



WAGIN DISTRICT HIGH SCHOOL

SEMESTER 2 OUTLINE

Year 9/10 Science 2020

COURSE OUTLINE

During second semester the focus in Science will be on Physical Sciences and Biological Sciences. Students started their exploration of energy by looking at heat at the end of Term 2, and will continue this into Term 3 by focussing on sound and light. During the latter part of Term 3 and continued in to Term 4 students will turn their focus to biology, specifically looking at the interdependence of biotic and abiotic components of ecosystems, and how multicellular organisms respond to their environment. 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:

Physical Sciences

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

Biological Sciences

- Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment (ACSSU175)
- Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176)

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, are contestable and are 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 should accept claims, explanations or predictions (ACSHE160)
- Advances in science and emerging sciences and technologies can significantly affect people's lives, including generating new career opportunities (ACSHE161)
- The 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 will then be used to determine the ability and grade of each student.

TIME LINE

	WEEK	KEY CONCEPTS	ASSESSMENTS
Term 3	1 – 5	<i>Physical Science – Light & Sound</i> • Types of waves – longitudinal vs transverse • Wavelength, frequency & amplitude • Sound – speed, absorption & reflection • The ear and hearing • Properties of light • Transparent, translucent and opaque objects • Diffuse and regular reflection • Reflection in plane and curved mirrors • Refraction	Investigation TEST
	6 – 10	<i>Biological Science – Ecosystems</i> • Interdependence in ecosystems • Factors influencing organisms – biotic & abiotic factors • Adaptations • Food webs and chains & energy flow in ecosystems • Biodiversity • Natural & human impacts on ecosystems	Assignment TEST
Term 4	1 – 6	<i>Biological Science – Responding to Change</i> • Nervous system – nerve cells & brain • Peripheral vs central nervous systems • Responding to stimuli • Reflex actions • Endocrine system – glands & hormones • Feedback loops • Control of temperature, water and blood sugar • Interdependence of body systems	Investigation Assignment TEST
	7 – 10	<i>Biological Science – Disease</i> • Infectious agents – bacteria, viruses & parasites • The immune system • Vaccination & hygiene	TEST

Timeline and assessment items may be subject to change.