

## ANSWER GUIDE

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**Term 3, 2021**

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# Part 1: Island life

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Activity title	Answers
Island origins	<div> <div>coral</div> <div>volcanic</div> <div>tidal</div> <div>continental</div> <div>artificial</div> <div>barrier</div> </div> <div> <div>human-made from materials brought from elsewhere</div> <div>narrow and parallel to the mainland, protecting the coastline from direct battering by storm waves and winds</div> <div>formed when coral reefs grow up in thick layers and break the water's surface</div> <div>formed when cooled, hardened magma from underwater volcano eruptions builds up and breaks the water's surface</div> <div>were once joined to a continent but movements of the Earth's crust caused fragments to break off</div> <div>the land connecting it to the mainland is underwater at high tide, but exposed at low tide</div> </div>

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Activity title	Answers
WA's islands	
Isolation over time	endemic: not found anywhere else in the world

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Activity title	Answers																		
Island inhabitants	all correct																		
True or false	<table><tr><th></th><th>True</th><th>False</th></tr><tr><td>bus and bicycle are the main modes of transport as cars are rarely used</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>foxes were introduced here</td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td>visitors can view Osprey nests which are over 70 years old</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>135 species of fish live in the surrounding waters</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>few people live on the island, most workers commute each day from the mainland</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		True	False	bus and bicycle are the main modes of transport as cars are rarely used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	foxes were introduced here	<input type="checkbox"/>	<input checked="" type="checkbox"/>	visitors can view Osprey nests which are over 70 years old	<input checked="" type="checkbox"/>	<input type="checkbox"/>	135 species of fish live in the surrounding waters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	few people live on the island, most workers commute each day from the mainland	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Evaluate	student's own response																		

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Activity title	Answers
Penguin Island: Explore	Penguin Island: tidal
Penguin Island: Explore	student's choice of accurate fact
Seal Island: Explore	endangered species: species of animal or plant that is seriously at risk of extinction
Seal Island: Explore	possible answers: sea lions have an external ear vs seals have an earhole; sea lions can move their hind flippers under their body to 'walk' on land vs seals cannot and scoot on their belly on land; sea lions have a long neck, allowing head to turn vs seals have a short neck with limited head movement; sea lions have larger front flippers without claws or fur vs seals have smaller front flippers with claws and fur.
Investigate	<p>Threats: human disturbance (divers, boat traffic); entanglement in gillnets and debris; climate change affecting their feeding and breeding sites and food supply; pollution – oil spills; historic hunting for oil and fur also drastically reduced the population.</p> <p>What is being done: have been legally protected in WA since 1892; protected under national legislation since 1975; in 2018 WA government established sea lion protection zones around breeding colonies – use of gillnets is prohibited here</p>
Water babies	Possible answers: tracks in the sand, a body pit (indentation in sand in the shape of a turtle), evidence of digging in sand, evidence of disturbed vegetation, a nest mound

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Activity title	Answers
Plenty of pincers	
Aquatic attractions	left to right: MOON WRASSE, ZEBRA SHARK, SPANGLED EMPEROR

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Activity title	Answers
Inland island	Kulijak Island Ron Courtney Island
Creating isolation	Students own response. Most begin 1 metre underground to prevent being dug under, have an overhanging hood at the top to prevent climbing over and the mesh has very small holes to prevent being stretched to a large enough size to fit through.
Island home	Student's own response. Consider how cats are effective hunters and how feral cats have impacted wildlife.
Inselberg 'islands'	Possible answer: different habitat conditions are suitable to different species. Having a variety of habitats (or microhabitats) close together means you can have a wider variety of species in a smaller area.
Build it and they will come	student's own response

## Part 2: Islands under pressure

### PAGE 1

Activity title	Answers
Perilous predators	<div>BOODIE</div> <div>DIBBLER</div> <div>MULGARA</div> <div>WOYLIE</div> <div>HEATH MOUSE</div> <div>CHUDITCH</div>

