Knowledge Mat: Science – Year 7

Key Knowledge for Year 7

Term 1

- Safety in the laboratory
- Forces
- Cells
- Acids and alkali

Term 2

- Reproduction
- Particle model of matter
- Variation
- Electricity

Term 3

- Energy
- Solutions
- Environment
- Solar System

Wider Experiences / Try To Do…

- Iceland Trip
- Peak Wildlife Park
- Chaplaincy Day Activities

The big questions:

- How can you keep yourself safe in the science laboratory?
- What is everything made of?
- How did you get here, and why do you look like you do?
- Eight planets or more?
- Solid, liquid or gas?

Biology

In Year 7 pupils will be taught how to work safely and cooperatively in the laboratory, what equipment is, and how to use it correctly. They will learn about plant and animal cells, variation in these cells, and how cells come together to form tissue, organs and systems. Pupils will study how organisms can be classified, how they relate to each other and the environment, how adaptations have helped them, and how organisms reproduce. The mechanics of human reproduction will be taught and changes at puberty and through adolescence will be covered, as will the importance of a healthy lifestyle.

Chemistry

Pupils will be taught how to work safely and cooperatively in the laboratory, what equipment is, and how to use it correctly. Pupils will be introduced to a basic particle model of solids, liquids and gas, elements and the periodic table. Pupils will do practical work in order to build their skill level, and through investigation they will learn about acids, alkalis and neutralisation and how to test chemicals to determine properties. Pupils will learn separation techniques and the difference between mixtures and compounds; they will also learn some chemical symbols and equations. Fire safety at home will be covered.

Physics

Pupils will be taught how to work safely and cooperatively in the laboratory, what equipment is, and how to use it correctly. Pupils will be taught mainly through practical activities. When learning about forces they will build force meters, investigate the properties of elastic materials, test for friction and drag, calculate speeds and work out why things balance. Their KS2 electrical work will be built upon by building electrical circuits and gaining a deeper understanding of current, voltage and resistance. Pupils will investigate the amount of energy contained in foods and consider global energy issues and our place in space.