

UNIT 12.

LIFE ON OTHER PLANETS

A. PHONETICS

I. Decide whether the sentences have falling tone (F) or rising tone (R).

1. How big are the moons of Jupiter? (___)
2. The surface of Mars has many volcanoes (___), canyons (___), and craters.
3. Is Mercury the closest planet to the Sun? (___)
4. Who developed the nebular hypothesis? (___)
5. Is there life on other planets? (___)
6. What is the largest satellite of Uranus? (___)
7. Saturn is a gas giant just like Jupiter (___), Neptune, and Uranus (___).
8. Do Kuiper belt and the scattered disc areas have dwarf planets? (___)

II. Write F if the underlined words have falling tone, and write R if they have rising tone.

1. Nearest the Sun are four fairly small, rocky planets: Mercury, Venus (___), Earth, and Mars.
2. Jupiter is made up of gas, and the other gas giants are Saturn, Uranus, and Neptune (___).
3. Early space probes designed to collect information about the sun were used in the 1950s, 60s, and 70s (___).
4. Seasonal meteorological phenomena may include clouds (___), dust storms, and ice caps.
5. Galileo Galilei was the first person to see Jupiter's moons Io, Europa, Ganymede (___), and Callisto (___).

6. The last total solar eclipse occurred on Dec. 26, 2019, and was visible from Saudi Arabia (___), India, Sumatra, and Borneo (___).
7. The surface of Venus hosts thousands of volcanoes (___), craters (___), and mountain ranges.
8. Over time some of the leftover clumps became asteroids, comets (___), and icy objects (___).

B. VOCABULARY

I. Complete the sentences with the words in the box.

crater	telescope	liquid	creatures	gravity
UFO	galaxy	ancient ocean	rockets	aliens

1. We launch things into space by putting them on _____ with enough fuel.
2. Does _____ water really exist beneath the ice cap at the southern pole of Mars?
3. Earth appears to be the only planet in the solar system with living _____.
4. The _____ observes the universe in infrared light, which is invisible to the human eye.
5. _____ is what holds the planets in orbit around the sun and what keeps the moon in orbit around Earth.
6. The discovery of _____ could help scientists find out whether some form of life existed on Mars.
7. Some people think that _____ exist in the Solar System and throughout the universe.
8. A _____ is any object flying in the sky which cannot be identified by the person who sees it.
9. Our Sun is just one star among the hundreds of billions of stars in our Milky Way _____.
10. The largest known impact _____ in the Solar System is a huge unnamed scar on the surface of Mars, 10,600 km long by 8,500 km wide.

II. Match the words with their definition.

1. Earth	a. It is the second planet from the Sun and the sixth-largest planet in the Solar System.
2. Uranus	b. It is nicknamed the red planet because it is covered with rust-like dust.
3. Jupiter	c. It is the fifth planet from the Sun and the biggest planet of our Solar System.
4. Neptune	d. It is the sixth planet from the Sun, with the largest planetary rings in the Solar System.
5. Mars	e. It is the seventh planet from the Sun and the third-largest planet in the Solar System.
6. Saturn	f. It is the farthest planet from the Sun at an average distance of 4.5 billion kilometres.
7. Venus	g. It is the closest planet to the Sun and also the smallest planet in the Solar System.

	System.
8. Mercury	h. It is the third planet from the Sun and the fifth largest planet in the Solar System.

Answer:

1-	2-	3-	4-	5-	6-	7-	8-
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III. Choose the best answer to complete the sentences.

- In 1957 the Soviet Union launched the first satellite to _____ the Earth.
A. move B. orbit C. travel D. fly
- If _____ existed and were living out there, what types of signals would they send us?
A. scientists B. astronauts C. aliens D. explorers
- Researchers made the amazing findings of _____ of water on Mars.
A. footprints B. trips C. paths D. traces
- We can only see _____ in the sky at night because during the day the sunlight is so bright.
A. the Earth B. stars C. aliens D. UFO
- I think the availability of liquid water is the most important factor that makes a planet _____.
A. habitable B. unsuitable C. dead D. impossible
- The _____ is the centre of the Solar System, making up around 99.86% of its mass.
A. Earth B. Sun C. Moon D. Mars
- A _____ is an object in space that orbits or circles around a bigger object.
A. comet B. meteor C. planet D. satellite
- Astronauts can't breathe in _____ outer space, so they have to wear a spacesuit with an oxygen tank.
A. weightless B. thoughtless C. powerless D. airless
- All of the planets in our Solar System, except for _____, were named after Greek and Roman gods.
A. Neptune B. Jupiter C. Earth D. Venus
- If we don't take _____ care of planet Earth, it mightn't be able to support human life someday.
A. appropriate B. essential C. special D. voluntary

