centre of the Earth.	Anaerobic Respiration	Does not require oxygen – happens in muscle cells during exercise. glucose → lactic acid (+ energy)
Upthrust	Acts upwards on floating objects.	Photosynthesis	Transfers light energy into chemical energy. Occurs in chloroplasts. carbon dioxide + water → glucose + oxygen
Support Force	Acts upwards on objects resting on solid surfaces.	Chlorophyll	Green chemical which absorbs energy from sunlight needed for photosynthesis.
Section 11: Effects of forces		Section 12: The solar system and beyond	
Resultant Force	Overall force acting on an object.	Solar System	Made up of 8 planets which orbit the Sun.
Stationary	Not moving (still).	Sun	The star in the middle of our solar system.
Balanced Forces	Resultant force is zero. Forces cancel out.	Moon	A natural satellite that orbits a planet.
Unbalanced Forces	Resultant force is not zero. Forces do not cancel out. Cause a change in motion.	Galaxy	A collection of billions of stars.
		Light Year	The distance light travels in one year.
Section 13: The Earth			
Day	Length of time a planet takes to make one full spin on its axis.		
Year	Length of time a planet takes to orbit the Sun.		
Leap Years	Occur every 4 years. February has an extra day.		
Summer in UK	When the northern hemisphere is tilted towards the sun. Sun’s rays more concentrated. Sun high in sky.		
Winter in UK	When the northern hemisphere is tilted away from the sun. Sun’s rays less concentrated. Sun low in sky.		