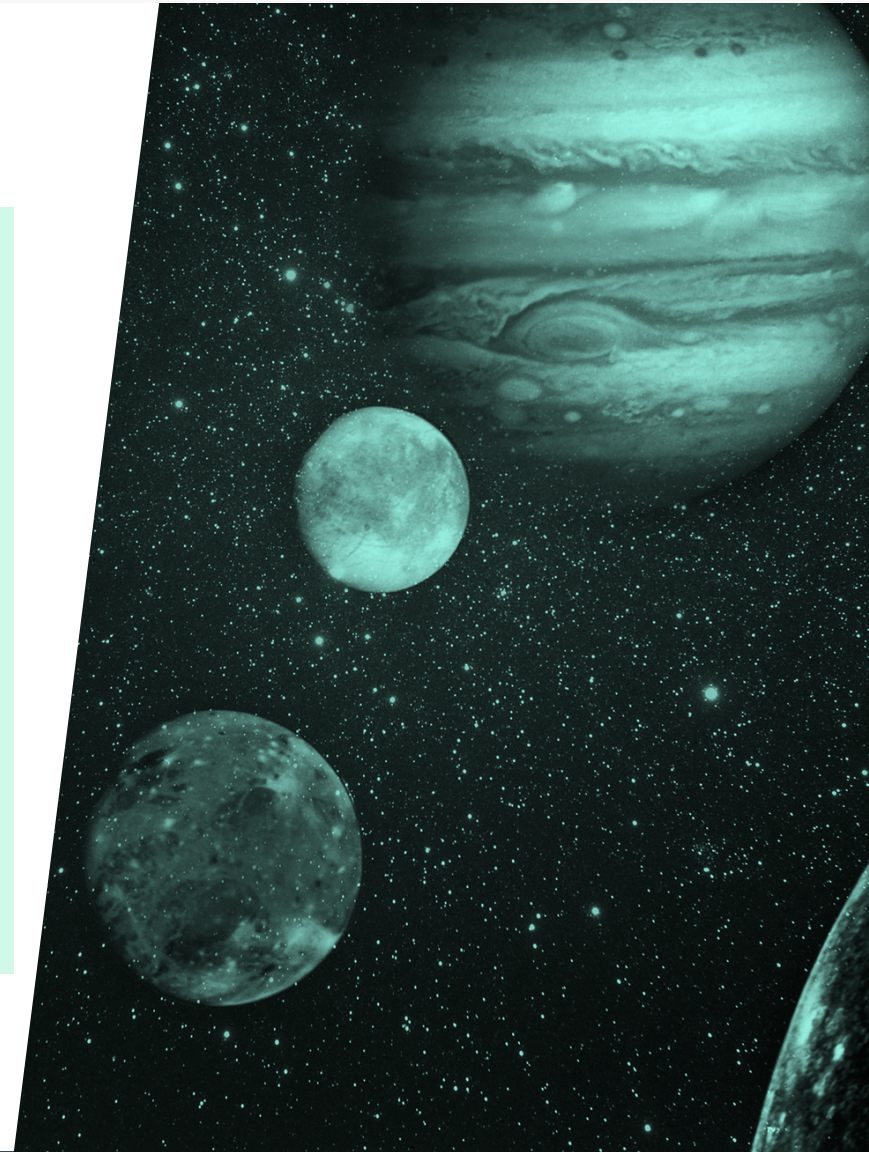




Goals

- Can read and understand the main points of a text about the likelihood of life beyond Earth.
- Can express my opinion on the conditions for life to arise and discuss the possibility of life existing on other planets.





Since the beginning of human history, people have peered into the sky and wondered if **other beings inhabited the stars.**

As we **explore outer space**, the possibility of life on other planets is becoming increasingly possible

We are closer than ever to answering the question - **are we truly alone in the universe?**





Vocabulary

martian life

existence

habitability

astrobiology

dimension

astronomer

observatory

cosmos

speed of light

probe





Sentences



The idea of **martian life** was a regular theme of his books.

The **existence** of aliens had always fascinated her.



The **astronomer** gazed curiously through her telescope.

Through the lens I could see the stars and the **cosmos**.





Sentences



We lost contact with the **probe** we sent to Jupiter.

We can only reach the Andromeda galaxy with the **speed of light**.



Have you considered looking at the problem from another **dimension**?

