



Science Overviews Term 4 - 2019 Biological Science

This term in the STEM labs we will be focussing on the Australian Curriculum Science sub-strand of Biological Sciences. In essence, Biological Sciences is the area of science concerned with understanding living things. The key concepts developed within this sub-strand are that: a diverse range of living things have evolved on Earth over hundreds of millions of years; living things are interdependent and interact with each other and their environment; and the form and features of living things are related to the functions that their body systems perform. Students investigate living things, including animals, plants and microorganisms, and their interdependence and interactions within ecosystems. They explore their life cycles, body systems, structural adaptations and behaviours, how these features aid survival, and how their characteristics are inherited from one generation to the next.

Student exploration of human endeavour will be explored in a range of ways as this supports students to develop their understanding and make connections through linking tangible examples of science in their world with the scientific relevance of the concept being taught.

Students will continue to develop their Science Inquiry Skills throughout this process via such actions as questioning, investigating, researching, comparing, measuring, observing, predicting, testing ideas, collaborative group work and conducting experiments. Comparing, contrasting, reflection and evaluation will also be a key part of their work.

We have a number of exciting incursions planned for this term. As part of the CSIRO's STEM Professionals in schools program, an organic chemist will be working with the 3/4, 4/5 and 6/7's classes for a lesson, exploring a range of science areas, such as DNA extraction, embryo markers of wheat grain, crossing genes from one plant to another. We also welcome back Elaine Anderson who will be presenting to the year 4/5's about her interesting experiences working as a marine biologist on the Great Barrier Reef. This will also include how all life on the reef relies on each other for survival and the fragile balance that is needed to maintain its rich levels of biodiversity. She will also explore with the students the importance of the reef to our worlds fragile ecosystem, the many challenges the reef faces and positive things we can do to make a positive difference.

This term I will be taking long service leave for the final 3 weeks of term and Fran Vallance will be teaching science in my absence. Her program will also be covering Biological Sciences.

Kind Regards

Nic Strevens

Ms Summerville and Ms Cazz

This term we will be undertaking an inquiry based unit of work that explores how living things have basic needs, including food and water. Students will be working scientifically by engaging in a variety of hands on investigations and experiments to explore and describe the basic needs all living things have and have in common, needs versus wants of humans, and what can happen if needs are not met. Students' beliefs and understandings about the basic needs of living things will be developed as they work through a range of hands-on activities. This will include investigating plant growth in different conditions and drawing conclusions based on results.

Science based STEM Challenge – Students will use a range of natural materials to represent a habitat for a native animal they might find locally, showing how the animals basic needs are met They will do this by critically, creatively and collaboratively developing a video of the habitat, describing the needs of the animal and how the features of the habitat help to cater for these needs.

Ms Hyatt, Mrs Cottle and Ms Inge

This term we will be undertaking an inquiry based unit of work that explores how living things have a variety of external features and live in different places where their needs are met. Students will be working scientifically by engaging in a variety of investigations and experiments to explore the external features of modern animals and compare them with skeletons of dinosaurs and other prehistoric animals. Through hands-on activities and a design challenge, students will be supported to represent and explain their understanding of the external and protective features of prehistoric animals, where they live and how their needs were met.

Science based STEM Challenge – Students will design and develop a shield that is inspired by the protective features of dinosaurs and use those ideas to design, make and appraise their 'dino shield'. They will reflect and critique their designs based on agreed criteria that we have developed within the classes.

Students will further develop their capability in critical and creative thinking as they learn to generate and evaluate knowledge, ideas and possibilities relating to their shield design and use them when developing and improving upon their designs.

Science as a Human Endeavour will explore and consider the role palaeologists and other scientist play in developing our understanding of the features, behaviours, habitats and needs of prehistoric plants and animals.

Ms Bailey/Madame Jones, Mr Richards, Mr Wyatt and Mr Menzell

Our focus for inquiry this term will be the exploration of how living things have life cycles and their interdependence and interactions within ecosystems. Students will be working scientifically by engaging in a variety of hands on investigations and experiments to explore how living things depend on each other and the environment to survive, also how natural processes and human activity shape our surroundings. This will be through the lens Daintree Rainforest, exploring its ecosystem, and relationships between living things, focusing on mutual relationships and interactions.

Science based STEM Challenge - Students will work in collaborative learning teams and utilise the information they have developed over the unit to critically and creatively design and develop a stop motion video that highlights the life cycle of a living thing from the Daintree, including how it depends on other living things and the environment to survive. They will reflect and critique their designs based on agreed criteria that we have developed within the classes.

Students will further develop their capability in critical and creative thinking as they learn to generate and evaluate knowledge, ideas and possibilities relating to their STEM challenge and other investigations and use them when developing and improving upon designed solutions.

Science as a Human Endeavour will be explored through how human influence impacts on the Daintree ecosystem.

Year 6/7 – Ms Marsden, Mrs Dawson & Mr Huff

Our focus for inquiry this term will be exploring how the growth and survival of living things are affected by physical conditions of their environment. In particular, we will investigate organisms that live in extreme environments such as Antarctica or a desert and draw conclusions on how they survive through their physical and behavioural features and the food webs and chains they are an integral part of.

Through research and investigation students will undertake their own inquiry project that explores how rapid changes to our environment could impact on the behavioural and physical features of living things. In essence they will develop a new species that has adapted to meet a range of harsh environments. Students will justify their claims through peer sharing and critically reflecting on the new species they have designed. If time permits, they will attempt to create their species using a 3D design App (Makers Empire).

Science based STEM Challenge - Students will utilise the engineering design process to address the scenario that their animal is critically endangered and they need to develop an enclosure at either Monarto or Adelaide Zoo that will meet all its basic needs in an effort to save the species. Students will justify their claims through peer sharing and critically reflecting on the enclosure they have designed and its suitability to its new enclosure for long term survival.

Feedback and Student Voice - Students will consistently be provided with constructive feedback and will be given opportunities to provide feedback to each other and the teacher. This will be both verbally and in written form. Students will also participate in peer, teacher and self-assessment processes.

Student voice will be evident through such areas as curriculum design, science room values and expectations-development, personal feedback, reflection and STEM challenges.

Science Room Health and Wellbeing - Personal development through exploration and practical application of our school values, the “Play is the Way” program and Growth Mindset principles will be imbedded into our science lessons.

Differentiation – Approaches to teaching and learning will be differentiated to meet the needs of individual learning styles.

