

# The Moon

Do you ever look at the Moon at night? Do you wonder what it would be like to visit the moon? Read on to find out more...

## Moon and Sun

The Moon shines very brightly, but it does not make its own light. It reflects the light of the Sun. When the Sun comes up for our daytime, it appears that the Moon goes away, but it doesn't. It's just harder to see because the sky is so bright. Sometimes, if you look carefully, you can see the Moon in the sky during the day.

## Orbit

The Moon is the only thing that naturally goes around (orbits) the Earth – anything that does this is called a satellite. It takes the Moon about 28 days to go around the Earth once, we call this a lunar month.





The phases of the Moon depend on its position in relation to the Sun and Earth. As the Moon makes its way around the Earth, we see the bright parts of the Moon's surface at different angles. These are called the 'phases' of the Moon.

### Did You Know...?

We only ever see the same side of the Moon. This is called the 'near side'.

## Moon Phases

The phases of the Moon depend on its position in relation to the Sun and Earth. As the Moon makes its way around the Earth, we see the bright parts of the Moon's surface at different angles. These are called the 'phases' of the Moon. Some of these phases include:

	
<b>First Quarter</b>	<b>Full Moon</b>
	
<b>Last Quarter</b>	<b>New Moon</b>

# The Moon



## Moon Facts

- Day temperature: 107°C
- Night temperature: -153°C
- Distance from Earth: 238 857 miles (384 403km)
- Diameter (from one side to the other): 2160 miles (3476km)
- Length of Day: 708 hours

## What Is It Like on The Moon?

The Moon is very hot during the day but very cold at night. The surface of the Moon features a huge number of craters (large holes) that have been created after being hit by comets and asteroids. The Moon has many mountains. The tallest is Mons Huygens which is 4700 metres tall; half the height of Mount Everest.

The Moon does not have an atmosphere like Earth does and therefore it is not possible to breathe on the moon without a special suit and tanks containing oxygen. The moon is also a very dry place and was thought to be completely without water. However, about a decade ago, traces of water were discovered. Some people now believe that humans may one day be able to live on the Moon.

Only 12 people have ever walked on the Moon. The first person was Neil Armstrong on 20<sup>th</sup> July 1969. When he first walked on the Moon, he famously said, 'That's one small step for man, one giant leap for mankind'. There were two other men on the mission: Edwin 'Buzz' Aldrin and Michael Collins. They were part of a mission to the moon called Apollo 11. It took them just over three days to get there from Earth.

You may have seen a film of people walking on the Moon and they bounce along. This is because the Moon's gravity is not as strong as the Earth's so people take longer to come back down when they go up in the air.

# Questions

1. Fill in the missing words:

When the \_\_\_\_\_ comes up for our daytime, it appears that the \_\_\_\_\_ goes away, but it doesn't. It's just harder to see because the \_\_\_\_\_ is so bright.

2. On average, how cold does it get on the Moon at night? Tick **one**.

- 107°C
- 708°C
- 153°C
- 153°C

3. What is the diameter of the Moon in kilometres?

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4. **Find** and **copy** a word which means to **go around** something.

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5. How many days does a lunar month take? Tick **one**.

- 30
- 28
- 31
- 29

6. Explain what happens to the Moon in the daytime.

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7. In your own words, describe what it is like on the Moon.

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8. Explain why astronauts appear to bounce when they are walking on the Moon.

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# Answers

1. Fill in the missing words:

When the **Sun** comes up for our daytime, it appears that the **Moon** goes away, but it doesn't. It's just harder to see because the **sky** is so bright.

2. On average, how cold does it get on the Moon at night? Tick **one**.

- 107°C
- 708°C
- 153°C
- 153°C

3. What is the diameter of the Moon in kilometres?

**3476km**

4. **Find** and **copy** a word which means to **go around** something.