The city has a high degree of **habitability**.

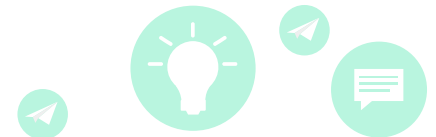




Is there life beyond earth?

Are there thinking beings somewhere in the universe? This is a question that **countless generations** have asked as they have stared upward into the night sky. The ancient Greeks thought that the universe was **inhabited** by an infinite number of worlds and beings.

In the last decades it has become possible to go beyond **theorising** and make a real attempt to explore the universe. Recent technological advances have allowed us to make **tentative steps** into the solar system, **peer deeply** into the depths of space and send satellites and hardware far beyond our ability to follow.





Is there life beyond earth?

When you think about it, it is extremely unlikely that all of the necessary conditions for life only **accidentally** appeared on the surface of the Earth. For life to **flourish** and **evolve**, our planet has required a rather **precise combination** of conditions.



Earth has the perfect conditions to foster life.



Is there life beyond earth?

Adequate air **pressure**, the **presence** of oxygen, water, and a proper distance from the sun to **ensure** the right degree of temperature are only a few of the **atmospheric** requirements that our planet needs to **cultivate** life. Our existence on Earth has often been seen as a **coincidence**, and in our case a very lucky one.





Make sentences

Identify the vocabulary which appeared in the text.
Use each of them in a new sentence.

pressure

necessary

infinite

cultivate

flourish

hardware

atmospheric

degree

tentative



Responding to the article

Answer the questions about the article below.

What are some of the conditions which allow Earth to cultivate life?

Do you think a belief in aliens and life beyond Earth is a popular opinion?
Why?

Do you think our existence on Earth is a coincidence? Explain your answer.

A vertical sheet of lined paper with a blue margin on the left and a spiral binding on the left edge. The paper has several horizontal lines for writing.



Life beyond Earth

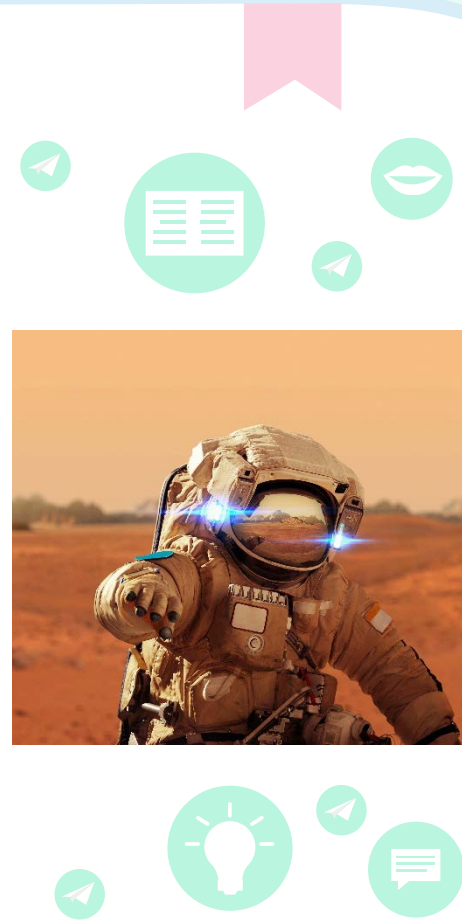
**What is your opinion on the possibility of life beyond Earth?
Do you think searching for aliens is a good idea?**





Is there life beyond earth?

For this reason, it has always been **assumed** that **astrobiology** was purely the **dimension** of science fiction. Certain recent discoveries have changed this opinion. Water has recently been found on Mars, **fuelling speculation** and theories about its **habitability** for life. It is now believed that life possibly began on Mars billions of years ago, when the planet was much warmer and wetter. Since learning that water once flowed **freely** on the red planet, many researchers have been searching for simple **bacterial life** below the planet's crust.





Is there life beyond earth?

Mars is not the only place scientists have interest in either. Titan, Saturn's largest moon, has many environmental **variables** which could support life, while Jupiter's moons contain **ice-covered** oceans which could do the same. Scientists have also developed techniques to **intercept** communications from alien **civilisations**, if they exist, and are actively on the lookout for signals or **transmissions**.



Titan, one of the moons of Saturn, could foster life, despite containing oceans of liquid methane!