IV. Supply the correct form of the word in brackets.

- Is the asteroid 16 Psyche a _____ target for mining? (promise)

2. Lack of oxygen is the biggest reason why Mars would be an _____ place for human beings.
(appropriate)
3. Only planets within the liquid-water _____ zone can support life on their surfaces. (habitat)
4. They chose two of their most _____ astronauts for the latest mission to the International Space Station. (experience)
5. Scientists are searching a planet that can provide the humans with minimal _____ and amenities. (accommodate)
6. Huge storms always occur on Jupiter; therefore, this planet is said to be a _____ planet.
(storm)
7. The word UFO is an abbreviation which comes from the initial letters of the words _____
'flying object'. (identify)
8. At the end of the film, David lost control of the spaceship and it started to spin _____.
(control)
9. With help from advanced technology, could the moon develop and maintain a _____
atmosphere? (breathe)
10. Within our own galaxy there are probably tens of thousands of systems. (planet)

C. GRAMMAR

I. Choose the correct answer.

1. The teacher asked the students, "What (is astronomy/ astronomy is)?"
2. Kelvin asked his father, "Who (did name/ named) the planets?"
3. He wanted to know why (do planets revolve/ planets revolve) around the sun.
4. "What (is the sun made of/ the sun is made of)?" asked my sister.
5. Joe asked, "Where (the spiral arms are located/ are the spiral arms located)?"
6. The reporter asked us how deep (was the water/ the water was) on Mars.
7. She asked the professor why (Pluto was/ was Pluto) no longer a planet.
8. Carole asked her brother, "Who (discovered Mercury/ did Mercury discover)?"
9. Jim asked me when (the planets would be/ will the planets be) visible at the same time.
10. She asked how many planets (are there/ there were) in the Milky Way.

II. Change the sentences into reported speech.

1. "Why is there no gravity in space?"

Susan asked her teacher

2. "How far is it from the earth to the sun?"

Paul asked Helen

3. "Can black holes get smaller?"

Natalie asked Alexander

4. "Are you reading about UFO sightings?"

Johnson asked Melinda

5. "Could there be life on Mars?"

Penelope asked Nicholas

6. "Is there actually life somewhere in the Solar System outside Earth?"

Bella asked Nolan

7. "Did intelligent life exist on that planet billions years ago?"

Stella asks Alice

8. "Are we alone in the Milky Way galaxy?"

Chloe asked Grace

9. "What will you do with these alien toys?"

Adam asked his little brother

10. "Which stars do you like to point the telescope at?"

Eleanor asked me

III. Change the sentences into direct speech.

1. Lily asked Eva if there could be life somewhere in the Solar System outside Earth.

Lily asked Eva, " _____ "

2. Xavier asked Robert what Earth would be like in the year 2500.

Xavier asked Robert, " _____ "

3. Hazel asked Violet if black holes had any influence on Planet Earth.

Hazel asked Violet, " _____ "

4. Maverick asked Sebastian why he was interested in astronomy.

Maverick asked Sebastian, " _____ "

5. She asked me whether there were any interesting films on TV then.

She asked me, " _____ "

6. Lillian asked Vivian which moons in the Solar System could support life.

Lillian asked Vivian, " _____ "

7. Leonardo asked Andrew whether they could see black holes.

Leonardo asked Andrew, " _____ "

8. He asked me if I would take part in the discussion about space travel.

He asked me, " _____ "

9. Samuel asked Dominic how many habitable planets there were in the universe.

Samuel asked Dominic, " _____ "

10. Scarlet asked Ruby whether it was possible for a black hole to swallow an entire galaxy.

Scarlet asked Ruby, " _____ "

IV. Choose the best answer to complete the sentences.

1. He _____ me, "What do you think aliens look like?"

- A. told B. asked C. said D. wondered

2. Charlotte asked Caroline what her favourite films about aliens _____.

- A. are B. have been C. were D. will be

3. Stephanie asked her friends where and when _____ from.

- A. do meteors usually come B. meteors usually came
C. did meteors usually came D. did meteors usually come

4. She asked, "How much _____ about our Solar System?"

- A. do you know B. you know C. you knew D. you will know

5. Hannah asked Alison _____ earth-like planets the Milky Way might have.

- A. whether B. if C. how many D. what

6. William asked Gwen, "Will Allen be able to come _____?"

- A. that day B. the day after C. the following day D. tomorrow

7. Santiago asked Gabriel, "What _____ the most distant black hole ever seen?"

- A. is B. has been C. had been D. would be

8. She wanted to know where _____ on Mars.

- A. did Perseverance land B. Perseverance landed
C. Perseverance lands D. Perseverance land

9. Daniel asked Nolan if he would help him learn about constellations _____.

- A. tomorrow night B. the night after tomorrow
C. next night D. that night

10. He asked, "How many planets _____ in the Solar System?"

- A. is there B. there is C. are there D. there are

V. Choose the underlined part that needs correcting.

1. Jason asked Nathan how could people learn about black holes if they trapped both dark matter and light.

- A. asked B. could people C. if D. trapped

2. I asked the scientist, "What will happen to the planets when the Sun became a red giant?"

- A. will happened B. when C. became D. giant

3. Sarah asked Abigail if scientists could discovered more planets outside the Solar System.

- A. asked B. if C. discovered D. outside

4. They wanted to know when did astronauts orbited the moon and later walked on its surface.

- A. wanted B. did C. orbited D. walked

5. Scientists said that they estimated the age of the universe by using the movement of stars to measure their expanding speed.