**orbit**

5. How many days does a lunar month take? Tick **one**.

- 30
- 28
- 31
- 29

6. Explain what happens to the Moon in the daytime.

**Pupil's own response, such as: In the daytime, the Moon does not disappear. It just cannot be seen because when the Sun is up because the sky is too bright.**

7. In your own words, describe what it is like on the Moon.

**Pupil's own response, such as: On the Moon, it is very hot in the day but very cold at night. There are lots of craters which have formed after being hit by comets and asteroids. There are mountains and just recently, traces of water have been discovered.**

8. Explain why astronauts appear to bounce when they are walking on the Moon.

**Pupil's own response, such as: Astronauts appear to bounce because there is hardly any gravity pulling them back towards the Moon and so it takes them longer to come back down when they go up in the air.**

# The Moon

Do you ever look at the Moon at night and see the Moon shining down and lighting up the night-time town? Do you wonder what it would be like to visit the Moon or wonder why it shines so bright? Read on to find out all about our planet's moon.

## Moon and Sun

The Moon shines very brightly, but it is only reflecting the light of the Sun because it cannot make its own light. When the Sun comes back up for our daytime, it appears as if the Moon has disappeared, but it doesn't, it's just harder to see because the sky is so bright. Sometimes, if you look carefully, you can see the Moon in the sky during the daytime.

## Orbit

The Moon is the Earth's only natural satellite (that means something that orbits a larger object). It takes the Moon about 28 days to go around the Earth once; we call this a lunar month. During this time, we only ever see the same side of the Moon as it rotates slowly whilst it moves around us. The side we see is called the 'near side'.

During its orbit, the angle between the Earth, Moon and Sun changes so the part of the Moon that is lit up cannot always be seen from Earth. This is what gives us the phases of the moon, when it is waxing (growing bigger) and waning (getting smaller) with shapes including crescent and gibbous.

The eight phases of the Moon are:

			
<b>First Quarter</b>	<b>Waxing Crescent</b>	<b>New Moon</b>	<b>Waning Crescent</b>
			
<b>Third Quarter</b>	<b>Waning Gibbous</b>	<b>Full Moon</b>	<b>Waxing Gibbous</b>

# The Moon



## Moon Facts

- Average temperature in the day: 107°C
- Average temperature at night: -153°C
- Distance from Earth: 238 857 miles (384 403km)
- Diameter (distance from one side to the other): 2160 miles (3476km)
- Length of Day: 708 hours

## What Is It Like on The Moon?

The Moon is extremely hot during the day but very cold at night. The surface of the Moon features a vast number of craters that have occurred after collisions with comets and asteroids. The Moon has many mountains, the tallest of which is Mons Huygens. It is 4700 metres tall; half the height of Mount Everest.

The Moon does not have an atmosphere like Earth does and therefore it is not possible to breathe on the moon without a special suit and tanks containing oxygen. The moon is also a very dry place and was thought to be completely without water. However, about a decade ago, traces of water were discovered. Some people now believe that humans may one day be able to live on the Moon.

Only 12 people have ever walked on the Moon. The first person to do this was Neil Armstrong on 20<sup>th</sup> July 1969. When he first walked on the Moon, he famously said, 'That's one small step for man, one giant leap for mankind'. There were two other men on the mission: Edwin 'Buzz' Aldrin and Michael Collins. Together, they formed the crew of the Apollo 11 mission. It took them just over three days to get there from Earth, blasting off in a Saturn V rocket from the Kennedy Space Centre, USA on July 16<sup>th</sup> 1969.

### Did You Know...?

'Selenophobia' is the fear of the Moon.

You may have seen a film of people bouncing, rather than walking on the Moon. It isn't quite the same as walking on the Earth because the Moon's gravity is weaker than the Earth's gravitational force so people take longer to return to the surface when they go up in the air.

# Questions

1. What word can be used to complete the sentence below:

The Moon cannot make its own... Tick **one**

- gravity
- water
- light
- heat

2. How far away is the Moon from the Earth in km? Tick **one**.

- 3476km
- 384 403km
- 2160km
- 238 857km

3. Explain what a lunar month is.

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4. What word is used to describe when the Moon appears to be getting smaller?

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5. What is selenophobia?

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6. Why can humans not live on the Moon (at the moment)? Use evidence from the text to support your answer.

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7. Who was the first man to walk on the Moon?

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8. Explain in your own words what you think Neil Armstrong meant when he said, 'That's one small step for man, one giant leap for mankind.'

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9. Would you like to visit the Moon? Explain your answer fully using evidence from the text to support your answer.