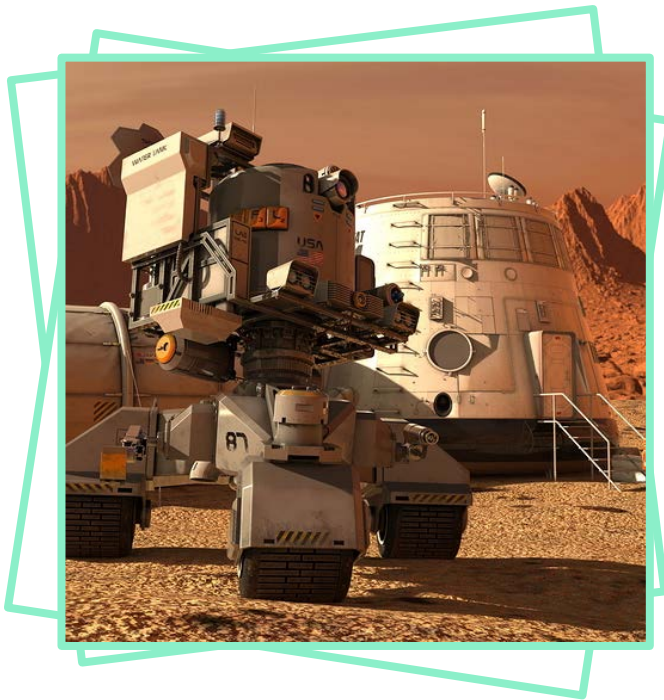
Is there life beyond earth?

It is now known that life can **endure** under extreme conditions. The only **precondition** is the availability of water. Bacteria have been found in the depths of the ocean, and can endure kilometres underground, and in environments of extreme heat or cold. The **tenacity** of bacteria increases the likelihood that life could **take root** in an environment beyond Earth.



Describe the images below

**Describe the locations below and discuss their habitability.
Describe the pictures to your teacher.**





Talk to the teacher

Discuss the likelihood of the following planets for supporting life.



Mars

Jupiter or Saturn's moons

Earth's moon



Write a letter

A probe has just returned from a mission to a new foreign planet. You are a researcher and believe the planet could support alien life. Explain why, using evidence from your probe, in a letter to your colleagues.

A large rectangular box with a black border, containing several horizontal lines for writing. The lines are arranged in a way that suggests a letter format, with a short line at the top right, a longer line on the left, and several lines in the middle. There are also short lines at the bottom left and bottom right.



Contact with aliens

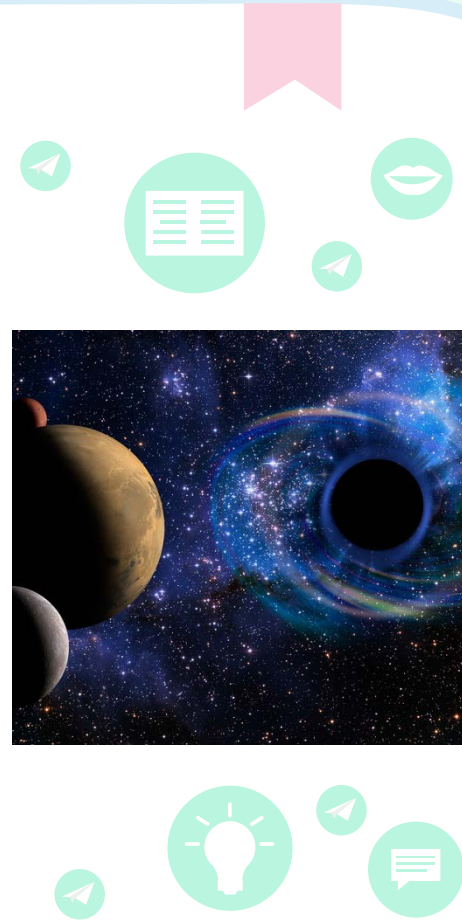
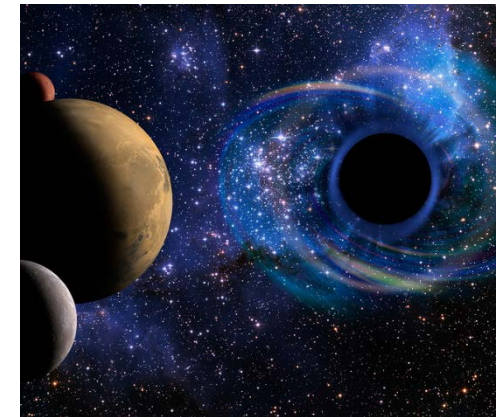


What do you think might happen if humans made contact with aliens?



