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How did people actually get to the Moon?

Using a rocket, a spacecraft and a lander. The spacecraft used were all called Apollo; the first one to get people to the Moon was called Apollo 11. Here's how it all worked.

Rocket: Saturn V

Most of the rocket was made up of gigantic tanks full of explosive liquid fuel.

BLAST OFF!

Exhaust blasting out of five huge engines launched it off the ground.

By the time it reached space, the rocket dropped away, leaving the spacecraft.

Spacecraft: Apollo

This is the LANDER that went to the Moon.

The astronauts sat in here.

Two astronauts went to the Moon in the lander. The third stayed and flew the spacecraft.

Lander

Part of the lander is still on the Moon today.

What is being on the Moon like?

So far, only 12 people know the answer to that question. Everything that the rest of us know is from *their* experiences. They have tried to describe it in different ways.

"Moon dust is fine, dark and powdery, but razor-sharp. It smells like gunpowder."

"Footprints left on the Moon, even 50 years ago, are still there. There's no wind or weather to blow them away."



"The Moon itself is silent – but there's a constant chatter from the Mission Control people on Earth, as well as the whirring of machinery inside the space suits."



"Walking on the Moon is like walking on a giant trampoline, and the easiest way to move is to bounce along."

Mission Control to Armstrong, can you hear us?

Whrrr

Bzzzz

Hearing you loud and clear!

How dangerous was it?

Very. Being an astronaut has always been, and will continue to be, a dangerous job. At least eight Americans and six Russians died before anyone reached the Moon. There's a small statue on the Moon for these men, called *Fallen Astronaut*.

CHAPTER 5

The BIGGEST questions

Why do people care about the universe?

Not everybody does... but at some point in their lives, most people look up into space and find themselves asking questions about the universe. WHAT'S out there? WHO'S out there? And what's OUR place in the vast, unknowable universe?

Why did the Big Bang happen?

Nobody knows. People have different theories, but they're very hard to investigate. As far as anyone knows... it just *happened*. Frustratingly, scientists know an awful lot about exactly *what* happened, and in what sequence – within the very first fraction of a second – but not *why* it happened.

If people knew the answer, would it make us happier?

Probably not. Finding answers to things often creates a feeling of satisfaction, but there's no guarantee it'll make you feel happy...

Are people special?

Yes and no. Every individual living thing IS special. That's because the chances of it existing in the first place are very small. But if you compare any one living thing to something the size and timespan of the WHOLE UNIVERSE...

...none of us is special.

I find it comforting to imagine myself as a small part of the great big whole of everything...

Will people ever live on Mars?

Maybe? For now, it's not even possible to visit, let alone live there. But scientists around the world are working on designing spacecraft and equipment to do it. Maybe one day, a long long way into the future, brave astronauts will set up a colony on the planet.

What would a Mars colony look like?

Probably a lot of airtight pods. Mars doesn't have enough oxygen for people to breathe, or enough atmosphere to protect the surface from the Sun's harsh rays. So a colony would have to be COMPLETELY INSIDE.



This is what a colony on Mars COULD look like.