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# Answers

1. What word can be used to complete the sentence below:

The Moon cannot make its own... Tick one

- gravity
- water
- light**
- heat

2. How far away is the Moon from the Earth in km? Tick **one**.

- 3476km
- 384 403km**
- 2160km
- 238 857km

3. Explain what a lunar month is.

**Pupil's own response, such as: A lunar month refers to the time it takes (28 days) for the moon to orbit (go around) the Earth once.**

4. What word is used to describe when the Moon appears to be getting smaller?

**waning**

5. What is selenophobia?

**fear of the Moon**

6. Why can humans not live on the Moon (at the moment)? Use evidence from the text to support your answer.

**Pupil's own response, such as: Humans cannot live on the Moon because there is hardly any gravity to keep them pulled down to the surface; it is extremely hot in the day and very cold at night and there are only very small traces of water. There is also no atmosphere which means we couldn't breathe without special suits and tanks of oxygen.**

7. Who was the first man to walk on the Moon?

**Neil Armstrong**

8. Explain in your own words what you think Neil Armstrong meant when he said, 'That's one small step for man, one giant leap for mankind.'

**Pupil's own response, such as: I think that Neil Armstrong meant that as he was physically stepping foot on to the Moon, mankind was actually discovering new things about the universe and gaining a better understanding of it.**

9. Would you like to visit the Moon? Explain your answer fully using evidence from the text to support your answer.

**Pupil's own response, such as: Yes, I would like to visit the Moon because only 12 people have stepped foot on it so far so it would be a unique experience. It would be fascinating to look down on Earth from the Moon.**

**OR**

**No, I would not like to visit the Moon because the conditions would be very uncomfortable and dangerous. Comets and asteroids crash into the Moon and it gets very cold at night.**

# The Moon

Do you ever look at the Moon at night and see the glowing sphere lighting up the nighttime town? Do you sometimes ponder what it would be like to visit the Moon or wonder why it shines so bright? Well here's some fact and figures that might interest you.

## The Moon and The Sun

The Moon shines extremely brightly but it is only reflecting the rays of the Sun whilst it is round the other side of the Earth. The Moon cannot make its own light as it is not a star like the Sun. When we rotate back towards the Sun for our daytime, people used to believe that Moon had disappeared or moved. However, it's just harder to see because the sky is so bright. Sometimes, if you look carefully, you can see the Moon in the sky during the daytime.

## Orbit

The Moon is the Earth's only natural satellite (that means something that orbits a larger object). It takes the Moon approximately 28 days to go around the Earth once; this is referred to as a lunar month. During this time, we only ever see the same side of the Moon as it rotates slowly while it moves around us. The Moon is not quite spherical and is slightly heavier on one side so gravity keeps the heavier side facing us.

During its orbit, the angle between the Earth, Moon and Sun changes so the part of the Moon that is lit up cannot always be seen from Earth. This is what gives us the phases of the moon, when it is waxing (growing bigger) and waning (getting smaller) with shapes including crescent and gibbous.

The eight phases of the Moon are:

			
<b>First Quarter</b>	<b>Waxing Crescent</b>	<b>New Moon</b>	<b>Waning Crescent</b>
			
<b>Third Quarter</b>	<b>Waning Gibbous</b>	<b>Full Moon</b>	<b>Waxing Gibbous</b>



### **Moon Facts**

- The average temperature on the Moon in the day is 107°C and at night-time is -153°C.
- The distance between the Moon and the Earth is 238 857 miles (384 403km) and the distance from one side of the Moon to the other is 2160 miles (3476km).
- The length of one day on the Moon is 708 hours.

### **What Is It Like On The Moon?**

Conditions on the Moon are extreme. It is desperately hot during the day but extremely cold at night. The surface of the Moon is covered in craters caused by collisions with comets and asteroids. The Moon has many mountains, the tallest of which is Mons Huygens that stands at 4700 metres tall; half the height of Mount Everest.

The Moon does not have an atmosphere like Earth does and therefore it is not possible to breathe on the moon without a suit and tanks containing oxygen. Scientists also once believed that the Moon was completely arid. However, about a decade ago, small traces of water were discovered. As a result, some people now believe that humans may one day be able to live on the Moon.

