

# IELTSFever Academic IELTS Reading Test 150

## Reading Passage 1

*You should spend about 20 minutes on Questions 1-13, which are based on the IELTSFever Academic IELTS Reading Test 150 Reading Passage Pulling strings to build pyramids below.*

### Pulling strings to build pyramids

No one knows exactly how the pyramids were built. Marcus Chown reckons the answer could be 'hanging in the air'. The pyramids of Egypt were built more than three thousand years ago, and no one knows how. The conventional picture is that tens of thousands of slaves dragged stones on sledges. But there is no evidence to back this up. Now a Californian software consultant called Maureen Clemmons has suggested that kites might have been involved. While perusing a book on the monuments of Egypt, she noticed a hieroglyph that showed a row of men standing in odd postures. They were holding what looked like ropes that led, via some kind of mechanical system, to a giant bird in the sky. She wondered if perhaps the bird was actually a giant kite, and the men were using it to lift a heavy object.

Intrigued, Clemmons contacted Morteza Gharib, aeronautics professor at the California Institute of Technology. He was fascinated by the idea. 'Coming from Iran, I have a keen interest in Middle Eastern science', he says. He too was puzzled by the picture that had sparked Clemmons's interest. The object in the sky apparently had wings far too short and wide for a bird. 'The possibility certainly existed that it was a kite' he says. And since he needed a summer project for his student Emilio Graff, investigating the possibility of using kites as heavy lifters seemed like a good idea.

Gharib and Graff set themselves the task of raising a 4.5-metre stone column from horizontal to vertical, using no source of energy except the wind. Their initial calculations and scale model wind-tunnel experiments convinced them they wouldn't need a strong wind to lift the 33.5-tonne column. Even a modest force, if sustained over a long time, would do. The key was to use a pulley system that would magnify the applied force. So they rigged up a tent-shaped scaffold directly above the tip of the horizontal column, with pulleys suspended from the scaffold's apex. The idea was that as one end of the column rose, the base would roll across the ground on a trolley.

Earlier this year, the team put Clemmons's unlikely theory to the test, using a 40-square metre rectangular nylon sail. The kite lifted the column clean off the ground. 'We were absolutely stunned,' Ghari b says. The instant the sai l opened into the wind, a huge force was generated and the column was raised to the vertica: in a mere 40 seconds.'

The wind was blowing at a gentle 16 to 20 kilometres an hour, little more than half what they thought would be needed. What they had failed to reckon with was what happened when the

kite was opened. There was a huge initial force - five times larger than the steady state force,' Gharib says. This jerk meant that kites could lift huge weights, Gharib realised. Even a 300-tonne column could have been lifted to the vertical with 40 or so men and four or five sails. So Clemmons was right: the pyramid builders could have used kites to lift massive stones into place. 'Whether they actually did is another matter,' Gharib says. There are no pictures showing the construction of the pyramids, so there is no way to tell what really happened. The evidence for using kites to move large stones is no better or worse than the evidence for the brute force method,' Gharib says.

Indeed, the experiments have left many specialists unconvinced. The evidence for kite-lifting is non-existent,' says Will eke Wend rich, an associate professor of Egyptology at the University of California, Los Angeles.

Others feel there is more of a case for the theory. Harnessing the wind would not have been a problem for accomplished sailors like the Egyptians. And they are known to have used wooden pulleys, which could have been made strong enough to bear the weight of massive blocks of stone. In addition, there is some physical evidence that the ancient Egyptians were interested in flight. A wooden artefact found on the step pyramid at Saqqara looks uncannily like a modern glider. Although it dates from several hundred years after the building of the pyramids, its sophistication suggests that the Egyptians might have been developing ideas of flight for a long time. And other ancient civilisations certainly knew about kites; as early as 1250 BC, the Chinese were using them to deliver messages and dump flaming debris on their foes.

The experiments might even have practical uses nowadays. There are plenty of places around the globe where people have no access to heavy machinery, but do know how to deal with wind, sailing and basic mechanical principles. Gharib has already been contacted by a civil engineer in Nicaragua, who wants to put up buildings with adobe roofs supported by concrete arches on a site that heavy equipment can't reach. His idea is to build the arches horizontally, then lift them into place using kites. 'We've given him some design hints,' says Gharib. We're just waiting for him to report back.' So whether they were actually used to build the pyramids or not, it seems that kites may make sensible construction tools in the 21st century AD.