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Activity title	Answers
Introduced threats	What does 'locally extinct' mean? A species is no longer found in an area it once inhabited, but is still found elsewhere in the world.
Unwelcome guests	feral cat - 4 goat - 5 weeds - 6 Black Rat - 1 European Fox - 2 rabbit - 3
Local extinction: Explore	White-winged Fairy-wren - Barrow Island Spinifexbird - Mainland Australia (WA, NT, SA, QLD) and many WA islands (Muiron Islands, Peak Island, Serrurier Island, Bessieres Island, Thevenard Island, Doole Island, Roberts Island, Hermite Island (reintroduced), Barrow island, Montebello Islands, Lowendal Islands, Passage Islands, Delambre Island, Dixon Island, West Moore Island, Sandy island, East Moore Island, Depuch Island, Ronsard island, Reef Island, Little Turtle Island)
Local extinction: Explore	Possible answers include: ensure there are no rodents, insects or pests in your boat, check your clothing, footwear and camping equipment for soil or seeds, check your food is free of insects and pests, do not bring pets, adhere to Parks and Wildlife Service guidelines
Gone forever	1979 - D 1998 - F 2005 - B 2009 - E 2010 - H 2012 - A 2014 - C 2017 - G

Activity title	Answers
In the poo	<ul style="list-style-type: none"> <li>Land was cleared for <b>construction</b> of buildings, jetties and tramlines.</li> <li>Feral <b>cats</b> which were brought by miners to control rat numbers thrived and <b>preyed</b> upon native birds, deterring those which may still have been able breed in the <b>altered</b> habitat.</li> <li>Feed given to horses assisting miners included <b>seeds</b> which lead to exotic plants being introduced.</li> <li>The removal of native <b>vegetation</b> allowed introduced weed species to thrive.</li> <li>Sheep brought as a food source for miners <b>overgrazed</b> vegetation removing cover for nesting birds and causing erosion.</li> </ul>
Garden Island	<ul style="list-style-type: none"> <li>Visitors arrive by private boat only- Reduces the number of visitors as people without their own boat cannot go, no vehicles outside of the naval area.</li> <li>Lighting fires prohibited- Reduced risk of bushfire</li> <li>No animals or plants can be brought- Wildlife safe from introduced diseases and attack by pets, non-native plants and animals will not be introduced</li> <li>All rubbish must be taken home with you- Wildlife safe from accidentally eating rubbish or becoming entangled in it</li> <li>feeding wildlife prohibited- Wildlife safe from eating food that is bad for them or not part of their usual diet, retain their wild behaviours for finding own food and do not become reliant to humans</li> </ul>
True or False	<ol style="list-style-type: none"> <li>1. false</li> <li>2. true</li> <li>3. false</li> <li>4. true</li> </ol>
Island industry: Explore	<p>almost 400 species of plant  13 terrestrial native mammal species  more than 110 bird species  44 terrestrial reptile species  1261 species of terrestrial invertebrates  24 species and subspecies are endemic to Barrow Island</p>
Island industry: Discover	PERENTIE

Activity title	Answers
A 'hot' topic	Climate- any long-term trends in weather over many decades
Changing climate changing islands	<p><b>rising sea levels</b></p> <p><b>stronger storm surges</b></p> <p><b>increased water temperature</b></p> <p><b>increased air temperature</b></p> <p><b>changed fire regimes</b></p> <p><b>sea turtle eggs impacted</b></p> <ul style="list-style-type: none"> <li>warmer sand leads to mostly female hatchlings</li> <li>extreme heat causes eggs not to hatch at all – threatening the species' survival</li> </ul> <p><b>increase in wildfires</b></p> <ul style="list-style-type: none"> <li>islands that don't burn often will end up with larger, more intense burns, causing severe damage</li> <li>can be difficult to put out fires due to remoteness and/or lack of roads</li> <li>destruction of habitat and loss of life</li> </ul> <p><b>flood low-lying islands</b></p> <ul style="list-style-type: none"> <li>some islands will disappear, along with the terrestrial species on them</li> <li>migrating species may lose resting points and would need to find another route</li> </ul> <p><b>slow the growth of coral reefs and lead to coral bleaching</b></p> <ul style="list-style-type: none"> <li>unlikely coral islands will be able to continue growing to keep up with rising sea levels</li> <li>coral reefs will erode, cannot support coral islands</li> <li>fish species lose coral habitat</li> </ul> <p><b>beaches will reduce in size or disappear</b></p> <ul style="list-style-type: none"> <li>loss of breeding sites for sea turtles and seabirds</li> </ul>
Warm women: Evaluate	Possible answer: females need males to breed with to keep the species going. If there are not enough males, the species might become extinct
Warm women: Explore	Loggerhead Green Hawksbill
Vanishing islands: Evaluate	Student's own response
Vanishing islands: Explore	possible answers include: swap some car rides for walking/cycling/scooter, carpool with others going to the same place, turn off lights/heating/cooling/electronics when not in use, turn off appliances at the wall, reduce your use of single use plastics and over packaged products (as the production of these causes emissions), don't run the washing machine/dishwasher until it's full (less cycles needed), reduce your waste – donate, recycle or repurpose what you can to save the resources from being wasted

