Year 7 Biological Science

2019 Autumn Term

SCIENCE UNDERSTANDING

There are differences within and between groups of organisms; classification helps organise this diversity (ACSSU111)

Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions (ACSSU112)

Elaborations

- considering the reasons for classifying such as identification and communication
- grouping a variety of organisms on the basis of similarities and differences in particular features
- considering how biological classifications have changed over time
- classifying using hierarchical systems such as kingdom, phylum, class, order, family, genus, species
- using scientific conventions for naming species
- using provided keys to identify organisms surveyed in a local habitat
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- using food chains to show feeding relationships in a habitat
- constructing and interpreting food webs to show relationships between organisms in an environment
- classifying organisms of an environment according to their position in a food chain
- recognising the role of microorganisms within food chains and food webs
- investigating the effect of human activity on local habitats, such as deforestation, agriculture or the introduction of new species
- exploring how living things can cause changes to their environment and impact other living things, such as the effect of cane toads
- researching specific examples of human activity, such as the use of fire by traditional Aboriginal people and the effects of palm oil harvesting in Sumatra and Borneo

WEEK	ASSESSMENT	WEIGHTING
1	Education Perfect Summary: Living & non-living	2%
3	Research Project: Animal Profile	10%
6	Learning Checkpoints: Quiz	3%
10	Topic Test	10%

TEACHER INFORMATION

- ItunesU course code = FJJ-PPX-WRJ

extension Activities: as described in ItunesU course

- STILE: Classification, Food chains & food webs units
- Education perfect links in iTunes U

Week	Content	Success Criteria Students will be able to:	Activity Suggestions	Assessments/Notes
1 **4 lessons**	**Hook Lesson from STILE:** Why do zebras have stripes? **Living things** • What is an organism? • Is it living, non living or dead? • -MRS GREN = Needs of living things • Unicellular vs Multicellular • Compare & contrast activity **Why do we classify?** **What is Taxonomy?** • Changing Classification systems • Carolus Linnaeus 'Father of Taxonomy • Timeline of taxonomy	• Examine a new theory as to why zebras have stripes • Identify prior knowledge of living things • • Create a poster displaying 5 living organisms in your local area (HW activity over the weekend. Students can take photos) • Ext Activity :Name/identify the organisms • Give examples of living, non-living and dead • State the 7 principles of Mrs GREN • Compare & contrast between Unicellular & Multicellular • Define classification & taxonomy • Explain why classification is important • Explain who Carolus Linnaeus was and his impact on science	STILE > Classification > Introduction lesson Living, non-living or dead investigation iTunes U or STILE lesson 1.1 living or non-living? -Mrs Gren Kahoot Classify items in the pencil case (itunesU activity) or STILE lesson 1.2 Why do we classify?	Formative assessment from STILE Education Perfect Summary *Science> science yr 7>biological science>classification>2. Living or nonliving> 2.1 living or non living*
2 **2 lessons**	**Scientific Spells** • Words in science- common prefixes in science • Taxonomic Rank: The order of the groupings kingdom, phylum, class, order, family, genus and species • Mnemonic	• use common prefixes in science • list the categories in the taxonomic rank • create a mnemonic to remember the order • use their understanding of classification to analyze the similarities between different species	STILE lesson 1.3 levels of classification	