## Questions 1-7

*Do the following statements agree with the information given in Reading Passage 1?*

*In boxes 1- 7 on your answer sheet, write*

|           |  |
|-----------|--|
| TRUE      | if the statement is True                       |
| FALSE     | if the statement is false                      |
| NOT GIVEN | If the information is not given in the passage |

- (1) It is generally believed that large numbers of people were needed to build the pyramids.
- (2) Clemmons found a strange hieroglyph on the wall of an Egyptian monument.
- (3) Gharib had previously done experiments on bird flight.
- (4) Gharib and Graff tested their theory before applying it.
- (5) The success of the actual experiment was due to the high speed of the wind.
- (6) They found that, as the kite flew higher, the wind force got stronger.
- (7) The team decided that it was possible to use kites to raise very heavy stones.

### Questions 8-13

Complete the summary below.

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

Write your answers in boxes 8-13 on your answer sheet.

#### Additional evidence for theory of kite-lifting

The Egyptians had **8** ..... which could lift large pieces of **9** ..... and they knew how to use the energy of the wind from their skill as **10** ..... The discovery on one pyramid of an object which resembled a **11** ..... suggests they may have experimented with **12** ..... In addition, over two thousand years ago kites were used in China as weapons, as well as for sending **13** .....

### Reading Passage 2

You should spend about 20 minutes on Questions 14-26, which are based on the IELTSFever Academic IELTS Reading Test 150 Reading Passage. Is there a psychologist in the building? below.

## Is there a psychologist in the building?

**CHRISTIAN JARRETT reports on psychology's place in new architectural development.**

{A}. The space around us affects us profoundly – rebuilding of one south London school as a striking emotionally, behaviorally, cognitively. In Britain, that example of how building design can

affect human space is changing at a pace not seen for a generation. But is anyone listening? 'This is a hugely recognised country's psychology research that is not only relevant but improved schools. At the moment we're talking to ourselves,' says Chris Spencer, professor of environmental psychology at the University of Sheffield. Spencer recalls a recent talk he gave in which he called on fellow researchers to make a greater effort to communicate their findings to architects and planners. 'I was amazed at the response of many of the senior researchers, who would say: "I'm doing my research for pure science, the industry can take it or leave it". But there are models of how to apply environmental psychology to real problems if you know where to look. Professor Frances Kuo is an example.

**{B}**. Kuo's website provides pictures and plain English " The collaborative project currently summarizes the research conducted by her Human stands as a one-off experiment. " Among these trainee architects will now go away with some study using police records that found inner-city surrounded by more vegetation suffered 52 per cent fewer crimes than apartment blocks with little or no greenery. Frances Kuo and her co-researcher William Sullivan believe that greenery reduces crime – so long as visibility is preserved – because it reduces aggression, brings local residents together outdoors, and the conspicuous presence of people deters criminals.

**{C}**. 'Environmental psychologists are increasingly in demand,' says David Uzzell, professor of environmental psychology. 'We're asked to contribute to the planning, design and management of many different environments, ranging from neighbourhoods, offices, schools, health, transport, traffic and leisure environments for the purpose of improving quality of life and creating a better people-environment fit.' Uzzell points to the rebuilding of one south London school as a striking example of how building design can affect human behaviour positively. Before its redesign, it was ranked as the worst school in the area – now it is recognised as one of the country's twenty most improved schools.

**{D}**. Uzzell has been involved in a pioneering project between M.Sc students in England and Scotland. Architecture students in Scotland acted as designers while environmental psychology students in England acted as consultants, as together they worked on a community project in a run-down area of Glasgow. The psychology students encouraged the architecture students to think about who their client group was, to consider issues of crowding and social cohesion, and they introduced them to psychological methodologies, for example, observation and interviewing local residents about their needs.' The collaborative project currently stands as a one-off experiment. 'Hopefully, these trainee architects will now go away with some understanding of the psychological issues involved in the design and will take into account people's needs,' says Uzzell.

**{E}**. Hilary Barker, a recent graduate in psychology, now works for a design consultancy. She's part of a four-person research team that contributes to the overall work of the company in helping clients use their office space more productively. Her team all have backgrounds in psychology or social science, but the rest of the firm consists mainly of architects and interior designers. 'What I do is pretty rare, to be honest,' Barker says. 'I feel very privileged to be able to use my degree in such a way.' Barker explains that the team carries out observational studies

on behalf of companies, to identify exactly how occupants are using their building. The companies are often surprised by the findings, for example, that staff use meeting rooms for quiet, individual work.

**{F}**. One area where the findings from the environment- behaviour research have certainly influenced building is in hospital design. The government has a checklist of criteria that must be met in the design of new hospitals, and these are derived largely from the work of the behavioural scientist Professor Roger Ulrich,' Chris Spencer says. Ulrich's work has shown, for example, how the view from a patient's window can affect their recovery. Even a hospital's layout can impact people's health, according to Dr John Zeisel. 'If people get lost in hospitals, they get stressed, which lowers their immune system and means their medication works less well. You might think that way-finding around the hospital is the responsibility of the person who puts all the signs up, but the truth is that the basic layout of a building is what helps people find their way around,' he says.

