All about the moon landing: Man's mission to the Moon

This month sees the 50th anniversary of the Moon landings. Use our article about the historic event to inspire learning in English lessons or across the curriculum.

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English in context

Vocabulary work

The following activities use the article to develop vocabulary:

- Identify new vocabulary from the text, for example, **module, descent, lunar, orbit, automatically, atmosphere,** and explore meaning.
- Use the article to study words in order to spell them. Write a word from the text, for example, **commander**. Find the words within the word (**comma**, **and**, **command**, **an**). In pairs, find five words and the words within them. Challenge the children to find the word from the text with the most words within it.
- Highlight verbs in the past tense. Examine verbs that do and do not end in **–ed**. Write incorrect sentences, for example, *Apollo 11 goes to the Moon*. Children must then correct them. Ensure that there are some irregular past tense verbs to correct as well as regular **–ed** endings.
- Take a simple sentence based on the text, for example, *Armstrong walked on the Moon slowly*. Generate adverbs to replace the given adverbs. The replacements must make sense, for example, *carefully, determinedly*. Allow children to investigate adverbial phrases and develop their understanding that an adverb can show degrees of intensity and how, where and when. They are not just words that end in **–ly**!
- Take two words from the text, for example, **rocket** and **mission**. Write sentences starting with *because of, although, despite* and *after*. Investigate how these complex sentences should be punctuated accurately. Repeat with other word pairs.

Reading Comprehension

This article might be used in a guided reading session, as a classroom reading task for pairs, or given as homework to consolidate learning. Use the questions below or create your own to suit your class:

1. Who were the Americans challenging in the Space Race?
2. How many people watched the launch of Apollo 11 at Cape Kennedy?
3. Find and copy the word which tells us that the number of people who watched Armstrong take his first steps on the Moon on television was an estimate.
4. Armstrong famously said '"That's one small step for man, one giant leap for mankind." What do you think he meant by this?
5. Why did the author call Katherine Johnson 'the human computer'?
6. Look at the section *What's it like on the Moon?* What does the word 'envelop' suggest about the planet's atmosphere?
7. Where did the welcome home parade take place?
8. Why do you think so many people wanted to watch the adventures of the astronauts?
9. What phrase does the author use to make the reader understand how important Katherine Johnson's job was?
10. The crew were described as 'national heroes.' Why do you think this is?

Writing tasks

The Moon landing is a perfect topic to develop children's writing. Here are some ideas to help inspire a variety of lively writing outcomes:

- Watch **tinyurl.com/TWJmoonlanding**. Write a commentary to describe the event. Convey the emotions of the audience or news anchor when watching the historic moment.
- Create a timeline showing other key dates in the Space Race. This could include investigating Yuri Gagarin and the Space Race from the Russian perspective.
- Imagine that you are Neil Armstrong. Describe your feelings as you land on the Moon and prepare to take your first steps on the surface. Use all the senses to describe as you walk across the Moon's surface and look at Earth from a different viewpoint.
- Use drama and hot seating to explore the thoughts and feelings of Michael Collins, the man left behind in the command module. Many people feel that he was the forgotten astronaut. *Did he feel this way? What was it like for him to watch Armstrong land the lunar module with only 30 seconds worth of fuel left before there was a disaster?*
- Discover the images on **STEM.org.uk**. These are free to download. They cover all aspects of the Apollo 11 journey from the initial launch to the astronauts' return to Earth. Linked to further research, these can be used as writing stimuli to create a non-fiction piece explaining what happened at each point in the mission.

Cross-curricular opportunities

Maths

- Consolidate work on angles as part of turn and directional language. Inform pupils that they will be giving their partner instructions to direct them walking on the Moon. Set up a scenario either inside or outside the classroom where students direct each other from one point to another. Discuss the need to be precise when giving directions. *Which way should the turn be?* Reinforce the language of clockwise and anticlockwise. Children can describe half, whole and quarter turns.
- Demonstrate and talk about the use of compass points. Introduce appropriate terms, for example, the four major directions: north, south, east and west. Extend this to north-west, south-east and use initials to show compass direction.
- Develop the understanding that a whole turn is 360 degrees. Work out how many degrees there are in half a turn, a quarter of a turn etc.
- Link the idea that a quarter of a turn is 90 degrees and a right angle. Identify right angles in the classroom and in three dimensions, for example, in the corner of a room.

