

READING

The platypus (*Ornithorhynchus anatinus*) Reading Passage

The platypus (*Ornithorhynchus anatinus*) is one of the most unusual, unlikely and evolutionary distinct animals alive. According to the BBC, the first time a platypus was brought from Australia to Britain, people believed that a hoodwinker had sewn two animals together and that they were the victims of a hoax. Platypuses are best described as a hotchpotch of more recognizable species such as the duck, beaver or otter. The physical structure, habitat and reproduction system of the platypus makes it an interesting and unique mammal.

Weighing around three pounds, the platypus measures 15 inches (38 cm) from its head to lower back. The tail adds about 5 inches (13 cm). However, the creatures inhabiting colder regions are bigger. The physiology of the platypus is adapted for survival on land as well as in water. The shape of its bill gives it the name duck-billed platypus. This flexible body part is smooth like suede and has receptors for navigation and detection of movements of freely-swimming food, such as shrimp. The eyes and ears located in the grooves behind the bill are covered by folds of skin and a watertight seal that closes the nostrils when it is underwater. Platypuses have thick waterproof fur which allows them to stay warm underwater. Although most of its fur is dark brown, a patch near the eyes and on the underside is of a lighter shade. When on land, the webbing on their feet retracts, making their claws more pronounced and hence, these animals walk awkwardly on their knuckles to protect the web.

Yet another peculiar fact about these animals is that they are one of the very few mammals which are poisonous. Male platypuses have a horny spur on the ankles of their hind feet. It is connected to a venom gland in the upper leg. It releases a poison capable of causing excruciating pain to humans and is also capable of killing other small animals. Fat is stored in the tail.

These mammals inhabit only one small area of the world. Platypuses make their homes in freshwater bodies that flow throughout the eastern and south-eastern coasts of Australia and the island of Tasmania. Though these creatures exist only on one side of one continent, platypuses can be found in various climate extremes such as in lowlands, plateaus, cold mountains and tropical rainforests. Although platypuses spend a lot of time in the water, they waddle onto the riverbanks to claw through the mud using their nails and feet to make burrows which are tunnels with chambers or rooms. They can also reside under debris, rock ledges or roots.

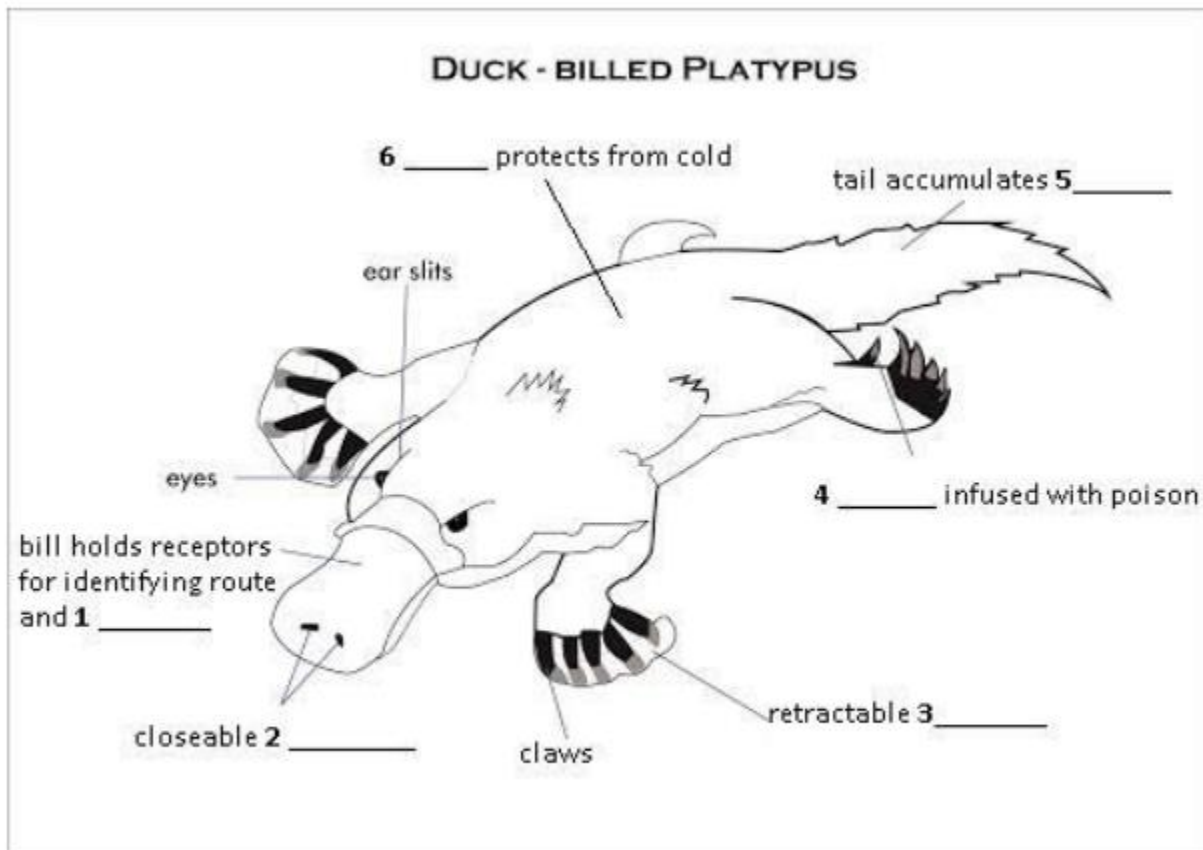
Platypuses are nocturnal and hence are most actively hunting during the night which can last for about 10 to 12 hours. Hunting for food takes place under the water. As they swim, they try to detect food such as insects, larvae, worms or shellfish along the muddy bottom of the water body. They scoop the prey in their bills, store it in cheek pouches and swim to the surface. Because they do not have teeth but grinding plates, they use the gravel and dirt that they scooped up to fragment their food into digestible portions.