**{G}**. Zeisel also points to the need for a better balance between private and shared rooms in hospitals. 'Falls are reduced and fewer medication errors occur' in private rooms, he says. There's also research showing how important it is that patients have access to the outdoors and that gardens in hospitals are a major contributor to well-being. However, more generally, Zeisel shares Chris Spencer's concerns that the lessons from environmental psychology research are not getting through. 'There is certainly a gap between what we do in social science and the world of designers and architects,' says Zeisel. He believes that most industries, from sports to film- making, have now recognised the importance of an evidence-based approach and that the building trade needs to formulate itself more in that vein and to recognise that there is relevant research out there. 'It would be outrageous, silly, to go ahead with huge building projects without learning the lessons from the new towns established between 30 and 40 years ago,' he warns.

### Questions 14-20:

*Reading Passage 2 has seven paragraphs. A-G.*

*Choose the correct heading for A-G from the list of headings below.*

*Write the correct number, h-x, in boxes 14-20 on your answer sheet.*

#### List of Headings

- (i). A comparison between similar buildings
- (ii). The negative reaction of local residents
- (iii). An unusual job for a psychologist
- (iv). A type of building benefiting from prescribed guidelines
- (v). The need for government action
- (vi). A failure to use available information in practical ways

- (vii). Academics with an unhelpful attitude
- (viii). A refusal by architects to accept criticism
- (ix). A unique co-operative scheme
- (x). The expanding scope of environmental psychology

(14). Paragraph A

(15). Paragraph B

(16). Paragraph C

(17). Paragraph D

(18). Paragraph E

(19). Paragraph F

(20). Paragraph G

Questions 21-22:

*Choose TWO letters, A-E*

*Write the correct letters in boxes 21 and 22 on your answer sheet.*

*Which TWO of the following benefits are said to arise from the use of environmental psychology when planning buildings?*

- (A). better relationships between staff
- (B). improved educational performance
- (C). reduction of environmental pollution
- (D). fewer mistakes made by medical staff
- (E). easier detection of crime

Questions 23-24:

*Choose TWO letters, A-E*

*Write the correct letters in boxes 23 and 24 on your answer sheet.*

*Which TWO of the following research methods are mentioned in the passage?*



- (A). the use of existing data relating to a geographical area
- (B). measuring the space given to a variety of activities
- (C). watching what people do in different parts of a building
- (D). analyzing decisions made during the planning of a building
- (E). observing patients' reactions to each other

### Questions 25-26:

*Complete the sentences below*

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

*Write your answers in boxes 25 and 26 on your answer sheet.*

- (25). The students from England suggested that the Scottish students should identify their .....
- (26). John Zeisel believes that if the building is clear, patient outcomes will improve .....

### Reading Passage 3

*You should spend about 20 minutes on Questions 27-40, which are based on the IELTSFever Academic IELTS Reading Test 150 Reading Passage The history of the tortoise below.*

#### The history of the tortoise

If you go back far enough, everything lives in the sea. At various points in evolutionary history, enterprising individuals within many different animal groups moved out onto the land, sometimes even to the most parched deserts, taking their own private seawater with them in blood and cellular fluids. In addition to the reptiles, birds, mammals and insects which we see all around us, other groups that have succeeded out of water include scorpions, snails, crustaceans such as woodlice and land crabs, millipedes and centipedes, spiders and various worms. And we mustn't forget the plants, without whose prior invasion of the land none of the other migrations could have happened.

Moving from water to land involved a major redesign of every aspect of life, including breathing and reproduction. Nevertheless, a good number of thoroughgoing land animals later turned around, abandoned their hard-earned terrestrial re-tooling, and returned to the water again. Seals have only gone part way back. They show us what the intermediates might have been like, on the way to extreme cases such as whales and dugongs. Whales (including the small whales we call dolphins) and dugongs, with their close cousins the manatees, ceased to be land

creatures altogether and reverted to the full marine habits of their remote ancestors. They don't even come ashore to breed. They do, however, still breathe air, having never developed anything equivalent to the gills of their earlier marine incarnation. Turtles went back to the sea a very long time ago and, like all vertebrate returnees to the water, they breathe air. However, they are, in one respect, less fully given back to the water than whales or dugongs, for turtles still lay their eggs on beaches.

