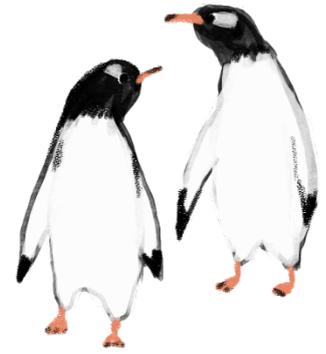


# Teaching the Language of Climate Change Science



## TEXT ANALYSES: CHAPTER 5 YEARS 1-2

Teachers of Year 1 and 2 students: all the language resources included in the text analyses provided here are *not* intended for you to explicitly teach in the class. We've included them so that you can see that the language we've chosen for texts is intentional and carefully selected: to gradually apprentice students into the world and language of science.

### Focus text: Habitats and their organisms (p 45)

Structure	Text	Language resources
Heading General definition Types of habitats Role of organisms	<p><b>What is a habitat?</b></p> <p>A habitat is a place where an organism makes its home and where its needs are met. There are land habitats and water habitats. Each animal and plant plays a part in keeping its own habitat healthy.</p>	<p>Headings framed as questions invite the reader to find the answer.                      'habitat' is a technical term</p> <p>Definitions usually have the thing, 'a habitat', on one side of 'is', and the definition, a big noun group on the other side: 'a place where an organism...'.                      'plays' is a singular verb form because it agrees with 'each', which can be read as each one, or each individual.</p>
Heading: habitats at specific place Types of habitat	<p><b>The habitats and organisms in Felixstow Reserve</b></p> <p>At Felixstow Reserve, the habitats are gardens, wetlands, river, and rocks.</p>	<p>'Where' phrase at front of sentence foregrounds the place before listing the habitats.                      Comma separates each item in the list, including before 'and'. (Otherwise the reader might think 'river and rocks' is one habitat.</p>
Table: list of habitats and organisms	<p><b>Table 5.1</b> Habitats at Felixstow Reserve</p>	<p>Table: Listing specific animals and plants in certain habitats puts the text inside the discourse of science.</p>
<p><b>Heading:</b> Chosen organism  <b>Classification</b></p> <p><b>Appearance</b></p> <p><b>How their needs are met:</b> food, water, shelter</p>	<p><b>Slaters and their needs</b></p> <p>Slaters are organisms found in the garden. They are the only land-living crustaceans, and need a moist habitat. Slaters are oval-shaped, dark grey, and 6-12mm long. They get food and water from leaf litter, and shelter by hiding under mulch and logs.</p>	<p>Another definition: thing on one side of 'is', and expanded noun group on the other.</p> <p>Technical terms throughout, e.g. crustaceans. Specific, scientific adjectives: oval-shaped, 6-12 mm long.</p> <p>Sentences elaborated with 'where' and 'how' phrases to add info on how needs are met.</p>

<p><b>Reproduction</b></p> <p>(These are typical headings for an information report on an organism. Others are 'Behaviours', 'Diet' and 'Hunting')</p>	<p>When the habitat meets their needs, female slaters make eggs which they keep in a pouch on their bodies until they hatch. If it is too dry, they will not reproduce.</p>	<p>'When' clause begins the sentence because the timing is important and is foregrounded. Expanded noun group: 'eggs which....until they hatch' condenses info into one sentence.</p> <p>'If' clause, also foregrounded at front of sentence, is clause of condition: the conditions in which reproduction will fail.</p>
<p><b>Explanation of diagram</b></p> <p>organism 1-organism 2</p> <p>organism 2-organism 1</p> <p>organism 1-organism 3</p> <p>organism 3-organism 2</p>	<p><b>How slaters, plants and ducks help each other</b></p> <p>Plants help slaters by giving them food and shelter. Slaters help plants in their habitat by eating decaying matter and putting nutrients back into the soil. Slaters are also food for ducks. When ducks eat slaters, their poo gives nutrients for plants.</p>	<p>Complex sentences expanded with 'by..' to tell us 'how'. These additional clauses match to the heading 'How..'</p> <p>Technical terms: 'decaying matter'; 'nutrients'.</p> <p>When' clause of time foregrounded at the front of sentence (but also implies 'how'. (You could consider substituting 'poo' for something more technical!))</p>
<p><b>Diagram:</b> symbiotic relationship between three organisms. Summarises previous paragraph in diagrammatic form</p>	<p><b>Figure 5.1 How organisms help each other</b></p>	<p>Each two-way arrow represents two sentences from the previous paragraph, and is accompanied by an abbreviated text in note form to elaborate on the arrow.</p>
<p><b>Heading: role of humans</b></p> <p>How humans help specific organism</p>	<p><b>How humans can help</b></p> <p>Humans can help slaters by providing moist mulch, logs and leaf litter for shelter and food.</p>	<p>'Humans' is a more general than 'we' and more technical than 'people'. It is 3<sup>rd</sup> person, not 1<sup>st</sup> person (i.e., we) as a shift from the personal to the general. The verb 'can help' is an example of modality: expresses possible actions and implies choice.</p> <p>'by providing' is the present continuous verb form to explain 'how'.</p> <p>Expanded noun group; moist mulch... includes purpose 'for shelter and food'</p>