The platypus is listed as a species of 'least concern' by the International Union for Conservation of Nature (IUCN). However, being a carnivore, its role as that of controlling the population of species in the lower level of the food chain cannot be ignored. The biggest threats include natural predators such as snakes, water rats and goannas, and some introduced animals such as foxes, dogs and cats. Human activities such as land clearing and dams are the biggest threat to the loss of habitat. However, platypuses have been able to evade most of the human intrusion of their natural environment.

Questions 1-6

Label the diagram below.

Write ONE WORD ONLY from the passage for each answer.



How Does Night Vision Work Reading Passage

Night vision technology has transformed from old-fashioned bulky devices to compact sophisticated equipment that can intensify any light source up to 50,000 times. A device for night vision was first developed in the 1930s by the German military, and later by the Americans. Today, it has become an essential device in the kit of soldiers, permitting them to find out their targets in reduced visibility or complete darkness and move around in comparative safety as there are fewer chances of a surprise attack. 'It improves their mobility, their survivability and their lethality', says Lt. Col. Timothy Fuller.

So, what makes night vision possible? Light is an electromagnetic wave, and the entire range of light that exists is termed as the electromagnetic spectrum. The light visible to humans is only a part of this spectrum, while infrared light and ultraviolet light are invisible to naked eyes. The night vision devices work on two different technologies. The first is image enhancement using the tiny amount of light available which is collected and amplified to the extent that we can easily see the image. Thermal imaging, on the other hand, functions by capturing the higher areas of the infrared spectrum, which is radiated by objects as heat instead of light.

Even on dark nights, the stars and the moon emit near-infrared light. In a device that works on image enhancement technique, this faint light is captured to amplify it to a visible level. As the light consisting of photons enters the front lens of the image intensifier tube, it hits a photocathode which converts the photons into electrons. These electrons multiply as they pass through a thin microchannel plate. At the end of the tube, the electrons strike a phosphor screen which converts them back into photons and creates an image, usually green, on the screen. Since more photons are emerging than those which entered the tube, the image is much brighter than the original scene. Rich Urich, director of operations at Night Vision Equipment Company in Prescott Valley

