

# Cities of the future

**1a** Look at the following possible places for future cities and number them according to how likely you think it is that humans will live there one day. (1= most likely).

- a) under the ground .....
- b) in very tall skyscrapers (more than 100 floors high) .....
- c) on the moon .....
- d) on other planets in our solar system .....
- e) at the bottom of the sea .....
- f) on the sea on artificial islands .....

**1b** Work in pairs to compare your ideas. Can you think of any other possibilities?

**2a** Read the question above the text. Then scan the text and underline the names of the vegetables.

**What salt-tolerant vegetable\* is currently being developed?**

Rising sea levels may well be a problem for food production because if land becomes covered with sea water, the salt can make it unsuitable for growing crops. Research is therefore being carried out in the Netherlands to try to develop crops which can still grow well in salty soil. Experiments have previously been carried out with carrots and one variety of onion. However, the most exciting developments at the moment are the attempts to produce a potato like this, as they are the world's fourth most important crop.

**Glossary**

\*A salt-tolerant vegetable is one that can grow in salty soil or water.

**Exam tip**

A passage may contain two or more items that could be the right answer to a question. You can check which is correct by noting key words or phrases in the question and then reading the passage again to see if they appear. This can help you to find the correct answer.

**2b** Look back at the question and underline a key word which changes its whole meaning. Then look at the vegetables you underlined and choose the correct one.

**3** Follow the procedure in exercise 2 and answer the questions.

- a) How many years will it take to build the Ocean Spiral?
- b) What will be the main form of transport in CCCC's floating city?

The Ocean Spiral is a project proposed by the Japanese company Shimizu to provide homes for people on the ocean. Officials at the company say that it will take about five years to construct and that the technology needed to create living conditions below the surface of the ocean could be available in just 12 years' time.

The building company CCCC hopes to build a floating city off the coast of China. It will include a number of facilities for entertaining visitors, such as museums and a theme park. Residents and visitors will travel around the city principally by submarine, although there may also be roads for electric cars.

**4** Read the questions (1–9) and decide what type of word or information you need to look for in the passage.

- 1 What institutions have often taken advantage of the absence of laws at sea? .....
- 2 What destroyed Werner Stiefel's last attempt at creating an offshore platform? .....
- 3 What shape will the area of the Ocean Spiral with the living spaces be? .....
- 4 What gas will be produced by the Ocean Spiral's 'earth factory'? .....
- 5 What material will be used to construct the Ocean Spiral? .....
- 6 What kind of floating construction has CCCC already developed? .....
- 7 What will be the main purpose of CCCC's floating city? .....
- 8 What will provide the main source of energy in the city? .....
- 9 What will be the source of drinking water? .....

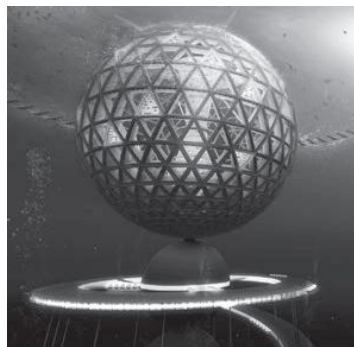
**EXAM TASK: Reading (short answer questions)**

- 5** Scan the passage and answer the questions in exercise 4. Choose no more than TWO words or a word and a number from the passage for each answer.

**Exam tip**

When answering short answer questions in the IELTS exam, make sure you do not write more words than the word limit given.

## Floating cities



The oceans cover 71 per cent of the surface of our planet, while humans live on the remaining 29 per cent. But is this a real limit in the modern world or are we coming close to building new cities on the ocean, or even under it?

In the past, plans to establish human settlements on the ocean were often driven by dreams of creating a new society. This is because, beyond an area of 200 nautical miles surrounding any country, there are no laws at sea. In the past, several radio stations have placed themselves at sea to avoid a country's rules about broadcasting. But there have been more ambitious projects too. In the 1960s, the US businessman Werner Stiefel made several attempts to set up a new society called 'Operation Atlantis' in the sea around the Caribbean. None of his projects were successful, and he gave up the idea after a platform that he was building off Cuba broke up in a storm.

In the 21st century, developments in technology and the need to create space for a growing population have made projects for living on the ocean both more realistic and more necessary. One such project is the Ocean Spiral, proposed by the Japanese engineering firm Shimizu.

According to the design, part of this will be a large spherical structure about 500 metres across. This section will provide homes for about 3,000 people. Most of the time it will sit on the surface of the ocean like a floating ball, but it can be pulled down under the water in bad weather. Below this section, a spiral-shaped path will lead to the ocean floor. Here an 'earth factory' will use micro-organisms to turn carbon dioxide into methane. This can be used to generate electricity. The original plan was to use concrete as the main construction material, but Shimizu now plans to build all of the structure from resin\*.

Japan is not the only country with plans like this. As China is faced with a need to provide housing for its increasing population, it may also start building cities out in the ocean. The Chinese company CCCC hopes to build a new floating city off the country's coast. The company has already created bridges which can float on water. According to the plan, this technology could form the basis for a complete new city. It will provide living space for some of the residents of China's crowded cities, but the designers see its primary purpose as a tourist attraction. The city is expected to be able to provide its own energy and food. Energy will be mostly provided by the movement of the waves, while the processing of rubbish will provide a secondary source of power. Farms located around the edge of the construction will supply food, and drinking water will be collected from rain and stored in a large freshwater lake.

Shimizu and CCCC's proposed floating cities may seem very ambitious, but both companies insist that they will go ahead.

**Glossary**

\*resin (noun) a solid synthetic material used as the basis of plastic

- 6** Scan the passage to find a verb that commonly goes in front of the following nouns:

- |                                  |                                  |
|----------------------------------|----------------------------------|
| a) <u>establish</u> a settlement | d) ..... housing                 |
| b) ..... the idea                | e) ..... the basis for something |
| c) ..... electricity             | f) ..... food                    |

- 7** Use the verb–noun collocations from exercise 6 to complete the following sentences. Change the tense of the verb if necessary.

- His ideas formed the basis for a new social movement and eventually a new political party.
- If the desert continues to expand, then there will be less land to ..... for the hungry population.
- The minister revealed a programme to ..... for the newly arrived refugees in the city.
- The French successfully ....., which later became the city of Quebec.
- It is important that humans do not ..... of creating a better society.
- During certain hours, the water from the river flows to a power plant to .....