

# Core Practicals

## **Biology**

2.9	investigate food samples for the presence of glucose, starch, protein and fat
2.12	investigate how enzyme activity can be affected by changes in temperature
2.17	investigate diffusion and osmosis using living and non-living systems
2.23	investigate photosynthesis, showing the evolution of oxygen from a water plant, the production of starch and the requirements of light, carbon dioxide and chlorophyll
2.39	investigate the evolution of carbon dioxide and heat from respiring seeds or other suitable living organisms
2.50	investigate breathing in humans, including the release of carbon dioxide and the effect of exercise
3.5	investigate the conditions needed for seed germination
4.2	investigate the population size of an organism in two different areas using quadrats
5.6	investigate the role of anaerobic respiration by yeast in different conditions

## **Chemistry**

1.13	investigate paper chromatography using inks/food colourings
1.36	know how to determine the formula of a metal oxide by combustion (e.g. magnesium oxide) or by reduction (e.g. copper(II) oxide)
2.14	determine the approximate percentage by volume of oxygen in air using a metal or a non-metal
2.21	investigate reactions between dilute hydrochloric and sulfuric acids and metals (e.g. magnesium, zinc and iron)
2.42	prepare a sample of pure, dry hydrated copper(II) sulfate crystals starting from copper(II) oxide
3.8	investigate temperature changes accompanying some of the following types of change: salts dissolving in water; neutralisation reactions; displacement reactions; combustion reactions.
3.15	investigate the effect of changing the surface area of marble chips and of changing the concentration of hydrochloric acid on the rate of reaction between marble chips and dilute hydrochloric acid
3.16	investigate the effect of different solids on the catalytic decomposition of hydrogen peroxide solution

## **Physics**

1.5	investigate the motion of everyday objects such as toy cars or tennis balls
1.22	investigate how extension varies with applied force for helical springs, metal wires and rubber bands
3.17	investigate the refraction of light, using rectangular blocks, semi-circular blocks and triangular prisms
3.19	investigate the refractive index of glass, using a glass block
4.9	investigate thermal energy transfer by conduction, convection and radiation
5.4	investigate density using direct measurements of mass and volume
6.6	investigate the magnetic field pattern for a permanent bar magnet and between two bar magnets
7.6	investigate the penetration powers of different types of radiation using either radioactive sources or simulations