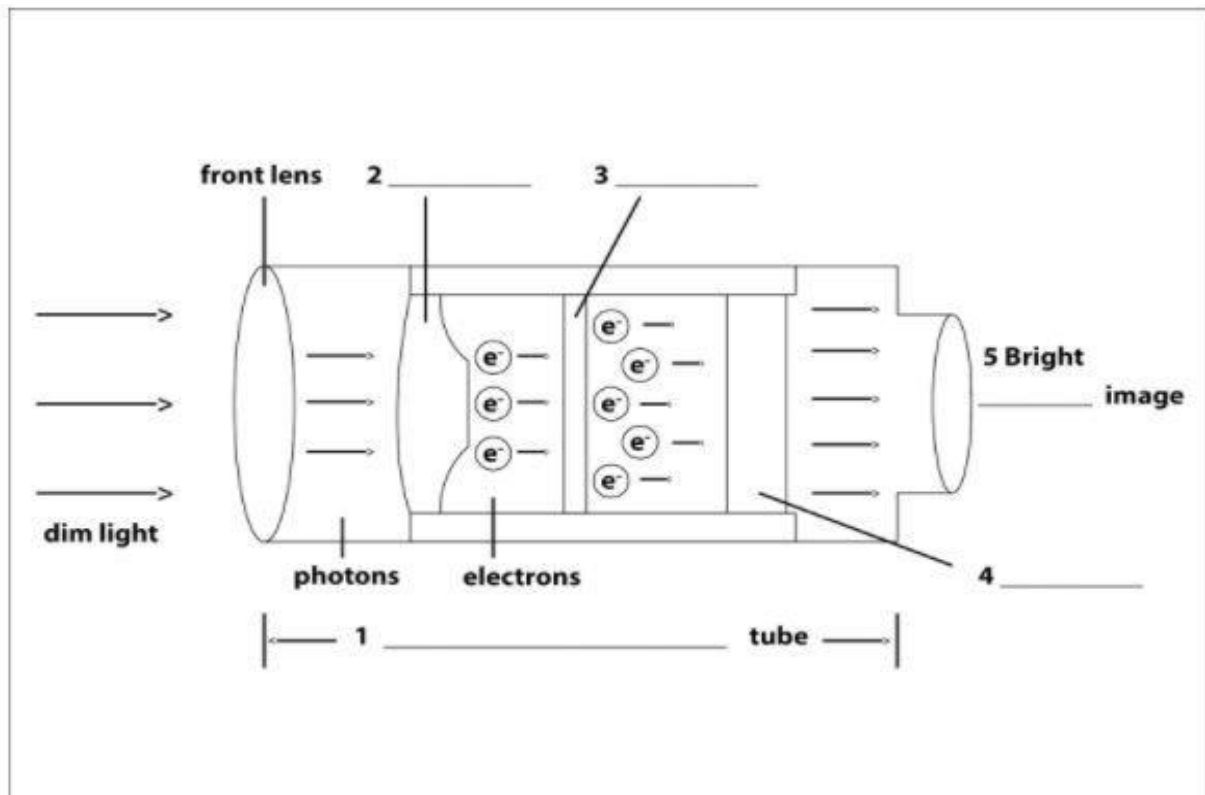
Arizona, says, 'The reason it is green is because when you put the unit down, you want your eyes to remain dilated so you can see in dim light.'

Thermal imaging devices record the temperature difference between an object and its surroundings using a sensor called a microbolometer. An image of the object is created, which is then sent to the display where the user can see it. However, it is not only in warfare that this technology finds use. Night vision equipment is used extensively by law enforcement departments to detect criminals in the dark. They are also used on borders to keep a check on illegal crossings. The technology is also used to find leaks and repair insulation in homes.

Questions 1-5

Label the diagram below.

Write NO MORE THAN TWO WORDS from the passage for each answer.



LISTENING

PART 3

Questions 21-26

Choose the correct letter, A, B or C.

Work experience for veterinary science students

- 21 What problem did both Diana and Tim have when arranging their work experience?
- A make initial contact with suitable farms
 - B organising transport to and from the farm
 - C finding a placement for the required length of time
- 22 Tim was pleased to be able to help
- A a lamb that had a broken leg.
 - B a sheep that was having difficult giving birth.
 - C a newly born lamb that was having trouble feeding.
- 23 Diana says the sheep on her farm
- A were of various different varieties.
 - B were mainly reared for their meat.
 - C had better quality wool than sheep on the hills.
- 24 What did the students learn about adding supplements to chicken feed?
- A These should only be given if specially needed.
 - B It is worth paying extra for the most effective ones.
 - C The amount given at one time should be limited.
- 25 What happened when Diana was working with dairy cows?
- A She identified some cows incorrectly.
 - B She accidentally threw some milk away.
 - C She made a mistake when storing milk.
- 26 What did both farmers mention about vets and farming?
- A Vets are failing to cope with some aspects of animal health.
 - B There needs to be a fundamental change in the training of vets.
 - C Some jobs could be done by the farmer rather than by a vet.

Questions 28-30

Choose the correct letter, A, B or C.

28 The students think the story of *Romeo and Juliet* is still relevant for young people today because

- A** it illustrates how easily conflict can start.
- B** it deals with problems that families experience.
- C** it teaches them about relationships.