PSHE

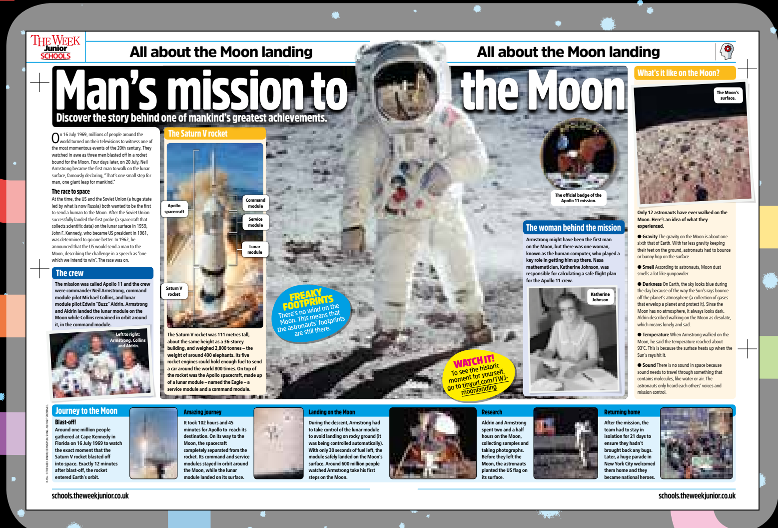
- Discuss the importance of working in a team. The Moon landing would never have happened if Michael Collins, Buzz Aldrin and Neil Armstrong had not worked together. Discuss, *what makes a good team?* People who listen to each other, take turns to speak, compromise and allow everyone an equal say.
- Link this to P.E and the maths activities based around directional language. Play some team building games e.g. Divide the class into two teams. Ask a pair of children to complete a simple obstacle course while blindfolded. Teamwork is important as the children must put into practice listening to each other as they attempt to navigate themselves to the end of the course.

Design/Technology

- Challenge the children in teams to design and build a habitat on the moon. *What would humans need to live there?* (Air, water, sunlight, temperature regulation). *How might they overcome the lack of gravity?* Use clips of the International Space Station to show pupils some of the problems astronauts currently have in space.
- There is no specific design criteria, but the children can imagine that they are the space designers of the future. Write simple labels on the design diagrams to explain how they work. Children can create shoebox habitats and display them in the classroom.

Art

- Look at a variety of images of the Moon taken from the Earth. Remember, we see the Moon from one perspective but people in other parts of the world do not see what we see. Highlight the similarities and differences between varied views of the Moon.
- Tell the children that the darker areas on the Moon are known as seas. Identify the colours, shapes and textures in each image. Describe them to a partner.
- Recreate the image of the Moon using a variety of media e.g. pencil/charcoal drawings to highlight shade and dark. Use black sugar paper and draw with chalk or oil pastels. Paint and practise mixing different shades of one colour (e.g. grey or blue). Using observational skills, make the image of the Moon as realistic as possible.



Science

- Investigate craters. Use a tray of sieved flour with hot chocolate powder sprinkled on top. Pupils investigate the link between the height from which an object is dropped, in relation to the size of the crater that is formed by the impact. Measure the height at increasing intervals with a minimum of a ruler's length between the drops. Use a metre stick or roll a tape to measure.
- *Can the children explain their findings in a scientific way?* They can also use a ruler to measure the diameter of the craters. The hot chocolate makes it very clear to see where the edges are.

