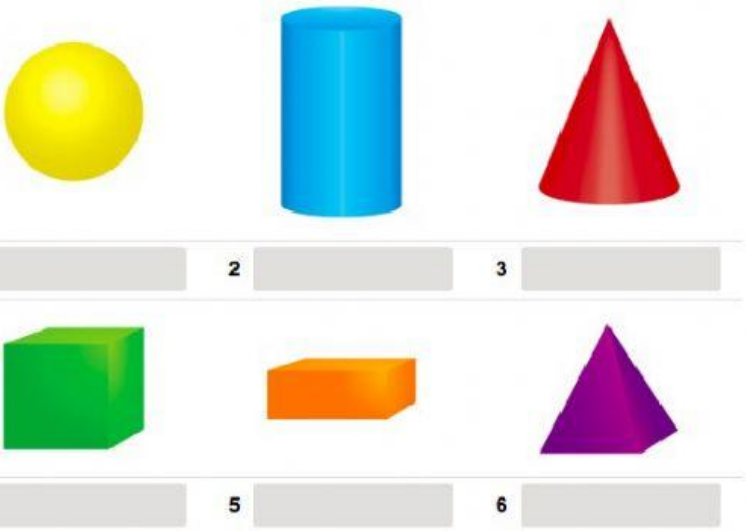
UNIT 6: SCIENCE AND TECHNOLOGY

READING

Exercise 1: Read the information. Then label the shapes with the words in the box.

In the IELTS Reading test, you might need to read about something and use the information to label a diagram. Knowing vocabulary for describing shapes can help you to do this successfully.

cone | cube | cylinder | pyramid | rectangular prism | sphere



1 _____ 2 _____ 3 _____

4 _____ 5 _____ 6 _____

Exercise 2: Complete the table with the correct nouns and adjectives.

noun	adjective
circle	_____
_____	rectangular
square	_____
_____	spherical
oblong	_____
_____	conical
cylinder	_____

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Exercise 3: Read the first sentences. Then choose the correct answers to complete the definitions of the words in bold.

1 The Earth's **gravity** is much stronger than the moon's, meaning that an object would effectively be lighter if it was on the moon than it is when on Earth.

Gravity is *the ability to fly slowly / the force that attracts things to each other .*

2 Meteoroids are often referred to as 'shooting stars' when they burn up on entering the Earth's atmosphere.
Meteoroids are *flying pieces of rock in space / other planets*

3 The Earth's **orbit** of the sun takes 365 and a quarter days.
Orbit is *a circular journey in space around a central point / the distance from a point in space*.

4 Spacecraft returning to Earth re-enter the Earth's **atmosphere** at an altitude of approximately 120 km.
Atmosphere means *the feeling or mood in a place / they layer of gases above the Earth's surface.*

5 Tim Peake is the British **astronaut** who in 2015–16 spent six months aboard the International Space Station.
The best definition of astronaut is *a person who works and travels on a spacecraft / someone who has been to the moon*

6 The International Space Station is comprised of 15 separate **modules**, including five made by Russia.
A module is *a place where a spacecraft takes off from the Earth / a unit of spacecraft that can be detached*.

Exercise 4: Read the information. Then complete the table to form collocations. Use the words in the box.

Collocations are words that often go together. These can be noun + noun (e.g. *space travel*), adjective + noun (e.g. *lunar landings*), etc.

research | scientific | solar | space

	scientist proposal and development		exploration station rocket
	breakthrough expertise research		energy system panel

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Exercise 5: Complete the sentences about summary completion tasks in the IELTS Reading test. Use the phrases in the box.

are grammatically correct	be a paraphrase	be found in the text
be in the same order	choose from a list of words	
write more than the maximum number of words		

1.In a summary completion task, you have to ei ther write the words in the gaps or

2.When you're writing the words in the gaps, r emember that the words you need to write can always

3.It's important that you don't

specified in theinstructions.

4.Always check that the words you write

within thesentence.

5.Remember that the notes you read and compl ete will probably

of the text.

6.The information in the text and in the questio ns will always

Exercise 6: Look at how an IELTS candidate has attempted a summary completion task. The candidate has made a mistake with each answer. What are the mistakes? Choose the correct answers.

Questions 1–4 Complete the notes below. Write **NO MORE THAN TWO WORDS** for each answer.

The Mercator projection

Mapmakers have always faced a challenge – how to make a flat map of the spherical Earth?
There will always be some **1** *distortion to a certain extent*.
Gerardus Mercator (1512–1594) had the idea of showing the map as a **2** *cylindrical*.
Maps of the Earth created in this way are known as the Mercator projection.
They are most accurate when close to the **3** *the equator*.
Several of the Earth's **4** *island* are shown at the wrong size.