## Focus text: Materials and their uses (p 51)

Structure	Text	Language resources
<p><b>Heading</b> (materials) <b>Definition of materials</b> Elaboration: properties</p>	<p><b>What are materials?</b> Materials are any stuff that takes up space. They have properties that make them useful for humans. Table 5.3 lists which objects in our classroom could be made of what materials.</p>	<p>Definition: ‘materials’ on one side of ‘is’ and expanded noun group ‘any stuff’...on the other. (The spoken-like word ‘stuff’ is often used: hard to find word that Year 1-2 students will understand.) ‘They’ and ‘them’ refer back to the materials to stick para together. ‘properties’ is a technical term = ‘what they’re made up of’. ‘that make them useful ...’ part of noun group. Only stuff that is useful for humans is called a ‘material’.</p>
<p><b>Headings</b> Examples</p>	<p><b>Table 5.3 Materials in our classroom</b></p>	<p>Only teachable point here is the uncountable nouns in the “Materials’ column: substances can’t be pluralised.</p>
<p><b>Heading</b> (physical changes) <b>Definition of physical changes</b></p> <p><b>Example 1</b> Change and how. Confirmation of material and why</p> <p><b>Example 2</b> Change and how. Confirmation of material and why</p> <p><b>Example 3</b> Change and how. Confirmation of material and why</p> <p><b>Example 4</b> Change and how. Confirmation of material and why</p>	<p><b>Physical changes in materials</b> Materials can undergo physical changes. That means they change shape, but are still the same material.</p> <ul style="list-style-type: none"> <li>• Water changes from ice to liquid by melting. It is still water because melting is a physical change.</li> <li>• A balloon (which is made of latex) changes from blown up to bursting. It is still a latex balloon because bursting is a physical change.</li> <li>• Chalk changes from a stick to powder by crushing it. It is still chalk because crushing is a physical change.</li> <li>• Eggshell changes shape when it is broken. It is still eggshell because breaking is a physical change.</li> </ul>	<p>Technical terms: physical, materials, undergo. ‘That means’ signals further elaboration of this definition.</p> <p>Grammatical pattern remains the same in each of these examples, making it easy to improvise in your classroom. In each example: -‘by melting’ and ‘by crushing’ etc are ‘how’ clauses that tell how physical changes happen.</p> <p>-the second sentence begins with ‘It’ refers to the object in the previous sentence eg ‘chalk’, ‘eggshell’.</p> <p>-‘still’ = ‘up to the present time’, ‘even now’</p> <p>-‘because’ is a causal conjunction justifying why the processes of ‘melting’ etc are regarded as physical changes; because no new material is formed.</p>
<p>E.g.: Sequence of physical changes</p>	<p><b>Physical changes when paper is made.</b> Paper comes from trees. To make</p>	<p>‘To make paper’ is a clause of purpose at the front of the sentence. The verbs ‘are cut down’, ‘chipped’ etc are <i>passive</i> verbs, i.e. the ‘doer’ is not stated because it’s not important who is making the</p>

<p>List of physical changes in sequence (a mini-sequential explanation in one paragraph)</p>	<p>paper, trees first have three physical changes. They are cut down, chipped and mixed with water. After boiling, there are some more physical changes. The water is removed, the paper is rolled flat, and is cut into pieces.</p>	<p>physical changes. The process is what's important.  'After boiling': clause of time in theme position.  Lots of 'ellipsis' ie words left out when they're not necessary. 'Trees' is not repeated in each clause, neither is 'paper'.</p>
<p>Heading: how to avoid physical changes  Suggestion  Elaboration (benefit)  Comment</p>	<p><b>How to reduce the use of materials</b>  When paper is recycled, paper is re-used to make new paper, in place of using trees. Each time we re-use or recycle paper, we re-use materials and save trees. That is good for the Earth.</p>	<p>'When paper is recycled' is a dependent clause starting with a time conjunction. Placing this clause at the beginning focusses attention on change of topic to recycling.  'That' is a pronoun (reference item) referring to the reusing, recycling and saving of trees. Pronouns make the paragraph stick together.</p>

