

Subject	Science
Term	Cycle 2
Duration (approx.)	7 lessons
Module	Chemistry—The Earth's Resources

Life cycle assessments
Reduce, reuse, recycle
Blast furnace
Environment

Numeracy –

Data estimations of percentage finite reserves.
Analysis and purification of water samples.

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

State examples of natural products that are supplemented or replaced by agricultural and synthetic products.
Distinguish between finite and renewable resources given appropriate information.
Distinguish between potable water and pure water
Describe the differences in treatment of ground water and salty water.
Evaluate alternative biological methods of metal extraction, given appropriate information.
Evaluate ways of reducing the use of limited resources, given appropriate information.

Skills and concepts to be developed

Extract and interpret information about resources from charts, graphs, and tables
Use orders of magnitude to evaluate the significance of data.
The Earth's resource and limitations.

Summative Assessment:

End of unit test

Link to prior learning:

Earth as a source of limited resources and the efficacy of recycling

**Literacy and Numeracy:
How will high standards be promoted in this module?**

Literacy -

Vocabulary and definitions. Ability to use these in contexts for longer written answers.

- Finite
- Renewable
- Potable water
- Sewage
- Extraction

Subject	Science
Term	Cycle 2
Duration (approx.)	9 lessons
Module	Biology— Organising Animals and Plants

Plasme

Platelet

Numeracy –

Students should be able to use simple compound measures such as rate and carry out rate calculations for blood flow.

Explain how to make estimates more accurate in terms of precision of data.

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

Recognise the components of blood, describe their functions, and summarise the process of blood clotting.

Recognise the three main types of blood vessel, link their structures with their functions, and understand the importance of a double circulatory system.

Describe the main structures of the human heart and their functions. Be aware of problems that can develop in the blood vessels and their treatments.

Know how the heartbeat is maintained by the pacemaker, and why some people may have problems with their heart and may need an artificial pacemaker or artificial heart.

Compare different treatments of heart problems

Skills and concepts to be developed

Evaluate in detail the different methods used in the treatment of heart problems.

Summative Assessment:

End of Topic Assessment

Link to prior learning:

Yr7 Structure and Function

Literacy and Numeracy:

How will high standards be promoted in this module?

Literacy -

Vocabulary and definitions. Ability to use these in contexts for longer written answers.

Artery

Vein Capillary

Pulmonary

Aorta

Atrium

Ventricle

Subject	Science
Term	Cycle 2
Duration (approx.)	7 lessons
Module	Physics— energy Transfer by Heating

**Literacy and Numeracy:
How will high standards be promoted in
this module?**

Literacy -

Vocabulary and definitions. Ability to use these in contexts for longer written answers.

Numeracy –

Use of equations as stated in specification .

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

Develop understanding of the heating and cooling processes which transfer energy within a material or from one object to another.

Investigate thermal conductivity and the differences in the processes of thermal conduction in metals and non-metals.

Describe the transfer of energy between objects through absorption and emission of infra-red radiation as a part of the electromagnetic spectrum.

State factors that affect the rate of this transfer such as temperature and surface colour.

Apply knowledge to the concept of the Greenhouse Effect and its relationship to the wavelength of the radiation penetrating or being absorbed by Earth's atmosphere.

Use the concept of specific heat capacity to explain the choice of materials used in heating systems.

How reduction of energy transfers to the surroundings is achieved by insulation, such as loft or cavity wall insulation, will be studied and applied to the context of reducing energy loss in buildings to reduce heating costs including the idea prioritising home improvements in line with payback time.

Skills and concepts to be developed

Analyse the changes in temperature when a material is heated, leading to the experimental determination of specific heat capacity along with corresponding calculations.

Summative Assessment:

End of Unit Test

Link to prior learning:

Particles and their behaviour

The particle model

Energy and Temperature

Energy Transfer Particles

Subject	Science
Term	Cycle 2
Duration (approx.)	7 lessons
Module	Physics— Molecules and Matter

Gas constant

Numeracy –

Evaluate in detail the experimental measurement of density, accounting for errors in measurements.

Students should be able to express answers in standard form if appropriate.

Students should be able to derive and recall units as appropriate.

Use practical skills to gather data and then use data to create a graph and analyse the results.

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

Skills and concepts to be developed

Required practical: Use appropriate apparatus to make and record the measurements needed to determine the densities of regular and irregular solid objects and liquids. Volume should be determined from the dimensions of regularly shaped objects, and by a displacement technique for irregularly shaped objects. Dimensions to be measured using appropriate apparatus such as a ruler, micrometer, or Vernier callipers.

Summative Assessment:

End of Topic Assessment

Link to prior learning:

The particle model

States of matter

Melting and freezing

Boiling

More changes of state

Pressure in gases

Literacy and Numeracy:

How will high standards be promoted in this module?

Literacy - Vocabulary and definitions. Ability to use these in contexts for longer written answers.

Density

Internal energy

Specific Latent Heat

Vaporisation

Fusion

Y9 Science