#### **Did You Know...?**

'Selenophobia' is the fear of the Moon.

Only 12 people have ever walked on the Moon! The first person to do this was Neil Armstrong on 20<sup>th</sup> July 1969. This record-breaking event was watched on television by an estimated 600 million people around the world. When he first walked on the Moon, Armstrong famously said, 'That's one small step for man, one giant leap for mankind.' On this mission, known as Apollo 11, there were two other crewmen: Edwin 'Buzz' Aldrin and Michael Collins. It took them just over three days to get there after blasting off from the Kennedy Space Centre on 16<sup>th</sup> July in a Saturn V rocket. When the astronauts returned to Earth, they had to be placed in quarantine for 21 days to make sure that they were not carrying any micro-organisms from the Moon that could be dangerous.

You may have seen a film of people bouncing, rather than walking on the Moon. It isn't quite the same as walking on the Earth because the Moon's gravity is weaker than the Earth's gravitational force so people take longer to return to the surface when they go up in the air. Astronauts are required to always be tethered, otherwise there is a risk of drifting off into space.

# Questions

1. Why do you think the author chose to start the non-chronological report with rhetorical questions?

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2. **Find** and **copy** a word that means **dry**.

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3. How long does a day on the Moon last? Tick **one**.

- 107 hours
- 708 hours
- 153 hours
- 2016 hours

4. What does the word waxing mean?

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5. How many days did Neil Armstrong and his colleagues have to spend in quarantine? Tick **one**.

- 11
- 600
- 28
- 21

6. Explain why the Moon has different phases during its cycle.

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7. Read the following sentence:

'Only 12 people have ever walked on the Moon!'

Why do you think an exclamation mark has been used at the end of this sentence?

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8. Name one way in which the Moon is similar to Earth and one way in which it is different.

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9. Why do you think so many people tuned in to watch the Moon landing?

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10. **Find** and **copy** a word that means '**attached**'.

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# Answers

1. Why do you think the author chose to start the non-chronological report with rhetorical questions?

**Pupil's own response, such as: The report opens with rhetorical questions to hook the reader in and to make them think about the Moon and what they already know or don't know about it.**

2. **Find** and **copy** a word that means **straight towards**.

**arid**

3. How long does a day on the Moon last? Tick **one**.

- 107 hours  
 **708 hours**  
 153 hours  
 2016 hours

4. What does the word waxing mean?

**getting bigger**

5. How many days did Neil Armstrong and his colleagues have to spend in quarantine? Tick **one**.

- 11  
 600  
 28  
 **21**

6. Explain why the Moon has different phases during its cycle.

**Pupil's own response, such as: The Moon has different phases because the angle between the Earth, Moon and Sun changes so the part of the Moon that is lit up cannot always be seen from Earth.**

7. Read the following sentence:

'Only 12 people have ever walked on the Moon!'

Why do you think an exclamation mark has been used at the end of this sentence?

**Pupil's own response, such as: An exclamation mark has been used to show that this is an impressive and surprising fact.**

8. Name one way in which the Moon is similar to Earth and one way in which it is different.

**Pupil's own response, such as: One way in which the Moon and Earth are similar is that they both have mountains.**

**One way in which the Moon and Earth are different is...**

**Accept any of the following points:**

- **that there is hardly any gravity on the Moon whereas we are pulled to Earth by gravity.**
- **that there is very little water on the Moon but Earth is made up of more water than land.**
- **that it is extremely hot in the daytime on the Moon (107°C) and extremely cold at night (-153°C). The temperatures on Earth are no where near as hot or cold as that.**
- **that the length of one day on the Moon is 708 hours and on Earth it is 24 hours.**
- **that the moon has no atmosphere and we would not be able to breathe without oxygen tanks unlike Earth which has a rich atmosphere which we can breathe.**

9. Why do you think so many people tuned in to watch the Moon landing?

**Pupil's own response, such as: I think so many people tuned in to watch the Moon landing because it was a ground-breaking moment and people would have wanted to see it with their own eyes in order to believe it. No one had ever reached the Moon before let alone walk on it. People did not know what the Moon's surface looked like before now and this allowed them to actually see the surface up close.**

10. **Find and copy** a word that means 'attached'.

**tethered**