

Date	Class 5th and 6th	Subject Science
<b>Strand</b> Living Things		<b>Strand Unit</b> Plant & Animal Life
<b>Title</b> Creature feature and chemosynthesis - the hydrothermal vent ecosystem		
<b>Objective(s)</b> This lesson provides students with an introduction to the process of life learning about photosynthesis and chemosynthesis. It also introduces students to the hydrothermal vent ecosystem deep under the ocean. Students will also learn about some of the unusual creatures that inhabit this extreme environment highlighting the variety and characteristics of living things at the bottom of the ocean.		
<b>Skills Required</b> Listening and understanding, observation, interpretation, drawing, analyses, recording and communicating.		
<b>Learning Objectives</b> Students will be able to: <ul style="list-style-type: none"> <li>• Understand the basic process of chemosynthesis through analyses and comparison to photosynthesis</li> <li>• Understand the importance of chemosynthesis in sustaining life in the hydrothermal vent ecosystems through the introduction of unique creatures that live there</li> <li>• Recognise and identify some of the creatures that make the vents their home</li> <li>• Interpret scientific fact through observation and drawing.</li> </ul>	<b>Learning Activities</b> <b>Preparation</b> See the recommended lesson plan schedule that supports the module: Build Your Own Unknown.  It is recommended that this lesson is undertaken after the Explorer's Geography Lesson Plan: The Deep Unknown: Discover the Mid Atlantic Ridge and Hydrothermal Vents.  Explorers Teachers' Presentation - Science: Creature Features and Chemosynthesis - A simple presentation about life in the vents.  <b>Concept Mapping</b> Begin by asking students to create a concept map by selecting words they are familiar with that relate to the topic. <ul style="list-style-type: none"> <li>• What do they know about photosynthesis?</li> <li>• What do they know about chemosynthesis?</li> <li>• What do they know about how life survives on the planet?</li> <li>• How do they think life might survive in the deepest parts of the ocean?</li> <li>• What do they think lives there?</li> <li>• What size do they think the animals might be?</li> <li>• What type of conditions would the animals have to survive in, that live near hydrothermal vents?</li> </ul>	



	<p><b>Teacher Directed Approach</b></p> <p>It is helpful to reference photosynthesis and draw comparisons between photosynthesis and chemosynthesis.</p> <p>Refer to the simple PowerPoint presentation designed to accompany this lesson plan: <i>CREATURE FEATURES AND CHEMOSYNTHESIS: a simple presentation about life in the vents.</i></p> <ul style="list-style-type: none"> <li>• <i>What is <b>CHEMOSYNTHESIS?</b></i></li> <li>• Identify the different types of animals that have been discovered living near hydrothermal vents.</li> </ul> <p><b>Group Work</b></p> <p>Working in project groups, ask the students to ‘visually interpret’ the creatures through drawing.</p> <p>Each group might be assigned an animal. Further images of the animals can be sourced through an internet search on a smart device e.g. look up footage of animals that live near hydrothermal vents.</p> <p>Consider how these animals that live in extreme conditions at the bottom of the ocean might evolve to become characters in the storyboard.</p> <ul style="list-style-type: none"> <li>• What unique features will they have – are they friend or foe / scavengers or hunters?</li> <li>• How will they contribute to the overall development of the story?</li> <li>• What type of voices / sounds will they have?</li> </ul> <p><b>Concept Mapping Evaluation</b></p> <p>Students complete the concept map at the end of the lesson plan. This can be used as an indication of whether or not they have altered or changed their ideas and whether anything has been learnt or understood.</p> <hr/> <p><b>Resources</b></p> <ul style="list-style-type: none"> <li>• Smart devices</li> <li>• Paper and drawing materials</li> <li>• Explorers Teachers’ Presentation - Science: Creature Features and Chemosynthesis - A simple presentation about life in the vents.</li> </ul>
<b>Differentiation</b>	



Differentiate group activities and roles to account of individual needs, by support, task. Mixed ability pairing.

**Assessment**

Higher and lower order questioning. Concept mapping.

**Linkage and Integration**

Drama - Exploring and making drama, character building; role play

English - Storyboarding – competence and confidence in using language

Geography - Natural Environment - physical features of the Earth.