## Focus text: All about water (p 55)

Structure	Text	Language resources
<p>Heading: importance of water</p> <p>Topic sentence</p> <p>Tell us more: why</p> <p>Tell us more: dry country</p> <p>Tell us more: why</p>	<p><b>Why water is important</b></p> <p>Water is important for all living things.</p> <p>Without water, living things cannot survive. Australia is a dry country, so we have to make sure we don't waste any water. We have to save water to share it around and for times of drought.</p>	<p>Water is first word in topic sentence. 'all' living things emphasises how important.</p> <p>'Without water' in theme position at front of sentence for emphasis.</p> <p>'so' is conjunction beginning new clause, means 'therefore'.</p> <p>'We': 1<sup>st</sup> person plural, selected so that students own these statements for themselves.</p> <p>Modality is strong throughout: cannot, have to make sure, have to save water</p>
<p>Heading: source of water</p> <p>Oceans</p> <p>Fresh water</p> <p>Desalination</p>	<p><b>Where does water come from?</b></p> <p>Most water on Earth is in the oceans and it is salty. Fresh water comes from the sky as rain, from rivers and lakes, and is stored underground. Sometimes fresh water has to be made from sea water if we run short.</p>	<p>Modality qualifies statements to make them true: 'most water', 'sometimes'.</p> <p>List of 'where' phrases as expected to describe all the places water comes from and where it's stored.</p> <p>Final sentence is complex: 'if' clause explains the conditions under which desalination happen.</p>
<p>Example in one place</p> <p>When rain comes</p> <p>Where it is stored</p> <p>-</p> <p>-</p> <p>-</p> <p>Treatment</p> <p>Energy use and comment</p>	<p>In Adelaide, most of the rain arrives in winter. Some is stored in rainwater tanks in our gardens. Most is stored in reservoirs like the Hope Valley Reservoir.</p> <p>When the water level gets low, water comes in pipes all the way from the Murray River, which is the only big river in our state. After it is treated for dirt and germs, it comes out of taps as clean water. But it takes a lot of energy to make water clean enough to use, so it is important that we don't waste it.</p>	<p>'Where' phrase marks shift from the general 'on Earth' to the specific 'in Adelaide'. More modality to make statements true: 'most of the rain', 'some', 'most'.</p> <p>Expanded noun groups to condense meanings 'reservoirs like the Hope Valley Reservoir', 'the Murray River, which.... Throughout this text, verbs in passive voice 'is stored', 'is treated', (with the 'doer' absent) are used because the doer is not important.</p> <p>Little sequential explanation here: when the water level gets low... After it is treated....</p> <p>Final complex sentence: 'But' marks disruption or contrast; 'to make...' purpose; 'so...' means 'therefore'.</p>
<p>Question as heading</p> <p>Destination 1 (treatment plant)</p> <p>Destination 2 (ocean)</p> <p>OR Destination 2 (irrigation)</p>	<p><b>Where does our water go?</b></p> <p>Wastewater goes down the plug and pipes to a wastewater treatment plant. It takes a lot of energy to filter water so that it is clean enough to go out into the ocean. Recycled water comes in purple pipes for watering farms, gardens and footie ovals.</p>	<p>Some slightly technical language: wastewater, treatment plant, filter.</p> <p>'Where' phrases as expected to answer heading question.</p> <p>Final complex sentence: 'for watering...' is clause of purpose</p>

<p>Question as heading School water sources</p> <p>Taps</p> <p>Water use Home water sources</p> <p>Taps</p> <p>Water use</p>	<p><b>How do we use water?</b></p> <p>In our school our water sources are taps and the rainwater tank. Some taps are connected to hoses, dripper systems and toilet cisterns. We use water for:</p> <ul style="list-style-type: none"> <li>• Drinking etc</li> </ul> <p>In our homes, our water sources are taps. Some taps are connected to hoses, our dripper system, the toilet cistern and the swimming pool. We use water for</p> <ul style="list-style-type: none"> <li>• Drinking etc</li> </ul>	<p>'Where' phrase marks the first site of study 'in our school'.</p> <p>Some slightly technical language: 'water sources', 'dripper systems', toilet cisterns.</p> <p>List of actions are part of complex sentence: 'for...' states purpose.</p> <p>No new language resources here. Reuse of grammatical structures from 'In our school' paragraph.</p>
<p>Ques. as heading Topic sentence signals 2 reasons Reason 1 Tell us more</p> <p>Reason 2 Tell us more</p> <p>How we can save water (List)</p>	<p><b>Why we need to save water</b></p> <p>There are two reasons why we need to save water. Firstly, humans need to share water with all living things. If we use too much water from rivers and reservoirs, trees and animals might suffer, especially in times of drought.</p> <p>Secondly, it takes a lot of energy to get clean water to our homes, and a lot of energy to clean wastewater. Saving water saves energy.</p> <p>We can save water by:</p> <ul style="list-style-type: none"> <li>• Having short showers etc</li> </ul>	<p>Persuasive paragraph: argument for saving water.</p> <p>Firstly, secondly: connectors to stage the argument (and match with 'two reasons' in topic sentence)</p> <p>Modality is mostly strong: 'Need to save...', 'saves energy, 'can save'' BUT 'might suffer'.</p> <p>'If...' is dependent clause: states the conditions of suffering.</p> <p>As in previous paragraph, list completes a complex sentence: by... is clause of manner (i.e. how...).</p>