

The possible uses for the Edulogger-sensors

Subject = Chemistry

Edulogger - Sensor	Cat. code	What apparatus can sensor be used in conjunction with or enhance?	Possible Experiments	Level
Carbon dioxide	900-230	Basic apparatus e.g. bell-jar along with O ₂ , humidity sensors	Combustion of fuels e.g. wax candle.	KS3, KS4
		pH sensor	Measure the pH of solutions containing CO ₂ /HCO ₃ ⁻ buffer	KS5
Oxygen	900-205	Basic apparatus	Combustion of fuels e.g. wax candle.	KS3, KS4
pH sensor	900-206	Basic apparatus	Anything to do with acids and bases	KS3, KS4, KS5
		Various kits such as 'How effective is an antacid?'; 'Shampoo chemistry kit'; 'Closer Look at toothpaste' (all on p.155) and other kits on p.149 such as 'Properties of Shampoo' and 'properties of antacids'. Use along with drop counter	Testing the pH of household solutions; Testing the change in pH when an acid is added to an alkali; Comparing the actual to theoretical pH values for strong and weak acids and buffers. Titration curves for all acid-base reactions	KS3, KS4 and KS5
Voltage sensor	900-201	Chemical battery (p167); The hydrogen fuel demonstration (p145); Simple Cell kit (159) and Daniel Cell (159)	Show that chemical reactions can produce electricity; Measure the voltage obtained from electrochemical cells; Compare electrode potentials obtained experimentally with those obtained theoretically; Investigate fuel cells.	KS3; KS4; KS5
Conductivity	900-225	Basic apparatus including the Microscience kits; pH sensor	Show that acids, alkalis and salts produce ions in solution; compare the conductivity of strong and weak acids; measure the rate of a chemical reaction by changes in conductivity; measure the change in conductivity when Ba(OH) ₂ is	KS3; KS4; KS5

Edulogger - Sensor	Cat. code	What apparatus can sensor be used in conjunction with or enhance?	Possible Experiments	Level
			neutralised by aqueous sulfuric acid.	
Colorimeter	900-229	Basic apparatus	Rates of reaction using colorimetry; Stoichiometry of transition metal complexes; estimation of concentration of coloured substances; Equilibria.	KS5
UVA and UVB	900-242	Basic apparatus	Look at characteristics of 'sun blocker molecules'	KS5
Temperature	900-203	Basic apparatus plus other sensors	Endothermic and exothermic reactions; temperature changes due to combustion; verification of Charles' and Pressure Laws. Thermometric titrations; Heats of combustion	KS3, KS4 and KS5
Pressure	900-210	Basic apparatus plus other sensors	Pressure determinations; Verification of Boyle's Law and Pressure Law; Rates of reaction where there are changes in gas volume	KS3, KS4 and KS5
Drop Counter	900-233	Use along with basic apparatus and pH sensor	Titration curves for all acid-base reactions	KS5
Chloride	900-257	Basic apparatus - burette, pipette etc.	Chloride ion titration with silver nitrate solution	KS5
Calcium	900-256	Basic apparatus	Estimating hardness of water c.f. results obtained with soap solution	KS4
Light	900-204	Basic apparatus	Use for experiments that involve change in turbidity	KS4 and KS5
Conductivity	900-225	Basic apparatus	Any reaction involving a change in the number of free ions in a reaction. For example use along with drop counter and pH sensor	KS5
Ammonium	900-258	Basic apparatus	Any reaction involving ammonia production or	KS5

Edulogger - Sensor	Cat. code	What apparatus can sensor be used in conjunction with or enhance?	Possible Experiments	Level
			reaction	
Voltage		Basic apparatus	Electrode potentials; Fuel Cells; The production of hydrogen in fuel cells (LeXSolar)	Ks4 and KS5