

# The Hurlingham Academy - Science learning journey

Year 7						
7CP Particles	7BC Cells	7PE Energy	7BR Reproduction	7CC Chemical Reactions	7PF Forces	7BE Ecological Relationships
What are different materials made of? What are changes of state? How are mixtures separated?	What are cells? How can we see them? How are cells organised?	How is energy stored and transferred? How can we investigate this?	What is fertilisation? What happens during pregnancy and birth? How are pollen and seeds dispersed?	What happens during reactions? How do we show this? How do acids and alkalis react?	What happens when forces are unbalanced? How can we investigate the effect of different forces?	How can we show feeding relationships? How have species changed over time? How are they classified?
Solids, liquids and gases and dissolving from KS2.	Organ systems and life processes from KS2.	Light and sound from KS2.	Life cycles & parts of a plant from KS2. Specialised cells from 7BC.	Irreversible changes from KS2. Particle model from 7CP.	Forces and friction from KS2. Energy transfers from 7PE.	Classification and habitats from KS2.

Year 8					
9BP Plants	8CM Materials & the Earth	8PE Electricity & Magnetism	8PL Light & Space	8BD Healthy Diet	8CP Atoms & Periodic Table
Why is photosynthesis important? How are plants adapted for this?	What types of rock are there? What is the carbon cycle?	How does current flow in a circuit? What factors affect electromagnets?	What are reflection and refraction? How do we see? Why do we have day/night and seasons?	What makes a healthy diet? What are the consequences of unhealthy eating? How do enzymes work?	What is the structure of the atom? How is the periodic table organised?
Plant parts and nutrition from KS2. Plant reproduction from 7BR.	Rock and fossil formation from KS2.	Circuit symbols, voltage and magnetic poles from KS2. Energy transfers from 7PE.	Light rays, reflection, solar system and gravity from KS2. Energy transfers from 7PE.	Cells and organisation from 7BC.	Word equations from 7CC.

Year 9							
9BB Biological Systems	9CR Reactivity	9PM Matter	9CE Energetics	9PS Sound	9PF Forces	B1 Cells	C1 Atoms & the Periodic Table
What body systems help us exercise? How do drugs affect us?	How do we make salts? How do we extract pure metals?	How can we investigate density? What happens to substances when they are heated?	How can we investigate rates of reaction? Why do some reactions cause a temperature change?	How does sound travel? Can we hear all sounds?	How can moments help us? How can we investigate springs?	What special features do cells have? How do cells divide? How do substances enter cells?	What are isotopes? What patterns can be found in the Periodic Table?
Organisation from 7BC.	Equations and acids/alkalis from 7CC.	Particle model and changes of state from 7CP.	Particle model from 7CP, reactions from 9CR.	Energy transfers from 7PE, particle model from 7CP.	Types of force from 7PF, energy transfers from 7PE.	Cell structure and diffusion from 7BC.	Atomic structure and knowledge of the periodic table from 8CP.

Year 10										
C9 Atmosphere	B7 Ecology	P4 Atomic Structure	P3 Matter	C5 Energy Change	C3 Quantitative Chemistry	B4 Bioenergetics	B3 Infection & Response	P1 Energy & P2 Electricity	C2 Bonding & C4 Reactions	B2 Organisation
How has the atmosphere changed? How do humans impact the atmosphere?	How do organisms depend on each other? How can we investigate species distribution? How do humans impact the environment?	How has the model of the atom been developed? How do atoms emit radiation?	How can we investigate changes in temperature? How can these be explained?	How can we investigate energy change in reactions?	How can we predict the mass of the products of a chemical reaction? How can we calculate the concentration of a solution?	How can we investigate photosynthesis? How does exercise affect us? What is metabolism?	How do pathogens spread disease? How do we defend against disease? How are drugs trialled?	How is energy stored and transferred? How is electricity generated? How can we investigate resistance in circuits? How can we calculate power?	Why do substances have different properties? How are pure metals extracted? How do acids react?	What special features do the digestive, respiratory system have? What are non-communicable diseases? How are plants adapted for photosynthesis?
Human impacts from B7.	Feeding relationships from 8BE.	Atomic structure from C1.	Energy transfers from P1.	Neutralisation from C4, energy transfers from P1	Element symbols from C1, reactions from C4.	Plant tissues from B2, cell structure from B1, plants from 9BP.	Bacteria from B1, communicable diseases from B2.	Energy transfers from 7PE, circuit components from 8PE	Electron arrangements from C1, reactions from 9CR	Specialised cells from B1

Year 11									
B5 Homeostasis	P5 Forces	C6 Rates of Reaction	B6 Inheritance & Selection	C7 Organic Chemistry	C8 Chemical Analysis	P6 Waves	P7 Magnetism	C10 Resources	
How are conditions in our body controlled? How can we use our knowledge of this for medical treatments?	How do forces affect motion? How can we investigate elasticity?	How can we measure the rate of a reaction? How can we use reversible reactions?	How are characteristics inherited? How have species changed over time? How can we manipulate selective processes?	What is crude oil? How can we use its products?	What are pure and impure substances? How can we analyse them?	How do waves transfer energy? What can electromagnetic waves be used for?	How can magnetic fields be investigated? What can electro magnets be used for?	How can we recycle different materials? How can we evaluate our material choices?	
Stem cells and specialised cells from B1	Energy transfers and mathematical techniques from P1	Reactions from C4, endo/exo from C5, rates from 9CE	Specialised cells from B1, selection from 8BE	Properties and bonding from C2	Separating techniques from C1	Energy transfers from P1, effects of radiation from P4	Circuits from P2, magnetic fields from 8PE	Human impacts from B7 & C9	

