Unit 1: How many planets are there in space?

A Vocabulary

1 **In Unit 1 of the Coursebook, you read about the planets. How much do you remember? Complete the table using the information in the box. List the planets in increasing distance from the sun.**

Earth Jupiter Uranus
Mars Pluto Saturn
Neptune Mercury Venus

4.50 billion km
108 million km
1.43 billion km
2.88 billion km
5.91 billion km
150 million km
228 million km
779 million km
58 million km

Name of the planet in English	Name of god/ goddess, if represented	Name of the planet in your language	Distance of the planet from the sun
Earth	none		150 million km

2 **Match the words to the descriptions. Then choose five words and use them in sentences of your own. Write them on page 8.**

Word	Description
launch (verb)	the sun, planets and moons
mythical	something very small
parachute	imaginary, or not real
planet	a mountain with an opening from which lava comes
classified	a large round mass that orbits a star
solar system	an instrument designed to make distant objects seem closer
desert	the practice of farming
dwarf	arranged in a group according to features
telescope	to send something off into the air
agriculture	a piece of curved transparent material to send out light rays
volcano	an empty, waterless area of land
lens	a cloth canopy that allows something to descend slowly

B Language focus: Passive forms, prefixes, question forms

Passive forms

1 Tick the sentences below that are in the passive. Then underline the passive verbs.

a The planets are named after mythical Greek and Roman gods and goddesses. ☐

b The planets were given their names thousands of years ago. ☐

c Yuri Gagarin was a Russian cosmonaut. ☐

d The space shuttle *Discovery* launched the Hubble Space Telescope. ☐

2 Complete the table.

Tense	Subject	*to be*	Past participle	Final clause
present	images		(produce)	by rays.
past	the planets		(give)	their names.
present perfect	many animals		(send)	into space.
past perfect	most astronauts		(train)	in Russia.
will future	more training		(require)	next year.

3 Read the following information about light rays and eyesight. As you read, put the verbs in brackets into the correct passive form. Then draw some simple diagrams, based on the information in the text.

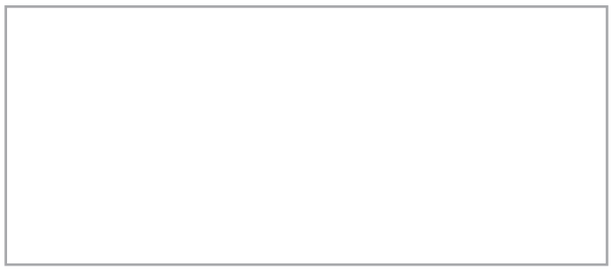
Light rays

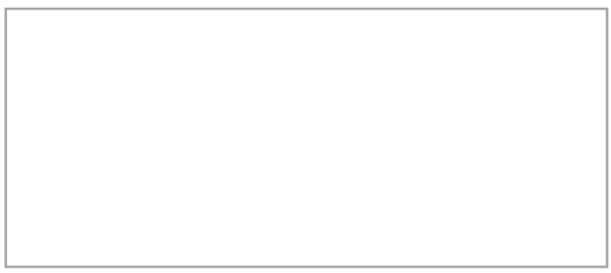
Rays **(a)** _____ (*produce*) by light sources. These rays stream out in all directions. When an object **(b)** _____ (*hit*) by a light ray, the ray usually bounces off. If light rays enter our eyes, we see either the source of the light, or the object that reflected the rays towards us. The angle of the rays gives the object its apparent size.

Eyesight

Light rays from an object **(c)** _____ (*bend*) by the lens of the eye. An image **(d)** _____ (*form*) by the lens on the light-sensitive retina of the eye, and then this image **(e)** _____ (*change*) into a message that travels to the brain. The image is upside down on the retina, but the brain 'sees' it as upright.

Adapted from *The Way Things Work* by David Macaulay (DK Limited, 1988).





Prefixes

4 Complete this definition of a prefix.

A prefix is a letter or g _ _ _ _ of letters placed at the b _ _ _ _ _ _ _ of a word to change its m _ _ _ _ _ _.

5 You saw the words below in the Coursebook. What prefixes make them into different words?

a _ _ _ covered

b _ _ _ _ scopes

c _ _ _ _ _ world

d _ _ _ _ metres

e _ _ _ _ _ mit

f _ _ harmed

g _ _ hydrated

6 Look at these words. Underline the prefix in each one. What does each prefix mean?

a astronaut

_____

b cosmonaut

_____

c telescope

_____

d agriculture

_____

e unscramble

_____

7 Look at these five prefixes. What do they mean? For each prefix, think of two words and then use them in complete sentences in your notebook.

a trans
b micro
c super
d sub
e tech

_____

_____

_____

_____

_____

Question forms

8 You came across Yuri Gagarin in the Coursebook. Complete the questions about him.

Example: Who … ?
Who was Yuri Gagarin?
He was a cosmonaut.

a What _____?

Vostok 1.

b Which _____?

He came from the USSR.

c Where _____?

Round the earth.

d Why _____?

Because he was the first man in space.

e How _____?

He jumped out of his spacecraft and used his parachute.

f When _____?

On 12th April 1961.

9 Have you heard of Felix Baumgartner – or 'Fearless Felix' as he is sometimes known? Felix jumped from a spacecraft and then used his parachute to reach Earth! Read the text, then write questions and answers using the information given.

Example: Who …?
Who was Felix Baumgartner?
He was an Austrian space skydiver.

Felix Baumgartner, an Austrian space skydiver, also known as 'Fearless Felix', made a giant leap from 38 kilometres above Earth on 14th October 2012. A new world record was made when he carried out the highest jump using only his body. During the jump, he spent three minutes and 43 seconds just falling, reaching speeds of more than 1357.6 kph, before opening his parachute and landing in the desert in New Mexico. In total, the jump lasted eight minutes and eight seconds. Around 52 million people around the world watched the jump.

a What _____?

_____

b Which _____?

_____

c Where _____?

_____

d Why _____?

_____

e How _____?

_____

f When _____?

_____

C Reading and writing

1 Read this text about astronomy in China. As you read, complete the gaps using the time references given.

At a later date during the years 25–220 CE in the 17th century
~~in the 4th century BCE~~ thousands of years ago

Astronomy in China has a very long history: detailed records of astronomical observations began **(a)** *in the 4th century BCE* and **(b)** _____, Chinese astronomy was influenced by both Indian and Islamic astronomy. **(c)** _____, **(d)** _____, the telescope was introduced, which brought Chinese astronomy into the modern world.

Unlike western astronomy, which uses the mythical names of Roman and Greek gods and goddesses to name the planets, the Chinese planets got their names **(e)** _____ from ancient Chinese astronomy. They are named after the five elements. Mercury: water, Venus: metal/gold, Mars: fire, Jupiter: wood and Saturn: fire, 'Earth' means 'land sphere'.

Unlike the solar system in the western world, Chinese astronomy has five 'true' planets, which are called 'moving stars'.

2 Use the notes below to write a paragraph about the planet Venus, which is sometimes called the 'Morning Star'.

Venus = brightest object in sky, except for sun and moon.

Called 'Morning Star' when appears in east at dawn.

Called 'Evening Star' when in west at dusk.

Thousands of years ago, evening star called Hesperus, morning star Phosphorus.

Because of distance of Venus and Earth from sun, Venus never visible more than three hours before dawn, three hours after dusk.

Difficult to study from Earth because covered in clouds.

Got most knowledge from space vehicles.

Very powerful radar on *Magellan* spacecraft found huge active volcanoes on Venus.