- A. said B. estimated C. using D. their

6. The student asked, "How many sunlight does the surface reflect instead of absorbing?"

- A. How many B. does C. reflect D. absorbing

7. Parker asked Antony whether would black holes swallow up the whole universe.

- A. asked B. whether C. would black holes D. the

8. He asked to me, "On which planet would you see the sun rise in the west and set in the east?"

- A. to B. On C. rise D. set

9. He asked if or not there might be liquid water in geological formations not far below the surface of Mars.

- A. If B. might be C. in D. not far below

10. Naomi asked Henry what kind of life might exist on planets that were far away from us.

- A. asked B. might exist C. were D. from us

D. SPEAKING

I. Match the sentences.

1. Have you seen the film <i>Ad Astra</i> yet?	a. Can you prove it?
2. Is it true that the Sun is a star?	b. There's no life on it.

3. I don't like films about alien. It's scary!	c. Is it the second planet from the Sun?
4. How far is it from the Moon to Earth?	d. Really? In which school will you study?
5. Venus is usually called the Morning Star and the Evening Star.	e. It's about 384.400 km.
6. Is there life on Mars?	f. Yes. I think they are humans' secret weapons.
7. I think most of the UFOs are man-made objects.	g. No, I haven't. What is it about?
8. I think that aliens are real, and they are living somewhere in the Solar System.	h. Yes, it is.
9. I wish that I could visit the Moon.	i. Neither do I.
10. I will study astronomy in university.	j. Oh, it might come true if you have a clear plan for it.

Answer:

1-	2-	3-	4-	5-	6-	7-	8-	9-	10-
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II. Rearrange the sentences to make a conversation.

- ___ I doubt that we would be able to fly there with our current spaceships.
- ___ Oh, don't you know that scientists have found some potentially habitable exoplanets outside the solar system?
- ___ I'm not sure about it. Not in this century!
- ___ Yes, I have. Sometimes I dreamt of life outside the earth when I watched sciencefiction movies and read articles or books about astronomy. But I think humans won't be able to live on another planet.
- ___ Why not?
- _1_ Have you ever thought of living on another planet?
- ___ Because it's too far from US. It would take US light-years to reach a habitable planet with the existing technology, supposing that we find one.
- ___ Yes, I know. But I believe scientists will invent a super spaceship space travel in the future which helps to reduce the time they travel in space.
- ___ What is the closest habitable planet to Earth then? How far is it?

___ In August 2016 astronomers announced the discovery of a rocky planet in the habitable zone of Proxima Centauri, which is the closest star to our Solar System. The planet is located approximately 4.2 light-years from Earth.

E. READING

I. Read the passage and decide whether the statements are TRUE (T) or FALSE (F).

The word alien is a popular word for an extraterrestrial life-form, or a being from another planet. No one knows whether there is life elsewhere in the universe. But some scientists think that it is possible. Whether life exists on other planets or not, the idea of aliens has excited people for years. Lots of people enjoy science fiction stories about aliens - also called extraterrestrials. Some believe that aliens actually have visited Earth. Many people have reported seeing unusual objects in the sky. Some think that these UFOs are alien spaceships. The presence of aliens on Earth has never been proven, however.

Most scientists believe that for another planet to have life on it, it must be similar to Earth in several ways. It is likely to need an atmosphere and water. It also must orbit a star, like the Sun, at a good distance. This star would provide the right amount of light and heat for life to exist.

Scientists have studied planets and moons in our Solar System to see if they can support life. Space probes have searched for traces of bacteria or other tiny living things on Mars. Some scientists are also looking for the possibility of life outside our Solar System. Using radio telescopes, they hope to capture signals from intelligent aliens.

So far, no evidence of extraterrestrial life has been found. However, scientists have discovered hundreds of planets that orbit distant stars. Some of these planets are an ideal distance from their stars, and some are roughly the size of Earth. It may be possible that life has developed on one or more of them.

