Distillation – National Curriculum links

Education in Chemistry
January 2018
rsc.li/EiC118-distillation

Key stage	Working scientifically	Programme of study
Lower KS2	measurement of temperature; recording in tables; reporting results and conclusions; making predictions; suggesting improvements; using secondary data	states of matter (SLG); change of state on heating and cooling; measure or research temperature this happens; link to evaporation and condensation in water cycle; rate of evaporation with temperature
Upper KS2	controlling variables; accurate and precise measurements (including repeats); labelled scientific diagrams; results → predictions → further tests	Formation of solutions; recovery of substance; separation by evaporation; idea of change of state as reversible change; water cycle
KS3	relating phenomena/observations to scientific explanations; use modelling and abstract ideas to develop and evaluate explanations; objectivity (quality of data collection); evaluating risks; synthesising observations and knowledge into enquiry, and making predictions; evaluate reliability of methods; reasoned explanations, evaluating data (random/systematic errors)	particulate model; changing state cf particle model; purity; separation of materials (distillation); identification of pure substances (sharpness of boiling point)
KS4	applications of science; personal, social, economic and environmental implications; evaluation of risk (including perception of risk); planning experiments; selecting equipment; carrying out experiments; making and recording measurements; evaluating methods; presenting reasoned explanations; objective evaluation of data	Chemistry: change of state; particle kinetics; energy transfers; strength of intermolecular forces; distinguishing pure/impure; simple and fractional distillation; fractional distillation of crude oil Physics: motion of particles in SLG phases; densities; evaporation as reversible change