Y8 Science

Subject	Science
Term	Cycle 2
Duration (approx.)	10 lessons
Module	Biology— Ecosystems

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

Describe process of photosynthesis and role in a plant.
Explain how a range of factors can affect the rate of photosynthesis.
Describe the structure of the leaf and explain the adaptations.
Describe the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops.
How organisms affect, and are affected by, their environment, including the accumulation of toxic materials.

Skills and concepts to be developed

Observe leaf T.S under a microscope.
Carry out stomatal peel and observe under a microscope.
Interpretation of graphs including connecting patterns seen to scientific knowledge.

Formative Assessment one:

FT1a – Key word spellings/pronunciation + Glossary

FT1b – Use of key words in sentences

Formative Assessment two:

FT2 – Plot a graph from provided data on the effect of light intensity on the rate of photosynthesis in pondweed. Describe and explain relationship and identify key variables

(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:

KS1 and 2 Living things and their habitats

Explore and compare the differences between things that are living, dead, and things that have never been alive.

Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.

Identify and name a variety of plants and animals in their habitats, including micro-habitats .

Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

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 –

Graph skills

Link Forward: Where next for learning?

KS4 GCSE Biology

Adaptation

Interdependence

Competition

Y8 Science

Subject	Science
Term	Cycle 2
Duration (approx.)	10 lessons
Module	Chemistry— Separating techniques

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

Describe particle arrangements in mixtures. **Explain** how to identify pure substances.

Describe solutions using key words. Use the particle model to **explain** dissolving.

Explain what a saturated solution is. **Explain** the meaning of solubility.

E**xplain** how filtration works. **Describe** how to filter a mixture.

Explain how to use evaporation to separate mixtures. **Explain** how distillation works.

Formative Assessment one:

Use of key words in a synoptic paragraph linked to the module.

Formative Assessment two:

Write a method for completing filtration as a separating technique.
Calculating percentage change and plotting data on a graph

Summative Assessment:

End of cycle test.

This test will cover questions from the topic and previous topics to check understanding.

Link to prior learning:

Compare and group materials together, according to whether they are solids, liquids or gases

Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)

Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

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

Literacy -
Formative test 1 – key words and sentences
Formative test 2 – Writing a structured and logical method.

Numeracy –Calculation of percentage change in mass, plotting data on a graph.

Link Forward: Where next for learning?

KS4 GCSE Chemistry

C1 – Separating mixture
C5 – Chemical changes

Y8 Science

Subject	Science
Term	Cycle 2
Duration (approx.)	10 lessons
Module	Physics—Light and waves

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

Define longitudinal and transverse waves

State examples of each type of wave

Describe key features of a wave including amplitude, wavelength, peak, trough, frequency

Describe the link between frequency and pitch, amplitude and volume of a sound waves including recognising differences on an oscilloscope.

Reflection of sound wave is an echo.

Law of reflection.

Refraction including different densities.

the transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface.

Colour absorption and reflection from different coloured surfaces and their appearance through different coloured filters or in different colours of light.

Skills and concepts to be developed

Use of ray boxes, mirrors, prisms to investigate reflection, dispersion and refraction.

Use filters to determine what colours are absorbed or transmitted

Formative Assessment one:

FT1a – Key word spellings/pronunciation + Glossary

FT1b – Use of key words in sentences

Formative Assessment two:

FT2 – Plot data of density vs angle of refraction. Identify variable. State an appropriate conclusion. Match some key terms.

(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:

Recognise that light appears to travel in straight lines.

Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.

Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes

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

Numeracy –

FT2 – Plotting and analysing graph data graph

Link Forward: Where next for learning?

KS4 GCSE Physics

P12 wave properties

P13 Electromagnetic waves