

Map of the unit: Engineering Proteins

Laboratory-based practical work is indicated by (P), activities involving IT skills are indicated by (IT) and those developing study skills by (S).

ACTIVITIES	CHEMICAL STORYLINE	CHEMICAL IDEAS
	EP1 CHRISTOPHER'S STORY	
EP2.1 Investigating amines and amino acids (P) EP2.2 What's in aspartame? (P) EP2.3 Using nuclear magnetic resonance (n.m.r.) spectroscopy for structure determination EP2.4 The shapes of α -amino acids (IT) EP2.5 A testing smell EP2.6 Taking note of proteins (S) EP2.7 Modelling DNA (IT) EP2.8 Life reveals its twisted secret	EP2 PROTEIN BUILDING	13.3 Carboxylic acids and their derivatives (revision) 13.4 The –OH group in alcohols, phenols and acids (revision) 13.8 Amines and amides (revision) 13.9 Amino acids 6.6 Nuclear magnetic resonance spectroscopy 3.3 Shapes of molecules (revision) 3.5 Geometric isomerism (revision) 3.6 Optical isomerism
	EP3 GENETIC ENGINEERING	
	EP4 PROTEINS IN 3D	5.3 Forces between molecules: temporary and permanent dipoles (revision) 5.4 Forces between molecules: hydrogen bonding (revision)
	EP5 GIVING EVOLUTION A PUSH	7.1 Chemical equilibrium (revision) 7.2 Equilibria and concentrations
EP6.1 Testing for glucose (P) EP6.2 Succinate dehydrogenase (Optional extension) EP6.3 The effect of enzyme and substrate concentration on the rate of a reaction (P)(IT) EP6.4 Using the iodine clock method to find the order of a reaction (P)(IT) EP6.5 Enzyme kinetics	EP6 ENZYMES	10.2 The effect of temperature on rate (revision) 10.5 How do catalysts work? (revision) 10.3 The effect of concentration on rate
EP7 Check your notes on Engineering Proteins (S)	EP7 SUMMARY	