History

- Research the Space Race. *Why was it so important to both Russia and America to be the first to have a man walk on the moon? What were the obstacles and successes along the way?* Examples might be, the first satellite Sputnik October 4th 1957 (USSR) or the first animal to be launched into space.
- Use these key events to design a game like snakes and ladders to reflect the events that led up to Neil Armstrong's historic footsteps on the moon.
- Create a *Horrible Histories* style sketch in groups to show who the key individuals were when we look back at the history of space travel. Children can watch snippets of the programme via YouTube. These are often humorous, but always factual. Present sketches to the class once researched and refined.
- Compare and contrast the former USSR and the USA at that point in history. Identify and name the leaders of the two countries, the politics of socialism and capitalism in a simplified way. Explore the Cold War. *Why were the two countries involved so opposed to each other?*

Music

- Listen and appraise the music of 2001: A Space Odyssey or Sprach Zarathustra. Ask children to close their eyes. *What picture does the music build for them?* Draw it or describe it to a partner. *How does the music make them feel?* Encourage children to be ambitious with their word choice. *What instruments can be heard? Why did the composer choose them?*

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All about the Moon landing

Man's mission to the Moon

Discover the story behind one of mankind's greatest achievements.

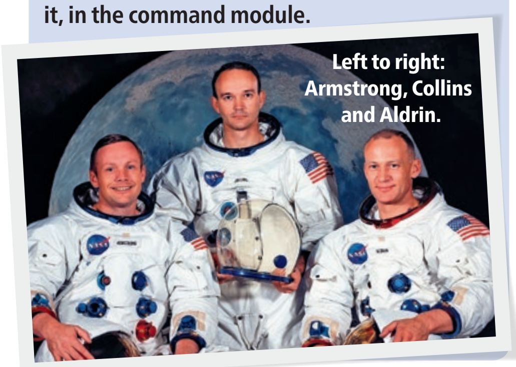
On 16 July 1969, millions of people around the world turned on their televisions to witness one of the most momentous events of the 20th century. They watched in awe as three men blasted off in a rocket bound for the Moon. Four days later, on 20 July, Neil Armstrong became the first man to walk on the lunar surface, famously declaring, "That's one small step for man, one giant leap for mankind."

The race to space

At the time, the US and the Soviet Union (a huge state led by what is now Russia) both wanted to be the first to send a human to the Moon. After the Soviet Union successfully landed the first probe (a spacecraft that collects scientific data) on the lunar surface in 1959, John F. Kennedy, who became US president in 1961, was determined to go one better. In 1962, he announced that the US would send a man to the Moon, describing the challenge in a speech as "one which we intend to win". The race was on.

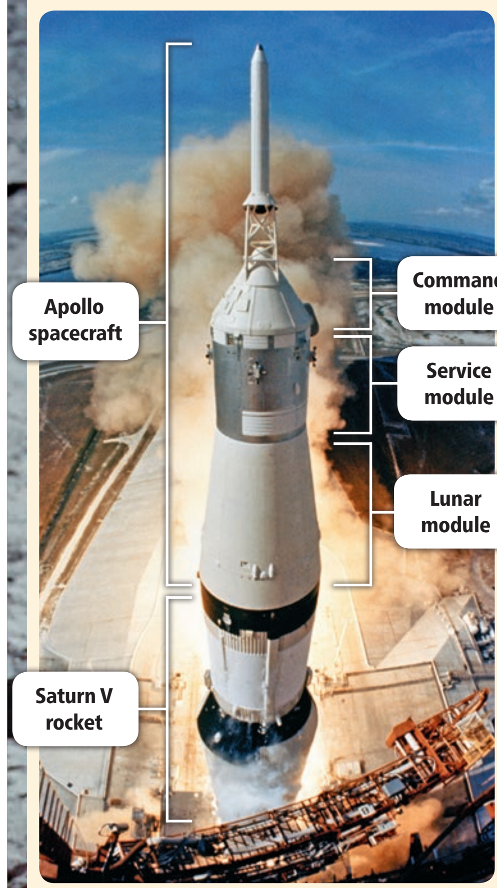
The crew

The mission was called Apollo 11 and the crew were commander Neil Armstrong, command module pilot Michael Collins, and lunar module pilot Edwin "Buzz" Aldrin. Armstrong and Aldrin landed the lunar module on the Moon while Collins remained in orbit around it, in the command module.



Left to right: Armstrong, Collins and Aldrin.