Week	Content	Success Criteria :Students will be able to:	Activity Suggestions	Assessments/Notes
3 **4 lessons**	**The Five Kingdoms** • Five-kingdom system of classification • Classification systems still changing? • Focus on animals in the phylum Chordata are divided into five classes on the next lower level of classification. • **Binomial Nomenclature** Rules for writing a scientific name **Research Project: Animal Profile (2 lessons in class)**	• understand that organisms are classified into different kingdoms • use their understanding of classification to analyze the similarities between different species • determine the scientific names for a range of organisms • examine Latin and Greek root words and how they are used in scientific names • imagine they have discovered a new species and create a scientific name for it • reflect on their learning by completing the Headlines Visible Thinking routine. • Create a social media profile for an animal that describes how it is classified	STILE lesson 1.3 levels of classification Q 13-18 STILE lesson 1.4 Scientific names *<u>Rules for writing scientific names</u> the species name is made up of the genus name as the first word and the descriptive or specific name as the second word. The genus name begins with a capital letter and lower case is used for the descriptive name. If handwritten, the species name should be underlined; if typed, it should be in italics.* *Apply the above language conventions to classification of living things*	Research Project: Animal Profile (see STILE 1.5 for lesson- need to change lesson to assessed)
4 **4 lessons**	**Dichotomous Keys** • It is better to use the presence or absence of structural features or differences in these features rather than size, colour, behaviour and habitat. • They can be presented as branching keys or tabular keys.	• watch a short video about dichotomous keys in table format • state that a dichotomous key provides choice at each branch (dichotomous = 'cutting in two'). • use table and flow chart dichotomous keys to identify a range of characters and organisms • make a simple dichotomous key to sort pieces of lab equipment • create a dichotomous key for a particular group of objects • reflect on their learning by completing the Connect, Extend, Challenge Visible Thinking routine	STILE lesson 2.1 Using dichotomous keys extra activities in iTunes U STILE lesson 2.2 Create a dichotomous key	

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5 **4 lessons**	**Ecosystems** What is an ecosystem? **Biotic & Abiotic Factors** What are biotic/abiotic factors Vocab: population; communities; habitat **Hook Lesson from STILE:** Why do cats' eyes have slit-shaped pupils?	• explain what an ecosystem is and give examples • List biotic and abiotic factors in an ecosystem	iTunes U activities • ecosystem at school • ecosystem collage Education Perfect activities as described in iTunes U STILE Food Chains and Food webs unit: introduction lesson	
6 **1 lesson**	**Predators, prey, consumers and producers**	• define the terms, predators, prey, consumers and producers and give examples •	Education perfect task - Producers and consumers	Learning Checkpoint: Quiz
7/8 **4 lessons** **7/8 Data Due Wed** (these lessons may run into wk 8)	**Food Chains** • energy needs of living things • roles in food chains: producers, consumers, decomposers and detritivores • Trophic levels **Decomposers** • decomposers and detritivores **Food Webs**	• brainstorm the energy needs of living things • watch a short video about energy flow in food chains • complete questions to show understanding of energy flow • interpret and draw simple food chains • identify different roles in food chains, including producers, consumers, decomposers and detritivores • watch a video that compares food webs and food chains • construct a simple food web from food chains • identify the different roles that organisms can play within a food web • reflect on their learning by completing the Connect, Extend, Challenge Visible Thinking routine	STILE Food Chains and Food webs unit: lesson 1.1 Food Chains extra activities in iTunes U STILE Food Chains and Food webs unit: lesson 1.2 Food Webs q 1-11 extra activities in iTunes U	

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8/9 **4 lessons** (these lessons may run into wk 9)	**Unbalanced Ecosystems** • Disrupted food webs • Upsetting the balance explain the effect of human activity and other living things on local ecosystems • Modelling a food web	• explore the impact of removing an organism from an ecosystem • use an interactive to create and maintain an Australian desert ecosystem • identify the different roles organisms play within the ecosystem • create a food web to summarize their findings • model a food web in a reef ecosystem • examine the impact when a link in the food web is broken	Finding Nemo clip (itunes U) STILE Food Chains and Food webs unit: lesson 1.2 Food Webs: Disrupted food webs q 12-21 STILE Food Chains and Food webs unit: lesson 1.3 Feed the dingo STILE Food Chains and Food webs unit: lesson 1.4 Modelling a food web Extension activities in iTunes U	Link to food web cards https://cewaedu-my.sharepoint.com/:b:/g/personal/clare_rosman_cewa_edu_au/EZfIRoAlIZBBhG0cVmrQPQkBDcmNe8WeREBDJ8NpCxhXAg?e=cA8Tyy
9 **4 lessons**	**Strange relationships** Predation, parasitism, mutualism, commensalism •	• identify the different types of interdependent relationships. • give examples of these relationships	iTunes U	
10 **3 lessons**	**Catchup, Revision, Test**			