

Experiment and Equipment Guide

The Experiment and Equipment Guide lists all the experiments contained in the following texts available from Tain Electronics.

The Tain Collection - Volume 1 (supplied free with Tainlab equipment)
 The Tain Collection - Volume 2
 The IT in Science Book of Datalogging and Control by Roger Frost
 B & G Scientific worksheets (supplied free with Tainlab equipment)

Experiments for the Electronics Panel (supplied with the Electronics Panel)
 Investigating Chemistry by John Gipps
 The IT in Secondary Science book by Roger Frost
 Tainlab Primary Science

The top row lists the interfaces, sensors and modules used in these experiments. A tick in the interface column indicates that the interface may be used for that experiment.

The numbers in the equipment columns indicate the quantities of each sensor, adaptor or other accessory required for an experiment. (Only one interface is required for each activity).

Book	Experiment	TecMaster	Fielder	TecFour	TecTrio	Sealed Thermistor (stainless steel tube)	Skin Temperature Thermistor (20-40° C)	Wide Range Thermistor (-10 to 110° C)	Thermocouple - Type K	U light gate	Gooseneck light gate	IR Beam light gate	Phototransistor Switch	Dual Sound Switch	Mechanics Pulley & Adaptor	Pressure Sensor	Shock Sensor	Force Sensor	Heart Rate Monitor	Breathing Rate Monitor	Impulse Trigger	Position Sensor	Bicycle Pump with Temp Sensor	Comb Pattern for measuring g	Ultrasonic Motion Sensor	Sound Level Sensor	Sound Wave Capture Kit	Wide Range Light Sensor	Phototransistor Light Sensor	Conductivity Adaptor & Electrodes	Power Monitor	Voltage Amplifier	Magnetic Field Sensor	Accelerometer	pH Probe & Amplifier	Dissolved Oxygen Probe & Adaptor	Battery Test Kit	Voltage Input Cable	Colourimeter	Electronics Panel										
The Tain Collection Volume 1	Skin Temperatures	✓	✓	✓	✓		16																																											
	Goldilocks and the Three Bears	✓	✓	✓	✓	3																																												
	The Greenhouse Effect	✓	✓	✓	✓			2																																										
	Automatic Temperature Controller	✓			✓	1																																												
	Huddling Animals	✓	✓	✓	✓	3																																												
	Solar Hot Water System Model	✓	✓	✓	✓	4																																												
	Method of Mixtures	✓	✓	✓	✓	2																																												
	Ice - Additives and Melting Points	✓	✓	✓	✓	3																																												
	Absorption & Emission of Radiant Heat	✓	✓	✓	✓			2																																										
	Transmission of Infrared Radiation	✓	✓	✓	✓			1																																										
	Ceiling Fans	✓			✓		3																																											
	Surface Area/Volume & Cooling Rate	✓	✓	✓	✓	3																																												
	The Cooling Cup of Coffee	✓	✓	✓	✓	3																																												
	Seabreezes	✓	✓	✓	✓	2																																												
	Temperature inside a Bicycle Pump	✓	✓	✓	✓																			1																										
	Boyle's Law	✓	✓	✓	✓												1																																	
	Acceleration due to Gravity	✓	✓	✓	✓									1																																				
	Conservation of Momentum - Explosions	✓	✓	✓	✓							2																																						
	Conservation of Momentum - Collisions	✓	✓	✓	✓										1																																			
	Conversion of PE to KE - Pendulum	✓	✓	✓	✓					1																																								
Shock Absorbing Footwear	✓	✓	✓	✓													1																																	