## Part 3: Island havens

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Activity title	Answers
Extinct on the mainland	<p>3B A N D I C O O T</p> <p>4B N D E D</p> <p>5B O O D I E</p> <p>M A L E</p>

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Activity title	Answers
Move it or lose it: Explore	<p>current population is large enough to be unaffected by removal of some animals</p> <p>is endemic and/or threatened, and establishing other populations is likely to improve conservation status</p> <p>species has been successfully translocated before</p> <p>species is easily monitored in the wild</p> <p>destination located with adequate size and quality habitat, which is absent from threatening processes</p> <p>can gather data on short term and long term success of translocation</p> <p>no point moving animals to an area they are unlikely to survive in</p> <p>taking animals from a small population could cause the current population to die out</p> <p>conditions required for successful translocation are already known</p> <p>there is no point in moving animals when it is not needed, or unlikely to help</p>

















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Activity title	Answers
Move it or lose it: Evaluate	<input checked="" type="checkbox"/> evidence the species previously lived there <input type="checkbox"/> good café close by <input checked="" type="checkbox"/> threatening processes are either not present or adequately managed <input checked="" type="checkbox"/> site has suitable areas of habitat to support a growing population <input type="checkbox"/> has lots of weeds <input checked="" type="checkbox"/> site is monitored and managed after translocation
Collection methods	<div> <div>  <p><b>A</b></p> <p><b>2</b></p> <p>Spinifexbird</p> </div> <div>  <p><b>B</b></p> <p><b>1</b></p> <p>Boodie</p> </div> </div>
Helping hand (ranking)	Student's own response
Helping hand	Possible answers include: volunteers feel like they are 'doing good', learn more about a topic that interests them, make new friends, find people with similar interests, develop new skills...

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Activity title	Answers
Christmas miracle: Explore	Captive breeding is the process of breeding animals outside of their natural environment, for example in a zoo. Captive breeding programs target specific species and use human intervention as required to ensure breeding is successful.
Christmas miracle: Evaluate	It creates a backup population – if anything happens to the collection on Christmas Island there are some at Taronga Zoo that could continue the breeding program.
WA's largest island	Q1: It was night, because this species is nocturnal Q2: Dark cloth bags used. Keeping the animals contained in a soft, dark space reduces their stress when being transported, and is easy for them to get out of upon release.
Lancelin Island Skink: Explore	Any correct fact. Possible answers: lifespan in the wild is 6-7 years; Perth Zoo has an 18+ year old Lancelin Island Skink named Lance; Critically Endangered due to changes in habitat, and being restricted to only one population; Perth Zoo and Department of Biodiversity Conservation and Attractions were involved in the breeding program...
Lancelin Island Skink: Evaluate	They didn't want to risk getting it wrong after taking Critically Endangered animals from the wild. By practicing with a similar species, they had a head start on knowing what conditions were most likely to result in successful breeding.

Activity title	Answers
Out of the poo	<div>  <b>1</b> White-faced Storm-petrel         </div> <div>  <b>2</b> Pacific Gull         </div> <div>  <b>3</b> Bridled Tern         </div> <div>  <b>4</b> Caspian Tern         </div> <div>  <b>5</b> Silver Gull         </div> <div>  <b>6</b> Fairy Tern         </div> <div>  <b>7</b> Roseate Tern         </div> <div>  <b>8</b> Sooty Tern         </div> <div>  <b>2</b> <i>Larus pacificus</i> </div> <div>  <b>8</b> <i>Onychoprion fuscatus</i> </div> <div>  <b>5</b> <i>Chroicocephalus novaehollandiae</i> </div> <div>  <b>6</b> <i>Sternula nereis</i> </div> <div>  <b>7</b> <i>Sterna dougallii</i> </div> <div>  <b>3</b> <i>Onychoprion anaethetus</i> </div>

Activity title	Answers
Flourishing flora	White-winged Fairy-wren
From island to arid inland	Students' own response. Consider that this leaves a breeding population in a managed area, to top up the wild population outside the fence as needed.