1. ____ No one knows for sure that there is life on other planets, excluding scientists.
2. ____ There is actually no extraterrestrial life-form in the universe.
3. ____ Both "aliens" and "extraterrestrials" refer to life existing on other planets.
4. ____ Many people have seen UFOs but they couldn't prove that the UFOs are connected to aliens.
5. ____ To support life a planet needs to have an atmosphere and water and provides an amount of light and heat.
6. ____ Only the telescopes are able to search for traces of living things in space.
7. ____ Scientists haven't found any traces of extraterrestrial life on the moons in the Solar System.
8. ____ Scientists still can't find any planets which are roughly the size of Earth.

II. Fill in each blank with a word from the box.

size	spacecraft	since	temperatures	orbit
gravity	surface	colour	height	longer

Named after the Roman God of war, Mars is the fourth planet from the Sun in our Solar System.

Mars is also known as the 'Red Planet' because it's red. This signature (1) _____ comes from the large amount of a chemical called iron oxide in its rocks and soil.

Mars is the second smallest planet in the Solar System after Mercury. With a diameter of 6,791 kilometres, it's roughly half the (2) _____ of Earth.

It can get pretty cold on Mars - much colder than our own planet, (3) _____ it's further away from the sun. At the equator, (4) _____ can reach 20°C, but at its poles they can drop down to as low as -140°C.

Mars is home to the highest mountain in our Solar System - a volcano called Olympus Mons. Standing a whopping 24 kilometres high, it's about three times the (5) _____ of Mount Everest.

You could jump around three times higher on Mars than you can on Earth. This is because the planet's (6) _____ - the force that keeps us on the ground - is much weaker.

Mars has two moons. One is called Phobos and the other Deimos.

A day on Mars is 24 hours and 37 minutes - only a little bit (7) _____ than a day on our own planet. A year on Mars, however, is almost twice as long, lasting 687 Earth days. This is because it takes a lot longer than Earth to complete its (8) _____ around the Sun.

Until recently, scientists believed that there was no liquid water on the (9) _____ of Mars - only rocks, soil dust and ice. In 2018, however, they found evidence of a lake under the planet's south polar ice cap.

Humans have not yet been to Mars, but scientists have sent (10) _____ there to help them research this fascinating planet. The first spacecraft to land on Mars was the Viking Landers, which touched down on the surface in 1976.

F. WRITING

I. Rearrange the words to make meaningful sentences.

1. They/ water and oxygen/ whether/ Mars and its moons/ there/ on/ asked/ were

2. We/ many/ how/ solar/ know/ galaxy/ systems/ don't/ are/ in/ there/ each

3. She/ Solar System/ could/ if/ name/ her younger brother/ all planets/ in/ the/ asked

4. The professor/ on/ Solar System's history/ the/ a/ had/ huge/ influence/ said/ Jupiter/ that

5. A space buggy/ travelling/ the surface/ a vehicle/ the moon/ is/ used for/ of/ on

6. He/ to/ asked/ planet/ travel/ more easily/ one/ humans/ be/ from/ would/ when/ to/ able/ another

7. There/ is/ a field of/ circling/ Saturn/ appears as rings/ ice and rock debris/ that

8. Scientists/ moons,/ have/ any/ doesn't/ Venus/ they/ sure/ aren't/ why/ say/ that/ and

II. Complete the second sentences so that it has a similar meaning to the first one.

1. She asked me, "Can you explain the term 'once in a blue moon'?"

- She asked me
2. The spacecraft might not land on Mars successfully as they expected.
- The spacecraft probably
3. No other moons in the Solar System are as large as Ganymede.
- Ganymede is
4. It's a good idea to look towards the southern sky to see the meteors.
- You should
5. He said to me that he would go to the lecture about aliens the next morning.
- He said to me, “
6. She likes reading science books more than watching science-fiction movies.
- She prefers
7. “Why didn't you take some photos of the lunar eclipse last night?” says his sister.
- His sister asks
8. It was such a long journey that we all were asleep by the time we arrived.
- The journey

REVIEW 4

I. Choose the word whose underlined part is pronounced differently from that of the others.

1. A. n <u>u</u> mber	B. stu <u>d</u> y	C. prod <u>u</u> ct	D. Ven <u>u</u> s
2. A. <u>ch</u> eck	B. tech <u>ni</u> que	C. <u>ch</u> emistry	D. <u>ch</u> emical
3. A. p <u>o</u> ssible	B. teleph <u>o</u> ne	C. d <u>o</u> ctor	D. s <u>o</u> ftware
4. A. creatur <u>e</u> s	B. alien <u>s</u>	C. robot <u>s</u>	D. UFO <u>s</u>
5. A. invent <u>e</u> d	B. discover <u>e</u> d	C. attend <u>e</u> d	D. creat <u>e</u> d

II. Choose the word that has different stress pattern.

1. A. universe	B. waterless	C. connection	D. plentiful
2. A. impossible	B. unpopular	C. informative	D. interactive