There is evidence that all modern turtles are descended from a terrestrial ancestor which lived before most of the dinosaurs. There are two key fossils called *Proganochelys quenstedti* and *Palaeochersis talampayensis* dating from early dinosaur times, which appear to be close to the ancestry of all modern turtles and tortoises. You might wonder how we can tell whether fossil animals lived on land or in water, especially if only fragments are found. Sometimes it's obvious. Ichthyosaurs were reptilian contemporaries of the dinosaurs, with fins and streamlined bodies. The fossils look like dolphins and they surely lived like dolphins, in the water. With turtles it is a little less obvious. One way to tell is by measuring the bones of their forelimbs.

Walter Joyce and Jacques Gauthier, at Yale University, obtained three measurements in these particular bones of 71 species of living turtles and tortoises. They used a kind of triangular graph paper to plot the three measurements against one another. All the land tortoise species formed a tight cluster of points in the upper part of the triangle; all the water turtles cluster in the lower part of the triangular graph. There was no overlap, except when they added some species that spend time both in water and on land. Sure enough, these amphibious species show up on the triangular graph approximately halfway between the 'wet cluster' of sea turtles and the 'dry cluster' of land tortoises. The next step was to determine where the fossils fell. The bones of *P. quenstedti* and *JR talampayensis* leave us in no doubt. Their points on the graph are right in the thick of the dry cluster. Both these fossils were dryland tortoises. They come from the era before our turtles returned to the water.

You might think, therefore, that modern land tortoises have probably stayed on land ever since those early terrestrial times, as most mammals did after a few of them went back to the sea. But apparently not. If you draw out the family tree of all modern turtles and tortoises, nearly all the branches are aquatic. Today's land tortoises constitute a single branch, deeply nested among branches consisting of aquatic turtles. This suggests that modern land tortoises have not stayed on land continuously since the time of *P. quenstedti* and *P. talampayensis*. Rather, their ancestors were among those who went back to the water, and they then re-emerged back onto the land in (relatively) more recent times.

Tortoises therefore represent a remarkable double return. In common with all mammals, reptiles and birds, their remote ancestors were marine fish and before that various more or less worm-like creatures stretching back, still in the sea, to the primeval bacteria. Later ancestors lived on and stayed there for a very large number of generations. Later ancestors still evolved back into the water and became sea turtles. And finally they returned yet again to the land as tortoises, some of which now live in the driest of deserts.



## Questions 27-30

Answer the questions below.

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

Write your answers in boxes 27-30 on your answer sheet.

(27) What had to transfer from sea to land before any animals could migrate?

(28) Which TWO processes are mentioned as those in which animals had to make big changes as they moved onto land?

(29) Which physical feature, possessed by their ancestors, do whales lack?

(30) Which animals might ichthyosaurs have resembled?

## Questions 31-33

Do the following statements agree with the information given in Reading Passage 37

In boxes 31-33 on your answer sheet, write

|           |  |
|-----------|--|
| TRUE      | if the statement is True                       |
| FALSE     | if the statement is false                      |
| NOT GIVEN | If the information is not given in the passage |

(31) Turtles were among the first group of animals to migrate back to the sea.

(32) It is always difficult to determine where an animal lived when its fossilised remains are incomplete.

(33) The habitat of ichthyosaurs can be determined by the appearance of their fossilised remains.

## Questions 34-39

Complete the flow-chart below.

Choose **NO MORE THAN TWO WORDS AND/OR A NUMBER** from the passage for each answer. Write your answers in boxes 34-39 on your answer sheet.

Method of determining where the ancestors of turtles and tortoises come from

**Step 1:** 71 species of living turtles and tortoises were examined and a total of **34**.....  
. were taken from the bones of their forelimbs.



**Step 2:** The data was recorded on a **35**..... (necessary for comparing the information). Outcome: Land tortoises were represented by a dense **36**..... of points towards the top. Sea turtles were grouped together in the bottom part.



**Step 3:** The same data was collected from some living **37**..... species and added to the other results. Outcome: The points for these species turned out to be positioned about **38**..... up the triangle between the land tortoises and the sea turtles.



**Step 4:** Bones of *P. quenstedti* and *P. tampanensis* were examined in a similar way and the results added. Outcome: The position of the points indicated that both these ancient creatures were **39**.....

Question 40:

Choose the correct letter, **A, B, C or D**.

Write the correct letter in box 40 on your answer sheet.

According to the writer, the most significant thing about tortoises is that

- (A) they are able to adapt to life in extremely dry environments.
- (B) their original life form was a kind of primeval bacteria.
- (C) they have so much in common with sea turtles.
- (D) they have made the transition from sea to land more than once.

