

Year 8 Science Half term 5 (18th March – 26th May)

Unit	Lesson Title	Objectives	Keywords.
Pressure	Pressure	Derive the units for pressure, force and area. Derive the relationship between force and area to calculate pressure. Manipulate the relationship to calculate force and area.	pressure, force, area, weight, Newtons
	Pressure in liquids	Evaluate which states of matter can be compressed. Describe uses of liquids under pressure. Apply the concept of pressure transmission to predict resultant force.	solid, liquid, gas, compresses, particle arrangement, hydraulics, resultant force, transmission
	Pressure in gases	Describe uses of gases under pressure. Apply particle theory to explain the behaviour of gas particles under pressure Explain the affect temperature has on pressure.	gas, pressure, particles, temperature, kinetic energy, collision
	Scuba Diving (Extension Lesson)	Categorise symptoms of the bends, embolism and oxygen toxicity. Describe how the gas laws relate to safe diving practices. Explain the principles of Boyle's Law and Charles' Law. Use the gas law to calculate changes in volume, pressure and temperature.	scuba, PADI/SSSI, bends, embolism, toxicity, nitrogen, Boyle's law, volume, pressure, temperature, density
	Bungee investigation Planning	Label apparatus and identify hazards and risks. Identify Independent and Dependent variables. Explain why other factors must be controlled.	retort stand, ruler, clamp, slotted masses, elastic, potential, extension, independent, dependent, control, fair test
	Bungee Practical	Set up apparatus safely and correctly. Carry out practical systematically to achieve accurate and reproducible results. Present data in appropriate tables and graphs.	systematically, reproducible
	Write up	State the relationship between weight and extension shown in your graph. Use your graph to predict the extension using any given weight. Describe how you could improve your experiment for more reliable results. Explain the term 'elastic limit' and annotate on your graph if it was reached.	extension, relationship, predict, accurate, reliable, elastic limit
	Revision	Revise for assessment.	

Speed & contact forces	Calculating speed	Derive the units for distance, time and speed. Derive the relationship between distance and time to calculate speed. Manipulate the relationship to calculate distance and time.	speed, distance, time, relationship, calculate, manipulate, miles, kilometres, seconds, minutes, hours, velocity
	Distance time graphs	Draw a distance time graph from data. Interpret distance time graphs. Calculate speed at different points on the graph and link to gradient of line.	graph, interpret, gradient
	Distance time graphs story literacy task	Write a story based on a distance-time graph. Produce a piece of extended writing using scientific language.	as above
	Speeding up	Categorise scenarios into acceleration and deceleration. Derive the relationship between speed and time to calculate acceleration. Manipulate the relationship to calculate speed and time.	velocity, acceleration, deceleration,
	Work - Levers and Pulleys	Categorise simple levers and pulleys. Describe how levers and pulleys make a task easier.	levers, pivot, effort, pulleys, force, work
	Work done = force x distance	Derive the units for work done, force and distance. Derive the relationship between force and distance to calculate work done. Manipulate the relationship to calculate force and distance.	work done, force, distance, Newtons, joules, metres, centimetres
	Moments - Required practical	Identify turning effect/moments in various objects. Calculate the moment of a force. Describe how moments can be used to make tasks easier. Explain why opposing forces must be balanced to maintain equilibrium.	moments, turning effect, force, distance, Newtons, opposing, equilibrium
	Revision	Revise for assessment.	
Magnets and electromagnetism	Magnetic fields	Draw the magnetic field of a magnet. Describe how the magnetic field lines show changes in field strength. Explain the significance of true north with regards to the Earth's magnetic field.	magnet, north, south, pole, magnetic field, iron filings, strength, attract, repel
	Permanent and non-permanent magnets	Use diagrams to show attraction and repulsion. Describe how to magnetise a material. Explain why electromagnets are sometimes used instead of permanent magnets.	electromagnets, magnetise, temporary

Electromagnet investigation - Required practical	Make an electromagnet. Identify the factors that affect the strength of an electromagnet. Evaluate the reproducibility of your results.	iron core, coils, voltage, energy, strength, reproducibility
Write up	State the factors that affect the strength of an electromagnet. Describe how you could improve the reliability of your results. How is your investigation helpful in a real life context?	Electromagnet, reliable, context, voltage, core, strength.
Revision	Revise for assessment.	