

Subject	Science
Term	Cycle I
Duration (approx.)	7 lessons
Module	Biology — Cells

Factual knowledge to be taught and assessed (including subject specific vocabulary)

- Observing cells using a microscope – **Define** the term cell. **Use** a microscope to identify cells
- Animal & Plant cells – **Describe** the functions of the components of a cell. **Describe** the similarities and differences between animal and plant cells.
- Specialised cells – **Describe** examples of specialised animal cells. **Describe** examples of specialised plant cells.
- Movement of substances (Diffusion) – **Name** substances that move into and out of cells via diffusion. **Describe** the process of diffusion.
- Movement of substances (Osmosis) - **Name** substance that move into and out of cells via osmosis. **Describe** the process of osmosis.

Skills and concepts to be developed

Working Scientifically skills

Recognise different variables in a variety of experiments.

Drawing and interpreting graphs from data collected

Formative Assessment one:

FT1a – Key word spellings/pronunciation + Glossary

FT1b – Use of key words in sentences

Formative Assessment two:

FT2 – Cells

(Application of knowledge)

Summative Assessment:

End of cycle test

This test will cover questions from this topic and current cycle topics to check understanding.

Link to prior learning:

Some students will have a brief understanding of microorganisms, animal and plant cells. The need for cells as the living blocks of life.

Literacy and Numeracy:

How will high standards be promoted in this module?

Literacy -

FT1a – spellings, pronunciations and definitions of key terms

FT1b – Use of key words in sentences

FT2 – Extended answer question in final task that requires pupils to apply their knowledge

Numeracy – FT2 – Extended answer question in final task that requires pupils to apply their knowledge

Link Forward: Where next for learning?

Students will develop a greater understanding of DNA, chromosomes which will feed into Y8 adaptations & inheritance, as well as KS4:

BI-B15 Including: Cells, organisation of cells, reproduction, homeostasis, and genetics.

Subject	Science
Term	Cycle 1
Duration (approx.)	7 lessons
Module	Chemistry— Atomic chemistry

Factual knowledge to be taught and assessed (including subject specific vocabulary)

- Atoms – **State** what atoms are, **Compare** the properties of one atom of an element to the properties of many atoms
- Elements – **Define** the term element, **Recall** the chemical symbols of six elements **Understand** the meaning of atomic mass and atomic number. **Know** how to calculate the number of protons, neutrons and electrons.
- Compounds – **Define** the term compound, **Explain** why a compound has different properties to the elements in it.
- Chemical Formulae – **Write** the chemical names for some simple compounds, **Write** and **interpret** chemical formulae
- Particles – **Describe** how materials are made up of particles, **Describe** the properties of a substance in its three states.
- Change of state – **Use** the particle model to **explain** changes in states solids, liquids and gases. **Using** the particle model state the changes of state using the terms evaporation, condensation and sublimation.

Skills and concepts to be developed

Working Scientifically skills:

Recognise different variables in a variety of experiments.

Drawing and interpreting graphs from data collected

Lab safety skills—when making salts from metal and acid reactions.

Formative Assessment one:

FT1a – Key word spellings/pronunciation + Glossary

FT1b – Use of key words in sentences

Formative Assessment two:

FT2 – Atomic Chemistry

(Application of knowledge)

Summative Assessment:

End of cycle test

This test will cover questions from this topic and current cycle topics to check understanding.

Link to prior learning:

KS2:

Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating

Literacy and Numeracy:

How will high standards be promoted in this module?

Literacy -

FT1a – spellings, pronunciations and definitions of key terms

FT1b – Use of key words in sentences

FT2 – Extended answer question in final task that requires pupils to apply their knowledge

Numeracy –

Drawing and interpreting graphs from data collected

Link Forward: Where next for learning?

Student will develop using skill and knowledge in year 8 Cycle 3 Metals and acids, as well as

KS4:

C1 – Atomic Chemistry

C2 – The periodic table

C3 – Structure & bonding

Subject	Science
Term	Cycle I
Duration (approx.)	7 lessons
Module	Physics — Energy

Factual knowledge to be taught and assessed (including subject specific vocabulary)

- Energy Sources – State the names of different stores of energy. Describe how we could increase or decrease stores of energy.
- Conservation of energy -State the conservation of energy. Describe energy transfers. Apply the conservation of energy.
- Energy transfers – Draw energy transfer diagrams. Describe energy transfers before and after a change. Compare energy transfers to energy conservation explaining energy dissipation.
- Energy Resources – Describe the difference between renewable and non-renewable energy resources. Describe how energy is generated in a power station.
- Energy & Power – Explain the difference between energy and power. Describe the link between power, fuel, and cost.

Skills and concepts to be developed

Working Scientifically skills:

Recognise different variables in a variety of experiments.

Drawing and interpreting graphs from data collected

Formative Assessment one:

FT1a – Key word spellings/pronunciation + Glossary

FT1b – Use of key words in sentences

Formative Assessment two:

FT2 – Energy

(Application of knowledge)

Summative Assessment:

End of cycle test

This test will cover questions from this topic and current cycle topics to check understanding.

Link to prior learning:

KS2 – Students should have a brief understanding of forces that act on objects. Some students may have a vague understanding of conceptualising energy.

Literacy and Numeracy:

How will high standards be promoted in this module?

Literacy -

FT1a – spellings, pronunciations and definitions of key terms

FT1b – Use of key words in sentences

FT2 – Extended answer question in final task that requires pupils to apply their knowledge

Numeracy –

Drawing and interpreting graphs from data collected

Link Forward: Where next for learning?

KS3—

Students will develop using the skills and knowledge from this topic in all KS3 & KS4 Physics as it is the core topic

KS4:

PI – P11

Including: Energy resources, Energy transfer, electricity, circuits, forces, motion etc.