



SCIENCE Y₉ CURRICULUM AND ASSESSMENT MILESTONES DOCUMENT

YEAR 9 CURRICULUM MILESTONES: SCIENCE

Year 7 Review	Lessons have been planned to address misconceptions and gaps in understanding from the end of year 8 summative assessments. Students revisit and teaches re-teach key concepts from Biology, chemistry and physics to review learning from year 7.
Year 8 Review	Lessons have been planned to address misconceptions and gaps in understanding from the end of year 7 summative assessments. Students revisit and teaches re-teach key concepts from Biology, chemistry and physics to review learning from last year (year 8).
Topic 1: Chemical reactions	Students build on their prior knowledge from year 8 by applying their knowledge of chemical reactions to understand atoms in chemical reactions, thermal decomposition and what bond energies is. They learn about exothermic and endothermic reactions by applying their understanding about conservation of mass.
Topic 2: Variation, evolution & inheritance	Students build on their knowledge from years 7 and 8 to explore how variation occurs and the difference between continuous and discontinuous variation using everyday examples e.g. height and blood group. They apply this knowledge further to explain natural selection by exploring the work of Charles Darwin extensively.
Topic 3: Energy & power	Students learn about energy transfer and resources using examples in physics. We also spend some time recapping and revisiting their understanding of KE and GPE using TLAC techniques and knowledge recall starters.
Review years 7-9 and STEM project	We have allocated time in our curriculum plan to stop and reteach and consolidate learning so far. This is planned according to the detailed QLA breakdown from assessments completed till date which informs us which topics students did not perform so well in so heads of subject areas and teachers can plan lessons to address gaps in knowledge and understanding. This will be assessed using formative assessments and TLAC techniques.
STEM project	Students are given the opportunity to go beyond the national curriculum and engage in STEM project work. This involves them expanding their working scientifically skills, practical skills and testing a scientific hypothesis. They will present their results to a group of individuals based on a chemistry topic.
Topic 4: Matter	Students build on their knowledge from topic 1 chemical reactions to further learn about the development of the atom, electronic structure and the different groups in the periodic table. They explore the different properties of elements and why these elements have certain properties through practical skills and watching demos e.g. reaction of alkali metals in water.
STEM project	Students are given the opportunity to go beyond the national curriculum and engage in STEM project work. This involves them expanding their working scientifically skills, practical skills and testing a scientific hypothesis. They will present their results to a group of individuals based on a biology and physics topic. This will be followed by a STEM related school trip for a group of individuals to help enthuse a passion and love for learning science.
Topic 5: Life beyond cells	Students build on prior knowledge through revisiting and recapping core knowledge and any gaps in learning are addressed. Students engage in practical skills and work on their working scientifically skills through using their observational skills to use a light microscope to make drawings of plant cells and prep-prepared slides under a microscope.

Science STEM Week	Students are given an opportunity to go above and beyond the national curriculum and engage in working scientifically to formulate a hypothesis, plan an investigation, carry out the investigation and analyse and conclude their findings by producing a presentation based on forensic science.
Topic 6: Cell specialism	Students explore the use of cell specialisation by learning about examples of specialised cells in our human body. They then apply this understanding to animal and plant cells, by understanding what makes these cells specialised.
Topic 7: Electricity & magnetism	Students explore the difference between series and parallel circuits by using their practical skills to build circuits using circuit equipment. Students revisit their understanding of magnetism and apply this to understanding electromagnetism through practical skills where they investigate electromagnetism.
Topic 8: Pushes and pulls	Students build on prior knowledge of forces by understanding and making links between the use of forces and resultant forces. They apply this understanding to distance time graphs. They are expected to work on their graphical skills and be given a data set to produce a distance time graph and draw a line of best fit in this topic.
Biology project	Students engage in a STEM project based on learning from years 7 to 8. Some students will have the opportunity to engage in a biology masterclass which takes our HAP students beyond the national curriculum and gives them an opportunity to engage in triple science content to help attract students to choose triple science as an option for year 10.
Topic 9: Photosynthesis and respiration	This is an opportunity for teachers to address misconceptions and gaps in learning and understanding of photosynthesis and respiration taught in years 7 and 8. Students will then build on this knowledge by further learning about respiration and exercise.
Chemistry project	Students engage in a STEM project based on learning from years 7 to 8. Some students will have the opportunity to engage in a chemistry masterclass which takes our HAP students beyond the national curriculum and gives them an opportunity to engage in triple science content to help attract students to choose triple science as an option for year 10.
Physics project	Students engage in a STEM space project based on learning from years 7 to 8. Some students will have the opportunity to engage in a physics masterclass which takes our HAP students beyond the national curriculum and gives them an opportunity to engage in triple science content to help attract students to choose triple science as an option for year 10.

YEAR 9 ASSESSMENT MILESTONES: SCIENCE

Year 7 Review	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson.
Year 8 Review	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson.
Topic 1: Chemical reactions	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson.
Topic 2: Variation, evolution & inheritance	Students to complete an end of term summative assessment which is made up of 3 sections including knowledge recall from last year and assessing students understanding of key scientific practical skills. This assessment will test their understanding of topics 1 and 2.
Topic 3: Energy & power	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson.
Review years 7-9 and STEM project	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson.

Topic 4: Matter	Students to complete an end of term summative assessment which is made up of 3 sections including knowledge recall from last year and assessing students understanding of topics 3 and 4 during this year.
STEM project	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson. Students will be assessed on their practical and graphical skills through formative assessments.
Topic 5: Life beyond cells	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson.
Science STEM Week	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson. Students will be assessed on their practical and graphical skills through formative assessments.
Topic 6: Cell specialism	Students to complete an end of term summative assessment which is made up of 3 sections including knowledge recall from last year and assessing students understanding of topics 5 and 6.
Topic 7: Electricity & magnetism	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson.
Topic 8: Pushes and pulls	Students to complete an end of term summative assessment which is made up of 3 sections including knowledge recall from last year and assessing students understanding of topics 7 and 8.
Biology project	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson. Students will be assessed on their practical and graphical skills through formative assessments.
Topic 9: Photosynthesis and respiration	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson.
Chemistry project	Students to complete in class formative assessment which assesses learning in the lesson using extensive TLAC techniques. Students also complete knowledge recall starter questions which acts as formative assessment to check for gaps in understanding from the previous lesson. Students will be assessed on their practical and graphical skills through formative assessments.
Physics project	Students to complete in class formative assessment which will assess learning in the lesson using extensive TLAC techniques. Students will also work on their working scientifically and presenting skills to analyse and present their ideas on their STEM project to others. Some time is allocated for consolidation week to help students prepare for their upcoming end of year assessment based on topics studied throughout this academic year.