The Three-Second Goldfish: Fact or Fiction?

Educational reading passage. Named speakers and quotations are fictional illustrations.

[1] "You have the memory of a goldfish!" If someone says this to you, it is not a compliment. For many years, people have believed that a goldfish can remember things for only three seconds. According to this popular idea, a fish swimming round its bowl finds every plant and pebble brand new each time it passes them, so it never gets bored. It is a charming story, but is it true?

[2] Scientists who study animal behaviour have tested this belief many times, and the results have been astonishing. Imagine an experiment in which researchers play a short sound every time they fed a group of goldfish. After a few weeks, suppose the fish gather at the feeding spot as soon as they hear the sound, even when no food appears. Suppose they still respond when tested again after the training has ended. Such a result would show that they remember the link between the sound and food for longer than three seconds.

[3] Other studies have shown that goldfish can be trained to push a small lever, swim through a simple maze, or tell the difference between colours. Some fish have even learned to respond only at a particular time of day, which suggests that they also have a sense of routine. A creature that forgot everything after three seconds could never manage any of **this**. These learning abilities show that the three-second claim is wrong.

[4] So where did the idea come from? Nobody knows for certain, but one explanation is that people simply looked at the tiny fish and assumed that a small brain must be a weak one. Another is that the idea made owners feel less guilty about keeping a lively animal in a small, empty bowl. If the fish could not remember yesterday, the owners reasoned, it could not feel lonely or bored.

[5] Unfortunately, this belief has done real harm, because people who think goldfish are simple often keep them in containers that are far too small. A goldfish can grow much larger than most people expect, and it needs clean water, space and things to explore. Pet experts say that a fish kept in a dull bowl may become stressed and unwell, even if it is fed every day.

[6] Peter Smith, who has kept fish for most of his life, agrees. "My goldfish recognise me," he says. "When I walk into the room, they swim to the front of the tank. When a stranger comes in, they hide behind the rocks." He admits that he was once sceptical himself. "I used to think they were just pretty decorations. Now I know they are much cleverer than that."

[7] The next time you hear someone joke about a goldfish's memory, you will know the truth. The little fish in the bowl may remember far more than we have ever given it credit for — and it might even remember you.

Words to help you

compliment [1] — something kind said about a person

pebble [1] — a small, smooth stone

lever [3] — a small bar that you push to make something work

assumed [4] — believed something without checking it

sceptical [6] — not ready to believe something

given it credit for [7] — believed it was able to do

Questions — 15 marks

1. (para 1) What does a person mean when they say, "You have the memory of a goldfish!"? Choose the best answer. (1 mark)

A. You get bored very easily.
B. You are as clever as a fish.
C. You learn new things very slowly.
D. You forget things very quickly.

2. (para 1) According to the popular idea, why does a goldfish never get bored? Answer in your own words. Answer in complete sentences. (2 marks)

3. (para 2) Put these events from the imagined experiment in the correct order. Write 1, 2, 3 or 4 in each box. (1 mark)

Event	Order
The training finished.	☐
The fish reacted to the sound when tested again after training.	☐
The researchers made a sound each time they gave the fish food.	☐
The fish swam to the feeding place when they heard the sound, even without food.	☐

4. (para 2) Find ONE word in paragraph 2 that means "very surprising". (1 mark)

5. (para 3) Tick (✓) TWO things that goldfish have been trained to do. (1 mark)

A. find their food in the dark	☐
B. find their way through a maze	☐
C. come when their name is called	☐
D. see that two colours are not the same	☐
E. jump out of the water for food	☐

6. (para 3) What does "**this**" in paragraph 3 refer to? Name TWO things. (1 mark)

7. (para 4) Decide whether each statement is True, False or Not Given. Circle the answer. (3 marks)

Statement			
(a) Experts know exactly how the three-second idea began. (para 4)	True	False	Not Given
(b) Some people thought that a fish with a small brain could not be clever. (para 4)	True	False	Not Given
(c) Most goldfish owners still believe the three-second idea today. (para 4)	True	False	Not Given

8. (para 5) Which of these does paragraph 5 NOT say a goldfish needs? (1 mark)