The Saturn V rocket



The Saturn V rocket was 111 metres tall, about the same height as a 36-storey building, and weighed 2,800 tonnes – the weight of around 400 elephants. Its five rocket engines could hold enough fuel to send a car around the world 800 times. On top of the rocket was the Apollo spacecraft, made up of a lunar module – named the Eagle – a service module and a command module.

FREAKY FOOTPRINTS
There's no wind on the Moon. This means that the astronauts' footprints are still there.

The official badge of the Apollo 11 mission.

The woman behind the mission

Armstrong might have been the first man on the Moon, but there was one woman, known as the human computer, who played a key role in getting him up there. Nasa mathematician, Katherine Johnson, was responsible for calculating a safe flight plan for the Apollo 11 crew.

Katherine Johnson

WATCH IT!
To see the historic moment for yourself, go to tinyurl.com/TWJ-moonlanding

What's it like on the Moon?

The Moon's surface.

Only 12 astronauts have ever walked on the Moon. Here's an idea of what they experienced.

- **Gravity** The gravity on the Moon is about one sixth that of Earth. With far less gravity keeping their feet on the ground, astronauts had to bounce or bunny hop on the surface.
- **Smell** According to astronauts, Moon dust smells a lot like gunpowder.
- **Darkness** On Earth, the sky looks blue during the day because of the way the Sun's rays bounce off the planet's atmosphere (a collection of gases that envelop a planet and protect it). Since the Moon has no atmosphere, it always looks dark. Aldrin described walking on the Moon as desolate, which means lonely and sad.
- **Temperature** When Armstrong walked on the Moon, he said the temperature reached about 93°C. This is because the surface heats up when the Sun's rays hit it.
- **Sound** There is no sound in space because sound needs to travel through something that contains molecules, like water or air. The astronauts only heard each others' voices and mission control.

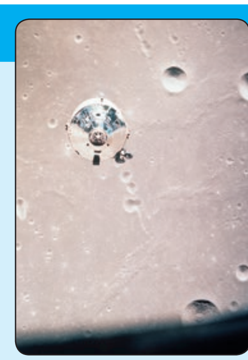
Journey to the Moon

Blast-off!

Around one million people gathered at Cape Kennedy in Florida on 16 July 1969 to watch the exact moment that the Saturn V rocket blasted off into space. Exactly 12 minutes after blast-off, the rocket entered Earth's orbit.

Amazing journey

It took 102 hours and 45 minutes for Apollo to reach its destination. On its way to the Moon, the spacecraft completely separated from the rocket. Its command and service modules stayed in orbit around the Moon, while the lunar module landed on its surface.

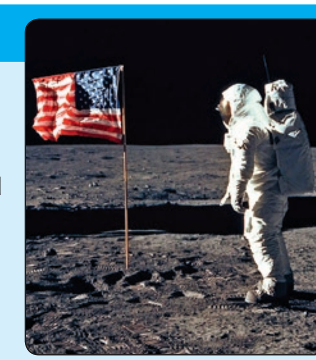


Landing on the Moon

During the descent, Armstrong had to take control of the lunar module to avoid landing on rocky ground (it was being controlled automatically). With only 30 seconds of fuel left, the module safely landed on the Moon's surface. Around 600 million people watched Armstrong take his first steps on the Moon.

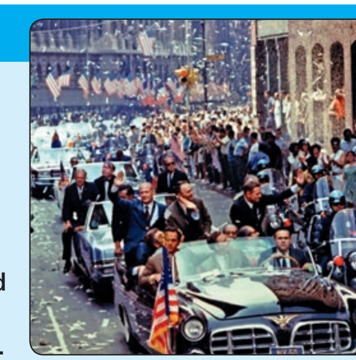
Research

Aldrin and Armstrong spent two and a half hours on the Moon, collecting samples and taking photographs. Before they left the Moon, the astronauts planted the US flag on its surface.



Returning home

After the mission, the team had to stay in isolation for 21 days to ensure they hadn't brought back any bugs. Later, a huge parade in New York City welcomed them home and they became national heroes.



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