Book	Experiment	TecMaster	Felder	TecFour	TecTrio	Sealed Thermistor (stainless steel tube)	Skin Temperature Thermistor (20-40 °C)	Wide Range Thermistor (-10 to 110 °C)	Thermocouple - Type K	U light gate	Gooseneck light gate	IR Beam light gate	Phototransistor Switch	Dual Sound Switch	Mechanics Pulley & Adaptor	Pressure Sensor	Shock Sensor	Force Sensor	Heart Rate Monitor	Breathing Rate Monitor	Impulse Trigger	Position Sensor	Bicycle Pump with Temp Sensor	Comb Pattern for measuring g	Ultrasonic Motion Sensor	Sound Level Sensor	Sound Wave Capture Kit	Wide Range Light Sensor	Phototransistor Light Sensor	Conductivity Adaptor & Electrodes	Power Monitor	Voltage Amplifier	Magnetic Field Sensor	Accelerometer	pH Probe & Amplifier	Dissolved Oxygen Probe & Adaptor	Battery Test Kit	Voltage Input Cable	Colourimeter	Electronics Panel							
The Tain Collection Volume 2 (Continued)	Cooling Curve	✓	✓	✓	✓	2																																									
	Decomposition of Grass Cuttings	✓	✓	✓	✓	2																																									
	Diffraction	✓	✓	✓	✓																	1							1																		
	Enzyme Reaction - Pancreatin/Milk Powder	✓	✓	✓	✓																																							1			
	Growth of Microorganisms	✓	✓	✓	✓																							1																			
	Hatching Chickens	✓			✓	2																																									
	Heat and Pressure	✓	✓	✓	✓	2																																									
	High Temperatures	✓	✓	✓	✓				1																																						
	Homeostasis 1	✓			✓	2																																									
	Homeostasis 2	✓			✓	2																																									
	Inverse Square Law	✓	✓	✓	✓																								1																		
	Light Ripple	✓	✓	✓	✓																								1																		
	Magnetic Field Investigations	✓	✓	✓	✓																										1		1														
	Monitoring the Sun	✓	✓	✓	✓																								1		1																
	Oscillation - Mass on a Spring	✓	✓	✓	✓															1					1																						
	Osmotic Pressure and Concentration 1	✓	✓	✓	✓												1																														
	Osmotic Pressure and Concentration 2	✓	✓	✓	✓												1																														
	Oxygen in Exhaled Breath	✓	✓	✓	✓																																										
	Photosynthesis	✓	✓	✓		1																							1																		
	Rate of Reaction - Thiosulphate Conc.n	✓	✓	✓	✓																								1																		
	Seat Belts and Crumple Zones	✓	✓	✓	✓																																										
	Solar Cell - Optimum Load	✓	✓	✓	✓																							1			1																
	Sound Amplification	✓	✓	✓	✓																						1																				
Speed of Sound	✓	✓	✓	✓																																											
Velocity in Free Fall	✓	✓	✓	✓					1																			1																			
Yeast Fermentation - Conductivity	✓	✓	✓	✓																										1																	
Yeast Fermentation - Pressure	✓	✓	✓	✓																																											
Investigating Chemistry	Corrosion of Steel Wool	✓	✓	✓	✓	1										1																															
	The Burning Candle	✓	✓	✓	✓											1																															
	Conductivity	✓	✓	✓	✓																																										
	Salt Content of Foods	✓	✓	✓	✓																																										
	Conductivity of Acids and Bases	✓	✓	✓	✓																																										

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The IT in Science book of Datalogging and control	Fermentation - Long Experiment	✓	✓	✓	✓																																															
	Osmosis	✓	✓	✓	✓											1																																				
	Oxygen solubility and temperature	✓	✓	✓	✓	1																																														
	Battery Life	✓	✓	✓	✓																																															
	Heating effect of an electric current	✓	✓	✓	✓	1																																														
	Thermistor Characteristics	✓	✓	✓	✓	1																																														
	Current-Voltage Relationships	✓	✓	✓	✓																																															
	Capacitor charge and discharge	✓	✓	✓	✓																																															
	Pressure and Temperature	✓	✓	✓	✓	1											1																																			
	Heat conduction	✓	✓	✓	✓			2																																												
	Heat insulation	✓	✓	✓	✓	2																																														
	Cooling curve	✓	✓	✓	✓	2																																														
	Absorption of thermal radiation	✓	✓	✓	✓			2																																												
	Heats of reaction	✓	✓	✓	✓	1																																														
	Exothermic Reactions	✓	✓	✓	✓	1																																														
	Rates: Thiosulphate and acid	✓	✓	✓	✓																																															
	Rates: marble and acid	✓	✓	✓	✓																																															
	Acid-base titration	✓	✓	✓	✓																																															
	Thermometric titration	✓	✓	✓	✓	1																																														
IT in Secondary Science	Insulation: wrapping food in foil	✓	✓	✓	✓	2																																														
	Insulation: keeping the house warm	✓	✓	✓	✓	4																																														
B&G Scientific worksheets	Force, Mass and Acceleration	✓	✓	✓	✓										1																																					
	Sound Wave Analysis	✓	✓	✓	✓																						1																									
	Colour Filtration	✓	✓	✓	✓																								1																							
	The Fridge	✓	✓	✓	✓																																															
	Starting a Race	✓	✓	✓	✓											1																																				
	Temperature Profile of a Room	✓	✓	✓	✓																																															
	Bouncing Balls	✓	✓	✓	✓																																															
Motion in a Circle	✓	✓	✓	✓																																																

