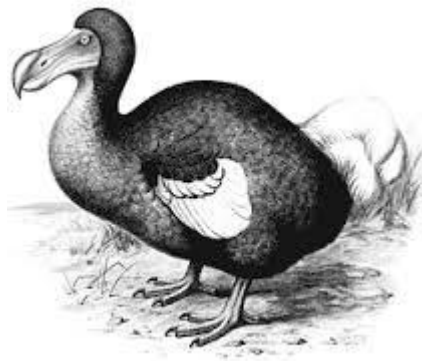


PISA Style Scientific Literacy Question

Dodo

The dodo was a large bird, roughly the size of a swan. It has been described as heavily built or even fat. It was flightless, but is believed to have been able to run quite fast. The dodo is thought to have had a large beak and brown feathers, and to have eaten fruit and seeds. The dodo lived on the island of Mauritius in the Indian Ocean. Its existence was first documented by Dutch sailors in the 16th century. When the sailors arrived on Mauritius, which had previously been uninhabited, they found the dodo to be fearless of them. The dodos were easy to catch because they were not afraid of humans and they all lived together in one small heavily wooded area of the island. The sailors ate the dodo after stewing it for long time, although most accounts say that it did not taste very nice. The sailors also brought along their own animals including dogs, cats, pigs and rats. These animals ate the eggs and young of the dodo. The sailors cleared large areas of the forest to obtain wood. Within 80 years of the dodo first being discovered, the bird was extinct.



Question 1 : DODO

Why may dodos have become extinct? There are a number of different theories.

Circle 'yes' or no to each of these statements.

Is there information in the passage that supports this idea?	Yes or No?
The dodos were hunted by humans	Yes / No
New species introduced by humans became their predators	Yes / No
Deforestation took away their habitat	Yes / No
Climate change caused the sea levels in the Indian Ocean to rise and cover parts of the island.	Yes / No

Question 2 : DODO

There are no photographs or complete specimens of the dodo.

Which **two** of the following pieces of evidence will give us the most reliable information about what it was actually like?

- A Drawings and paintings done by the sailors
- B Written accounts by the sailors
- C Fossil evidence from the swamps of Mauritius
- D Stories about the dodo that have been passed from generation to generation
- E DNA extracted from a preserved dodo skeleton

Question 3 : DODO

The passage says that dodos were fearless of humans. Which of these statements is the most likely reason for this ?

- A The dodos had encountered 'friendly' humans before
- B Dodos had no animal predators on the island so they were not used to being hunted
- C Dodos had brown feathers to camouflage them from humans in the woods
- D Dodos were stupid birds of low intelligence

SCORING : DODO

Question 1 : DODO

Full credit :

All correct : Yes, Yes, Yes, No, in that order

No credit :

Other responses

Missing

Narrative

Yes – The passage says that the dodo were easy to catch. This implies that the humans were catching or hunting the dodo. The passage also says that humans cooked and ate the dodo. The passage does not actually say explicitly that humans hunted the dodo but the passage says enough for this to be a possible theory for their demise.

Yes – The passage says that the animals introduced by the Dutch sailors ate their eggs and their young. This makes it clear that these animals were predators of the dodo.

Yes – The passage says ‘the sailors cleared large areas of the forest to obtain wood’. Students should link chopping down wood to the word deforestation. The passage says that the dodo lived in a heavily wooded area of the island. If this wooded area was removed they would no longer have this habitat to live in.

No – There is no reference in the text to climate change or rising sea levels. There is nothing to suggest in the passage that that climate change was happening in the 16th century.

Framework Categories	2015 Framework
Knowledge Type	Knowledge of the content of science
Competency	Explain phenomena scientifically
Context	Natural resources – global
Cognitive demand	Low / medium

Question 2 : DODO

Full credit :

C Fossil evidence from the swamps of Mauritius

E DNA extracted from a preserved dodo skeleton

Partial credit :

One from C Fossil evidence from the swamps of Mauritius **or** E DNA extracted from a preserved dodo skeleton (one correct statement- not both)

No credit :

Other responses

Missing

Narrative

This question is focussing on the reliability of the information that is gained from each of the sources stated, not how much information we can gain.

Pictures and drawings will give us a good idea of what the dodo looked like , but a lot would depend on the skill of the artist as to how true the likeness was. Paintings vary greatly in size so it might be difficult to conclude how big the dodo was from these. Paintings may also vary a lot from one another depending on who painted them. Although paintings can give us some useful information about the dodo it may not be very reliable.

Written accounts may describe the dodo in detail, and give us quite a bit of information about the dodo, but again this may be subjective according to who wrote the account. Written accounts leave it to the imagination of the reader to create an image of what the dodo would have looked like.

Fossil evidence gives us reliable information about the dodo, especially it's size and shape. It will not necessarily tell us a lot of information especially about what the dodo looked like, but the information it does give us will be reliable, because it is has come directly from the creature itself.

Stories may also give us quite a bit of information, but again the stories will vary greatly according to who told them. Also, as stories are passed from person to person the information can be changed, so as time goes on it will become less reliable.

DNA evidence will be reliable as it has come directly from the original creature. DNA can give us lots of information about the characteristics of the dodo, and its relationship to other birds.

Framework Categories	2015 Framework
Knowledge Type	Procedural / Epistemic
Competency	Explain phenomena scientifically
Context	Natural resources – global
Cognitive demand	Medium

Question 3 : DODO

Full credit :

B Dodos had no animal predators on the island so they were not used to being hunted

No credit :

Other responses

Missing

Narrative

The passage suggests that the island was previously uninhabited and that the Dutch sailors were the first humans to encounter the dodo. Therefore, it is unlikely that they had encountered humans before and had been tamed by them. This could have happened, but there is no evidence in the passage to support this.

B is the most likely reason. The environment that the dodo inhabited on Mauritius did not have any significant predators until the humans and their animals arrived, so it is likely that the dodo had lived in relative safety until then. The dodo would not have seen the humans as a threat if they had previously existed without being hunted.

The brown feathers of the dodo may have helped to camouflage it in the woods but the passage tells us that they dodo did not try to hide from the humans in the woods and were fearless and actually approached the humans. The brown feathers would only help to camouflage it if the dodo stayed in the woods out of sight of the humans. The passage also tells us that the dodo did not have any significant predators prior to the humans arriving, so they would not have learned to use their feathers to help them hide.

Several accounts suggest that dodos were stupid birds, but this does not really give a scientific explanation for why they were fearless of humans. In fact, humans may have thought that they dodos were stupid *because* they seemed to be fearless.

Framework Categories	2015 Framework
Knowledge Type	Knowledge of the content of science
Competency	Explain phenomena scientifically
Context	Natural resources – global
Cognitive demand	Low /medium