29 The students found watching *Romeo and Juliet* in another language

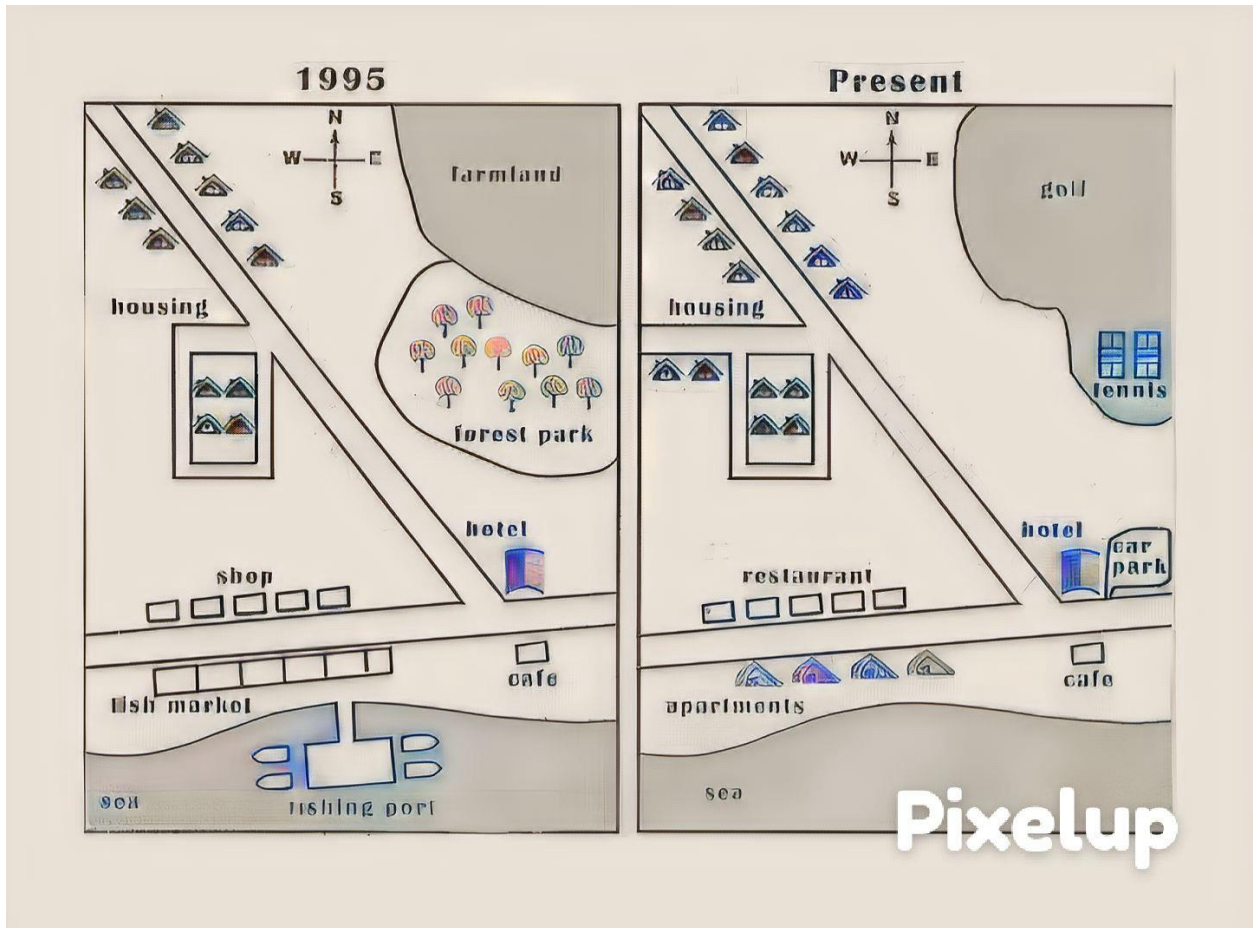
- A** frustrating.
- B** demanding.
- C** moving.

30 Why do the students think Shakespeare's plays have such international appeal?

- A** The stories are exciting.
- B** There are recognisable characters.
- C** They can be interpreted in many ways.

Task – 1

The map below shows the development of the village of Ryemouth between 1995 and present.



Please write your **full name** in CAPITAL letters on the line below:

Please write your Candidate number on the line below:

Please write your three digit language code in the boxes and shade the numbers in the grid on the right.



<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Are you: Female? Male?

Reading Reading Reading Reading Reading Reading

Module taken (shade one box): Academic General Training

	Marker use only		Marker use only
1	✓ 1 x <input type="checkbox"/> <input type="checkbox"/>	21	✓ 21 x <input type="checkbox"/> <input type="checkbox"/>
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10	✓ 10 x <input type="checkbox"/> <input type="checkbox"/>	30	✓ 30 x <input type="checkbox"/> <input type="checkbox"/>
11	✓ 11 x <input type="checkbox"/> <input type="checkbox"/>	31	✓ 31 x <input type="checkbox"/> <input type="checkbox"/>
12	✓ 12 x <input type="checkbox"/> <input type="checkbox"/>	32	✓ 32 x <input type="checkbox"/> <input type="checkbox"/>
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Marker 2 Initials

Marker 1 Initials

Band Score

Reading Total