A. things to explore
B. clean water
C. another fish to swim with
D. room to move around

9. (para 6) Complete the table about Peter Smith's goldfish. (2 marks)

When …	the fish …
Peter enters the room	(a) _____
a person they do not know enters	(b) _____

10. (para 6) How has Peter Smith's opinion of goldfish changed? Answer in complete sentences. (1 mark)

11. (whole passage) What is the writer's main purpose? (1 mark)

A. to explain how to look after a pet goldfish
B. to show that a popular belief about goldfish is wrong
C. to tell a funny story about a man and his pets
D. to persuade readers to buy a goldfish

Comprehension answers

Question 1

D

Para 1: people believe a goldfish "can remember things for only three seconds". A is tempting because boredom is mentioned, but it is not what the saying means.

Question 2

The goldfish forgets everything it has seen, so every plant and stone looks new each time it swims past them.

Any answer that gives both points: (1) it forgets quickly / cannot remember; (2) so everything seems new each time. One mark for each point.

Para 1: "finds every plant and pebble brand new each time it passes them"

Question 3

The training finished. **3** · The fish reacted to the sound when tested again after training. **4** · The researchers made a sound … **1** · The fish swam to the feeding place … **2**

Para 2

Question 4

astonishing

Para 2, sentence 1

Question 5

B and **D**; award 1 mark only for both correct choices and no extra choices.

Para 3: "swim through a simple maze, or tell the difference between colours"

Question 6

Award 1 mark for two correct examples. Any TWO of: pushing a lever; swimming through a maze; telling colours apart; responding at a certain time of day.

Para 3, sentences 1–2

Question 7

(a) **False** (b) **True** (c) **Not Given**

(a) Para 4: "Nobody knows for certain." (b) Para 4: people "assumed that a small brain must be a weak one". (c) Para 4 says some owners believed the idea in the past, but the passage never says how many owners believe it today.

Question 8

C

Para 5 names clean water, space and things to explore. Another fish is never mentioned.

Question 9

(a) They swim to the front of the tank. (b) They hide behind the rocks.

(a) come to the front (b) hide

Para 6

Question 10

He used to think goldfish were only nice to look at, but now he believes they are clever.

Any answer that gives both the old view (just decorations / only pretty) and the new view (clever / intelligent).

Para 6: "I used to think they were just pretty decorations. Now I know they are much cleverer than that."

Question 11

B

Whole passage, especially paras 2–3 and 7. A is tempting because para 5 talks about care, but that is only one paragraph.

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Grammar Usage

Answer every question on this page.

PART C Word formation

Fill in each blank with the correct form of the word in brackets. In two blanks, you must change a noun back into a verb.

Volunteers of the High Hills

Joining a mountain rescue team demands more than physical 1 _____ (fit). Rescues happen at midnight and in freezing rain, so quiet 2 _____ (endure) matters more than speed. Team leaders must 3 _____ (explanation) every decision clearly over the radio. Map-reading demands complete 4 _____ (accurate). The rapid 5 _____ (grow) of hill-walking has kept the teams busy, so they visit schools to teach mountain 6 _____ (safe), and they urge walkers to 7 _____ (choice) their routes carefully. Nobody is paid, yet nobody leaves; they all feel a deep 8 _____ (responsible) for their hills.

PART D Modals

Choose from the box. Use the function in brackets to guide your choice. Each phrase may be used once. There is one extra.

had to · must · would · can't · should · needn't · might

Lucy: Is it true that you worked at a printing house when you were sixteen, Uncle? **Uncle Paul:** True. I 1 _____ (past obligation) start at five every morning. **Lucy:** Five in the morning! You 2 _____ (strong deduction) mean five in the afternoon. **Uncle Paul:** No, the morning! Every Friday the old manager 3 _____ (past habit) read the newspaper aloud while we worked. **Lucy:** That 4 _____ (disbelief) be true! **Uncle Paul:** It is. You really 5 _____ (advice) write these stories down. **Lucy:** I 6 _____ (no need) write anything down – Auntie remembers every word!

Answers **C** 1 fitness · 2 endurance · 3 explain · 4 accuracy · 5 growth · 6 safety · 7 choose · 8 responsibility **D** 1 had to · 2 must · 3 would · 4 can't · 5 should · 6 needn't

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