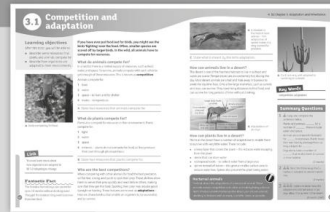


3.1 Competition and adaptation

● B2 Chapter 3: Adaptation and inheritance

Biology NC link:

- the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection.



Summary Questions	<p>1 compete, resources, mates, light, adaptations (5 marks)</p> <p>2 Any three from: waxy layer, spines instead of leaves, large root system, stems which can store water.</p> <p>3 6 mark question. Example answers: Concentrated urine and dry feces so little water is lost through excretion. Large body so the surface area is relatively small to reduce risk of overheating. Moves at night to feed to avoid extreme daytime temperatures. Does not sweat to avoid water loss through this mechanism. Stands in breezes at the top of sand dunes to help cool its body. Wide feet to avoid the oryx sinking into soft sand.</p>
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Band	Outcome	Checkpoint	
		Question	Activity
Developing	State some resources that plants and animals compete for (Level 3).	A, B, 1	Starter 1, Main, Plenary 1, Homework
	State what is meant by the term adaptation (Level 4).	C	Lit, Starter 2, Main, Plenary 2, Homework
Secure	Describe some resources that plants and animals compete for (Level 5).	1	Starter 1, Main, Plenary 1, Homework
	Describe how organisms are adapted to their environments (Level 5).	2	Lit, Starter 2, Main, Plenary 2, Homework
Extending	Explain the effect of competition on the individual or the population (Level 7).	1	Main, Plenary 1, Homework
	Explain how adaptations help an organism survive in their environment (Level 7).	2, 3	Lit, Starter 2, Main, Plenary 2, Homework

Literacy

Students present adaptations in a coherent and logical manner, using scientific terminology when explaining the competition of resources and the importance of adaptations to survive.



APP

Students use secondary data provided and present their ideas in an appropriate table (AF3).

Key Words

competition, adaptation

Answers from the student book

In-text questions	<p>A food, water, space, and mates</p> <p>B light, water, space, and minerals</p> <p>C Features that enable an organism to be successful and so survive.</p>
Activity	<p>Nocturnal animals</p> <p>Credit suitable information poster on a nocturnal animal of the student's choice (e.g., owl), and how the animal is adapted for hunting at night.</p> <p>Poster should include features of the animal with special adaptations, explained using as many scientific terms as possible.</p>



Starter	Support/Extension	Resources
<p>Competitions galore (10 min) Ask students to think about as many competitions as they can. Most will talk about competitions in sport, music, or the arts. Steer students towards competition for living organisms to survive. Ask students to pair-share ideas and write these on mini-whiteboards, filtering their lists to those applicable to plants, animals, or both.</p> <p>Something fishy! (10 min) Interactive resource where students link adaptations of a fish with the function of the adaptation that helps it survive.</p>	<p>Support: Allow students to work in small groups</p> <p>Extension: Students give adaptations for another living organism, for example, a camel.</p>	<p>Interactive: Something fishy!</p>
Main	Support/Extension	Resources
<p>Competition and adaptation (35 min) Formally introduce the idea of competition for resources, and the importance of adaptations in different organisms. A good video to show at this stage is 'The Adaptation Song' that can be found on YouTube.</p> <p>Divide the class into small groups of four or five students, and distribute each group with an image of a different organism. Students must use the images to highlight four adaptations of the organism in the table provided on their activity sheet, before answering the questions that follow.</p>	<p>Support: Students should concentrate on two or three adaptations for the image provided.</p>	<p>Activity: Competition and adaptation</p>
Plenary	Support/Extension	Resources
<p>The result of competition (10 min) Give students the hypothetical situation where two wolf packs have moved into the same area of forest. Students pair-share ideas on what the two packs will compete for, and what is likely to happen in terms of outcome for this competition. Finish this activity as a class discussion.</p> <p>Super predators (10 min) Students have five minutes to work in small groups to design the best-adapted predator. This predator can be real or imaginary, but a drawing of this predator must be accompanied by annotations of its adaptations. Students then compare their predator with one another group has designed.</p>	<p>Support: Prompt students to think about a real-life predator, for example, a lion. Students can then transfer adaptations that make a lion successful to a fictional predator.</p>	
Homework		
<p>Students research the adaptations of a squirrel and the population difference between red and grey squirrels. Students should then use what they have learnt this lesson to suggest reasons for their relative population sizes in terms of competition and its effects.</p>		