Is there life beyond earth?

Recent calculations predict that more than a fifth of stars are likely to harbour **habitable** planets like Earth. The closest to us would likely be light years away. While this may be nothing in the **cosmic scale** of the universe, it is still beyond our capabilities to investigate, short of travelling at the **speed of light**.

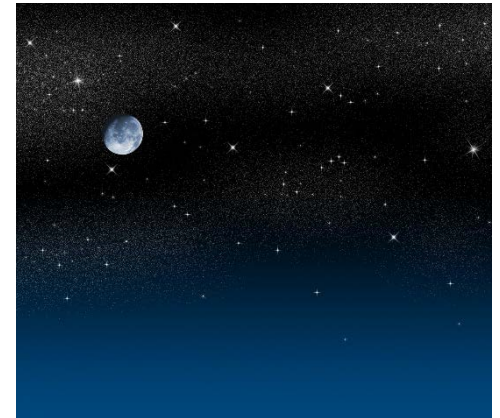




Is there life beyond earth?

With the multitude of galaxies and **inconceivable** breadth of the **cosmos**, it is more than likely that other systems contain planets which contain the **delicate** balance of conditions to **foster life**.

Whether that life is as developed as we are, or are **merely** simple **bacteria** is unknown. The likelihood of such a planet being close enough for us to observe is extremely unlikely.



The stars are billions of light years away, and would take thousands of generations to reach.



Is there life beyond earth?

With these recent discoveries, it is now expected that life on other planets will be found in the near future. Leading scientists and researchers **speculate** that evidence of life beyond Earth will likely be discovered in the coming decades. The view that the universe is home to many **habitable** environments is growing. This is likely to be one of those cases in which science fiction becomes science. The **discovery** of life beyond ourselves would lead to many interesting questions about our own **existence**, and likely answer many of our deeper questions about the **cosmos**.



Discuss with the teacher

What are these phrases referring to in the article?



...it is more than likely that other systems contain planets which contain the delicate balance of conditions to foster life.

Leading scientists and researchers speculate that evidence of life beyond Earth will likely be discovered in the coming decades.

...actively on the lookout for signals or transmissions

...predict that more than a fifth of stars are likely to harbour habitable planets like Earth.

...beyond our capabilities to investigate, short of travelling at the **speed of light.**



Summarise your learning

Write about the possibility of life beyond Earth.

Write a paragraph summarising your view on life beyond Earth.

Some points you might like to consider include:

- What risks are involved in contact with life beyond Earth?
- What breakthroughs may occur in this field in the future?
- Do you think it is likely that life will be discovered on other planets in our solar system?



Read back over the previous slides if you need to consider your answer carefully.



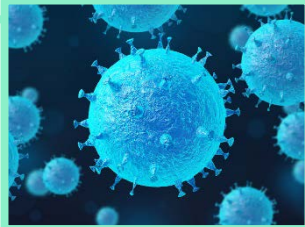
Scenarios

Make projections about future scenarios related to our search for life beyond Earth.

Consider what you understand about technology and current research on the topic.

Discuss the most likely scenario below with the teacher.

We may find evidence of basic life on other planets in our solar system.



We are the only advanced beings in the universe



Advanced alien life will contact us.



Alien life is already watching us.





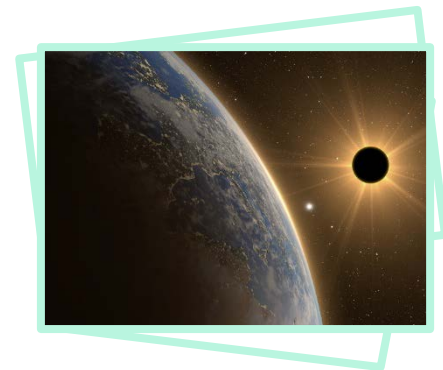
Dictogloss

Your teacher is going to read an extract of the text to you.
Write down what you hear them say.