Answer 1
- problem with singular / plural
- too many words written
- repetition of words in notes
- wrong part of speech

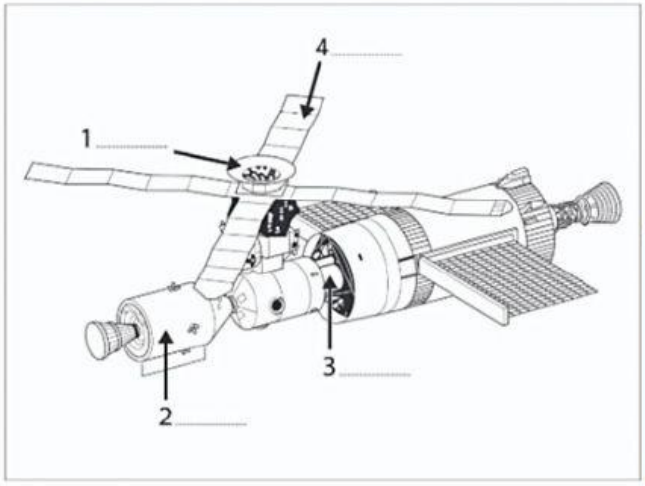
Answer 2
- problem with singular / plural
- too many words written
- repetition of words in notes
- wrong part of speech

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Answer 3
- problem with singular / plural
- too many words written
- repetition of words in notes
- wrong part of speech

Answer 4
- problem with singular / plural
- too many words written
- repetition of words in notes
- wrong part of speech

Exercise 7: Read the information. Then look quickly at the labelling task and scan the passage. Choose the <u>four</u> paragraphs that contain the information you need to label the diagram.



In the next exercises, you will practise an IELTS-style reading task. You will read about a space station from the 1970s and do first a summary completion task and then a task in which you must label the different parts of the space station.

You don't actually need to label the diagram in this exercise – you will do that later.

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The Skylab space station

A The USA sent its Skylab space station into orbit in 1973 from the Kennedy Space Center in Florida. It wasn't the world's first space station – that had been Salyut 1, which was launched by the Soviet Union on 1 April 1971. However, Salyut travelled alone and empty, controlled remotely back on the Earth. No space station had been manned until Skylab, with its crew of three astronauts. Skylab too launched without its crew, who were transported to the space station once it was in orbit in the Apollo Command / Service Module. The crew members spent up to 84 days aboard Skylab. A limiting factor was pure logistics in terms of how many supplies it was feasible for the crew to bring with them, given the restricted space available while in transit on the Apollo Command / Service Module.

B Key objectives of the Skylab mission included the study of space and an investigation into how people could live and work there for extended periods. Additionally, the astronauts were to examine the Earth's surface (both land and oceans). However, the primary goal of the mission was solar research. In fact, solar science was significantly advanced by the powerful telescope on board, and the telescope's observation of the sun was unprecedented. The astronauts had an intense programme of experiments to carry out, and the data from these was scrutinised following Skylab's return to Earth.

C The life cycle of Skylab began after a period of massive expenditure on space rockets, moon capsules and service modules, many of which were still in serviceable condition on return to Earth, and so the decision was taken to reuse leftover components from these to forge the space station. Many of these were from the Apollo moon missions. For example, the Orbital Workshop (the thickest end of the space station) was made from two tanks that had been used for storing liquid hydrogen and liquid oxygen; the former was reconfigured to become a living and working facility, and the latter was used for storing waste products that had accumulated on the mission – unlike in other spacecraft, these were not recycled or dumped into space.

D At the opposite extremity of the space station was the Service Module, whose conical point would dock with the rest of the space station. In actual fact, Skylab was so designed to allow for more than one module to dock simultaneously; this was the contingency plan in the event of any major mishap that meant that the astronauts needed rescuing.

E Skylab itself was essentially cylindrical in form, except for the Apollo Telescope Mount, which stuck out at a right angle from the main body of Skylab. This allowed for observation of the Earth and stars without atmospheric interference. This was instrumental in the collection of many thousands of photographs that were taken and subsequently analysed.

F Radiating out from a central point were the solar array panels, arranged in a cross-like formation and looking almost like a windmill. These were designed in order to achieve optimum alignment.

G The Airlock Module, with a length of 5.4 metres and a width of 2.1 metres, was used by the astronauts to exit the space station and perform spacewalks. It allowed the astronauts to access the exterior and perform any necessary maintenance. This was the cylindrical section with the smallest radius, dwarfed by the bulk of the substantially wider body of the Orbital Workshop and its attachments.

