LEARNING JOURNEY

CHEMISTRY

CURRICULUM INTENT

All students leave Benton Park as research ready scientists with an enquiring mind. They can understand and apply the scientific process (theory – hypothesis – experiment – analysis – evaluation) to new concepts in the wider world. No matter what their future career and occupation, students are equipped with the skills to thrive in a changing world and explore new ventures.

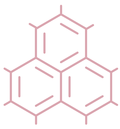
A RESEARCH READY BENTON PARK SCIENTIST:

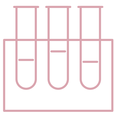
- Recalls fundamental concepts within science and records accurate measurements from scientific instruments.
- Explains key scientific ideas fluently and explains reasons behind the steps in experimental procedures.
- Articulates links between their learning across all the specialisms within science and analyses data and links conclusions to explain real life phenomenon.
- Connects their learning to explain abstract real life phenomenon and critically evaluates the reliability and accuracy of experimental procedures and data.

BENTON PARK SCHOOL VALUES

In Science, students:

- Develop **resilience** by problem solving and learning how to apply multiple equations to solve real life problems.
- **Collaborate** with each other to develop team skills and strategies in experimental practicals and research projects.
- **Endeavour** to plan and conduct rigorous and reproducible experimental investigations to test scientific hypotheses.
- Develop **compassion** through studying how our everyday actions are impacting our environment and what we can do to reduce this and make a more sustainable world.
- Are **inspired** by the range of great Scientists we expose them to such as Maggie Aderin Pocock, while finding inspiration in how people of different backgrounds are working towards creating sustainable living.





YEAR 7

- Particle model
- Separating mixtures
- Metal, non-metals, acids and alkalis
- Earth's structure

YEAR 8

- Climate and Earth's resources
- Periodic table and elements
- Chemical reactions and types of reactions

YEAR 9

- Bonding
- Atomic structure
- Rates of Reaction
- Quantitative chemistry
- Atmosphere

YEAR 10

- Energy changes
- Rates and equilibria
- Quantitative chemistry
- Chemical analysis
- Bonding
- Atomic Structure
- Using resources and organic

YEAR 11

- Bonding
- Atomic structure
- Qualitative chemistry
- Energy changes
- Organic Chemistry
- Atmosphere

YEAR 12

- Chemical changes
- Rates and equilibria
- Using resources
- Chemical analysis
- Acids, titrations and redox
- Electron, bonding and structure
- Amount of substances
- Analytical chemistry
- Organic chemistry

YEAR 13

- Carbonyl, acids and esters
- Acids, bases and buffers
- Energy, enthalpy and entropy
- Redox and electrode potentials
- Rates and equilibrium
- Nitrogen compounds, polymers and synthesis
- Organic synthesis and analysis
- Aromatic chemistry
- Periodic table
- Physical chemistry