A stack of lined paper with a faint globe watermark in the background. The paper has several horizontal lines for writing.



abc



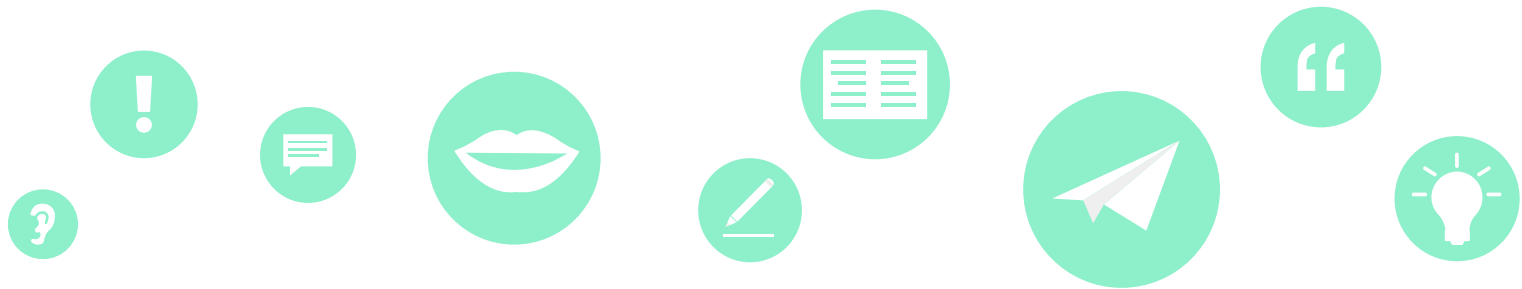


Reflect on the goals

Go back to the second slide of the lesson and check if you have achieved all the goals of the lesson.

yes

no



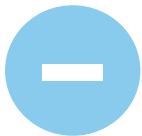


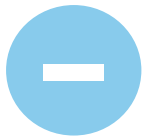
Reflect on this lesson

Think about everything you have seen in this lesson.
What were the most difficult activities or words? The easiest?









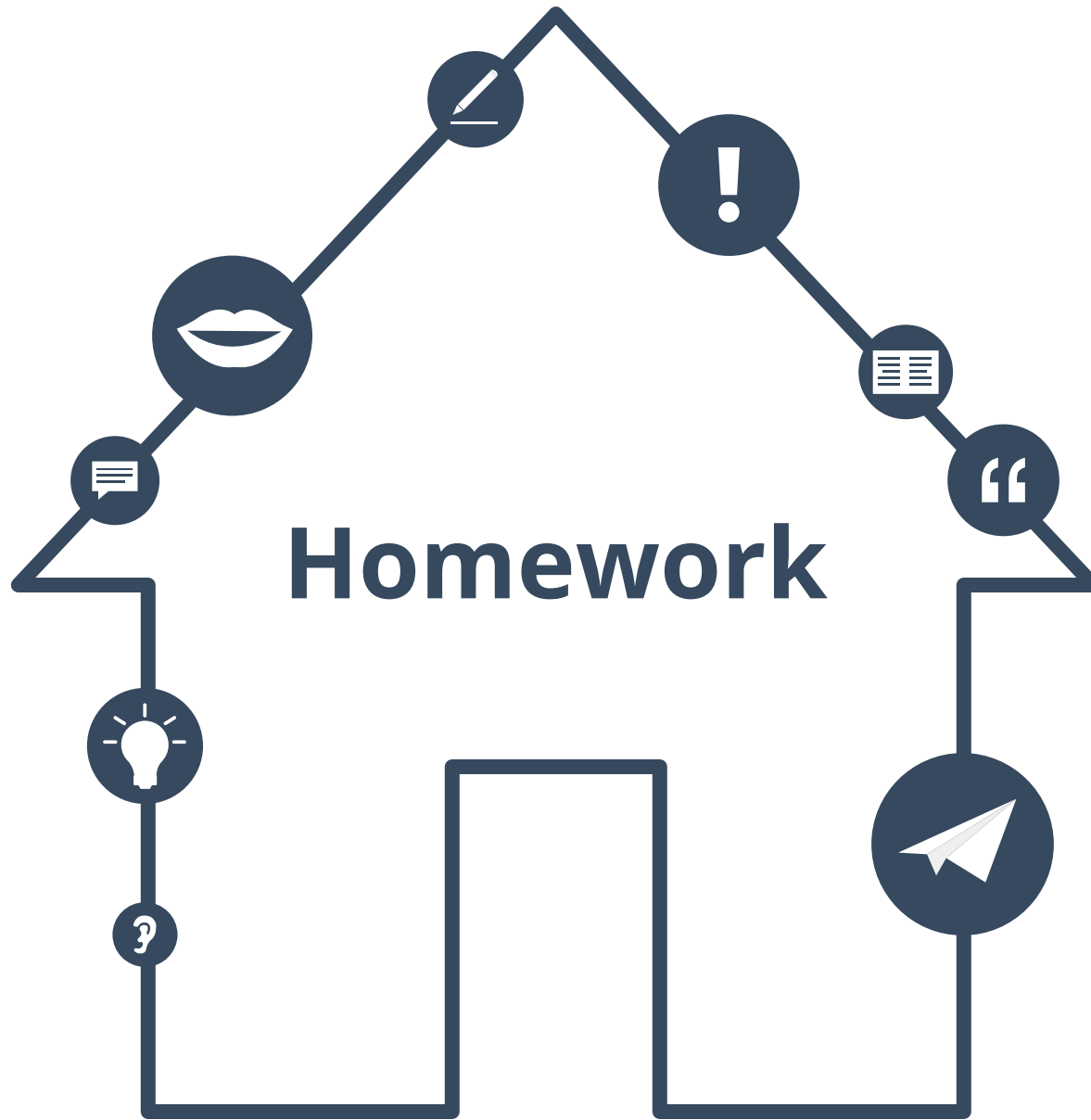
If you have time, go over
the most difficult slides again