H Overall, the Skylab mission proved a success, though it was not without its setbacks. Just 63 seconds after lift-off, a micrometeoroid shield worked loose and became separated due to atmospheric drag, which compromised the space station's usability and effectively cut off the majority of its electrical power. The first crew members were due to occupy the space station the following day, but their launch was delayed by ten days to allow for changes to be planned and put in place. The damage to the shield caused Skylab's internal temperature to rise to a dangerously high 52 degrees, but a three-and-a-half-hour spacewalk and the adept use of a pair

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of wire cutters attached to an eight-metre-long pole allowed the crew to cut a metal strap and bring the temperature back down to acceptable levels, rendering the space station habitable. This was the first time that a repair of this magnitude had been carried out in space.

I Much attention was paid by NASA to ensuring that Skylab would be comfortably habitable for the astronauts. Whereas previous missions had been brief and undertaken in spacecraft with small volumes, Skylab was to be lived in for months at a time. With this in mind, NASA sent a scientist to the *Ben Franklin* submarine in the Gulf Stream in July–August 1969 to learn how a team of six people could live in an enclosed space for a four-week period. Skylab offered what a subsequent study would call 'a highly satisfactory living and working environment for the crews'. Sitting by its large window with a view of the Earth became the most popular way for the crew to relax in orbit.

J Skylab orbited the Earth from 1973 until 1979. However, its decaying orbit meant that it would inevitably crash back down to Earth. Controllers in Florida endeavoured to minimise the risk of any debris from the space station landing in populated areas. NASA's target was a spot 810 miles off the coast of South Africa in the Indian Ocean. Many people reported seeing brightly coloured flares in the sky on 11 July 1979 as large pieces of the space station broke up in the Earth's atmosphere. Skylab did not in fact burn up as NASA had anticipated, and pieces of debris reached the Earth in Australia, but without any major mishaps.

- Paragraph A
- Paragraph B
- Paragraph C
- Paragraph D
- Paragraph E
- Paragraph F
- Paragraph G
- Paragraph H
- Paragraph I
- Paragraph J

Exercise 8: Read the information. Then read the first three paragraphs of the passage "The Skylab space station" again. Complete the notes. Write NO MORE THAN TWO WORDS from the passage for each answer.

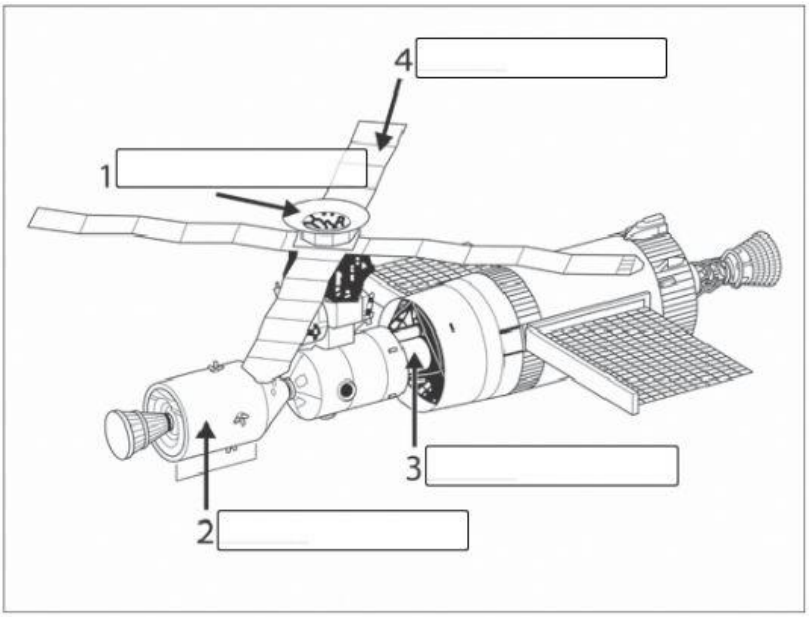
Make sure that you only write one or two words in each gap. As a general rule, try to answer with just one word if possible.

• Time spent by astronauts in orbit depended on the availability of _____ on Skylab.
• The main purpose of Skylab was to study the _____ .
• Skylab was constructed from _____ pieces of hardware.
• In the Orbital Workshop, _____ were kept in an old oxygen tank.

Exercise 9: Read paragraphs D, E, F and G of the passage. Use the information in the passage to label the space station. Use the phrases in the box.

Airlock Module | Apollo Telescope Mount | Command Module | Orbital Workshop
Service Module | Solar Array Panels

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Exercise 10: Read the final paragraphs of the passage. Complete the notes. Write NO MORE THAN TWO WORDS from the passage for each answer.

• An accident during take-off meant that the space station had hardly any _____.
• Astronauts performed repairs to correct the _____ inside the space station.
• The living conditions in a _____ were studied to inform the design of a space station that would be easy to live in.
• NASA had intended the spaceship to fall into the sea near _____.

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