



WAGIN DISTRICT HIGH SCHOOL SEMESTER 1 OUTLINE

Year 9/10 Science 2018

COURSE OUTLINE

During first semester the focus in Science will be on Chemical Science, Earth and Space Science and Physical Science.

Students will start Term 1 by looking at the atom and radioactivity. They will then move on to look at chemical reactions in both living and non-living systems.

During Term 2 students will spend the first 5 weeks focussed on Earth and Space Sciences, specifically learning about plate tectonics and geological activity.

For the remainder of Term 2 students will begin their study of Physical Sciences by looking at heat, and this will be continued into and assessed in Semester 2.

In addition, students will spend time looking at the development of these scientific areas over time and how changes in technology have influenced our understandings.

Investigative skills will also be developed through the use of the scientific inquiry process.

COURSE OUTCOMES

The following concepts form the Science Understanding strand of the Australian Curriculum will be addressed:

Chemical Sciences

- All matter is made of atoms that are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms (ACSSU177)
- Chemical reactions involve rearranging atoms to form new substances; during a chemical reaction mass is not created or destroyed (ACSSU178)
- Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer (ACSSU179)

Earth and Space Sciences

- The theory of plate tectonics explains global patterns of geological activity and continental movement (ACSSU180)

Physical Sciences

- Energy transfer through different mediums can be explained using wave and particle models (ACSSU182)

Students will also look at the Science as a Human Endeavour strand of the Australian Curriculum by addressing the following:

Nature and Development of Science

- Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE157)
- Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries (ACSHE158)

Use and Influence of Science

- People can use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities (ACSHE160)
- Values and needs of contemporary society can influence the focus of scientific research (ACSHE228)

The Science Inquiry Skills strand will also be covered through the use of investigation and experimentation.

TASKS & ASSESSMENT

Students will generally undertake work in blocks of 5 weeks. During this time they will be expected to complete all required class work and homework, and this will then be assessed in an end of unit test. Students may also be asked to complete quizzes, assignments and/or investigations to help develop their understanding of the concepts covered. *While the key content will be taught at school, it is essential that students revise at home on a regular basis to help practice new skills and solidify their understanding.*

All work samples, both formal and informal, will then be used to determine the ability and grade of each student.

TIME LINE

	WEEK	KEY CONCEPTS	ASSESSMENTS
Term 1	1 – 6	<i>Chemical Science – Atoms & Nuclear Decay</i> <ul style="list-style-type: none">• Atomic structure• Properties of protons, neutrons and electrons• Atomic and mass numbers• Electron shells• Isotopes & ions• Periodic Table of the Elements• Chemical formula• Nuclear decay• Types of radiation and their uses• Half-life	Assignment TEST
	7 – 11	<i>Chemical Science – Chemical Reactions</i> <ul style="list-style-type: none">• Reactants and products• Law of Conservation• Acids and alkalis• pH scale and indicators• Reactions with acid• Other types of reactions	Investigation TEST
Term 2	1 – 5	<i>Earth & Space Science – Plate Tectonics</i> <ul style="list-style-type: none">• Continental movement• Structure of the Earth• Plate tectonics• Earthquakes and volcanoes	Assignment TEST
	6 – 9	<i>Physical Science - Heat</i> <ul style="list-style-type: none">• Heat vs temperature• Contraction and expansion• Heat transfer - conduction, convection & radiation• Insulators and conductors	Investigation TEST

Timeline and assessment items may be subject to change.