Transcription

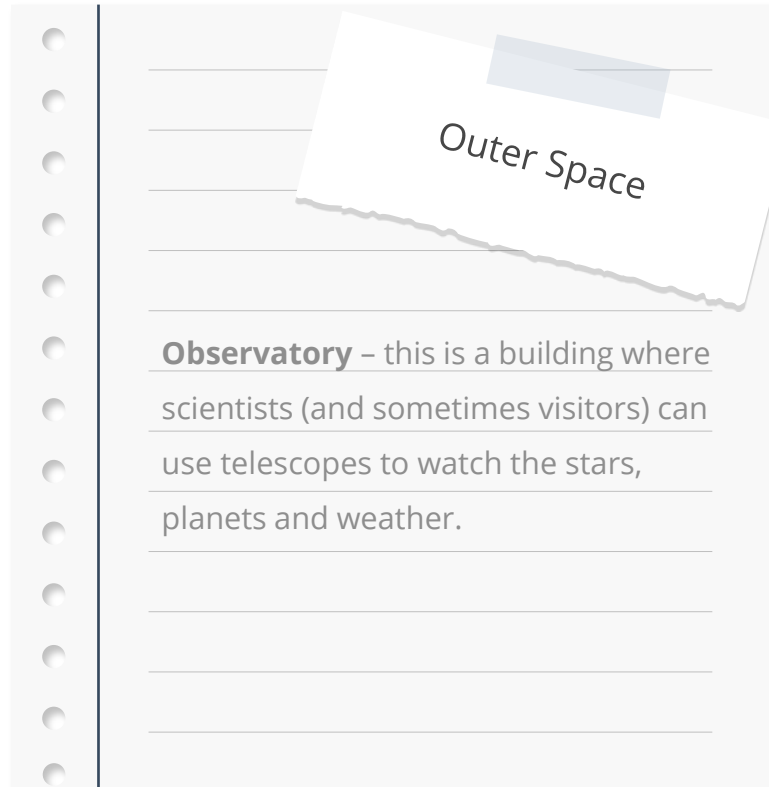
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Evaluate the lesson

Use the space below to list and describe any new words you have discovered in this lesson.

A graphic of a notepad with a spiral binding on the left. A white sticky note is attached to the top right of the page with a blue tab. The sticky note has the text "Outer Space" written on it. Below the sticky note, the notepad page has several horizontal lines for writing. One line is pre-filled with the text: "Observatory - this is a building where scientists (and sometimes visitors) can use telescopes to watch the stars, planets and weather." The rest of the lines are blank.

Outer Space

Observatory - this is a building where scientists (and sometimes visitors) can use telescopes to watch the stars, planets and weather.

