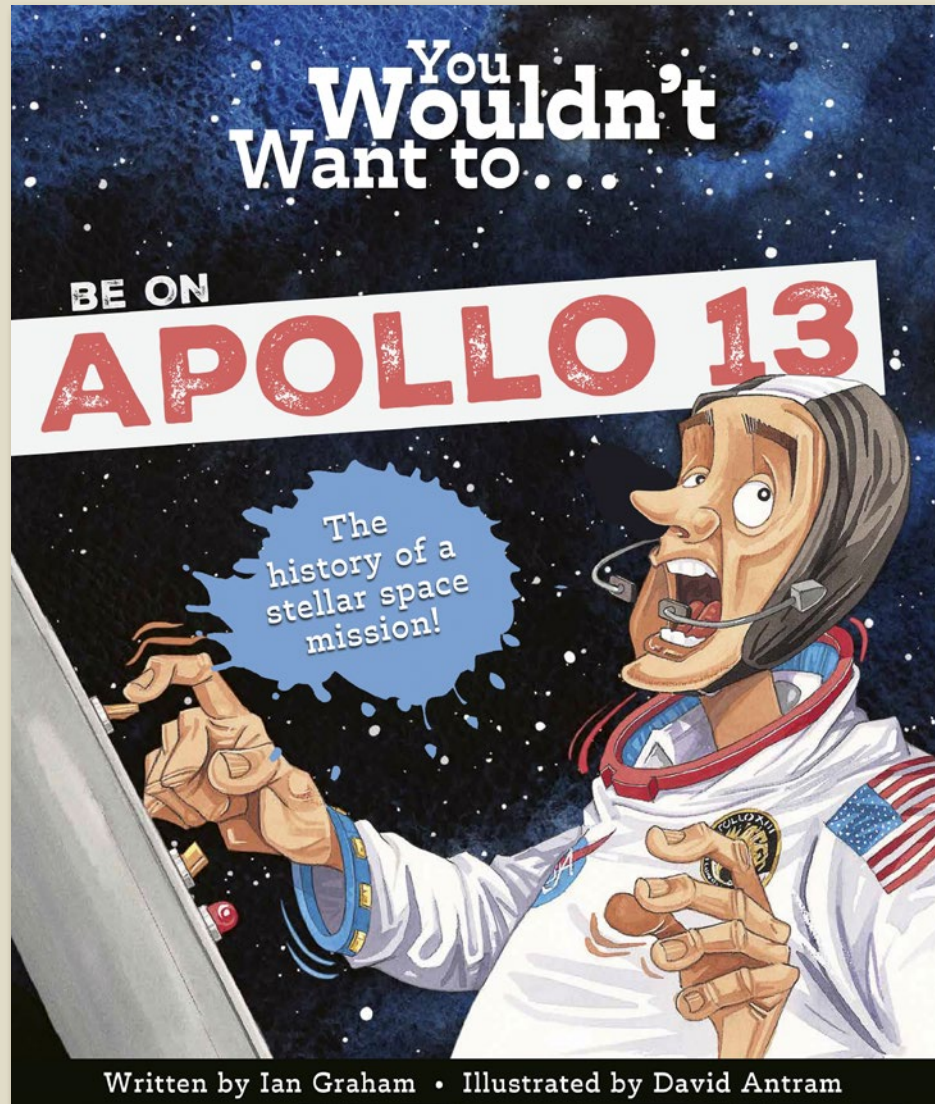


You Wouldn't Want To Be On Apollo 13!



The history of a not-so-stellar space expedition gone wrong!

- History made funny - brutal truths, comedic illustrations and fun facts that engage reluctant readers. Perfect for Horrible Histories fans.
- A hilarious non-fiction story on the evergreen topic of space exploration, tying in with the 2025 NASA moon mission.
- Combines funny text and comical illustrations to fascinating facts, managing to accurately convey historical realities in an educational yet entertaining way.

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Practise makes perfect

The whole crew practises everything they will have to do during the mission. You do it over and over again until you could do it in your sleep. You train in simulators that look exactly like the real spacecraft. The mission controllers keep you on your toes by surprising you with all sorts of emergencies to see how well you deal with them. If you're going to make a mistake, it's better to do it in the simulator than on the way to the Moon. By the time launch day comes, you have to know the spacecraft inside out, be able to fix it perfectly and know what to do in any situation.



Handy hint
Remember to practise everything you will have to do during the mission. You do it over and over again until you could do it in your sleep.

Do the Math
You will need to do a lot of math during the mission. The mission controllers will give you a lot of math problems to solve.

Do the Work
The mission controllers will give you a lot of work to do during the mission. You will need to be able to do it quickly and accurately.

Do the Drill
Remember to do the drill every day. It is a good way to keep your skills sharp.

Do the Check
Remember to check everything before you go. It is a good way to make sure you are ready for the mission.

Cold, wet and stuffy

Keeping warm is not as important as getting home alive, so the spacecraft heaters are switched off to save electricity. The temperature falls to just above freezing. Measure from your breath condenses on the cold instrument panels, walls and windows. The whole spacecraft is wet. It is dark too, because most of the lights are switched off. It gets very stuffy – the Lunar Module was designed for two astronauts, not three, so it can't purify the air fast enough. The limited-cap carbon dioxide in the air rises to a dangerous level. If it continues to rise, you will lose consciousness! You have to do something about it.

A wee problem!
The Apollo 13 crew had to deal with a problem that no one had ever faced before. The Lunar Module was designed for two astronauts, not three, so it can't purify the air fast enough. The limited-cap carbon dioxide in the air rises to a dangerous level. If it continues to rise, you will lose consciousness! You have to do something about it.

Handy hint
Remember to keep warm during the mission. The spacecraft heaters are switched off to save electricity.

A bit of do-it-yourself
The Apollo 13 crew had to do a lot of do-it-yourself work during the mission. They had to fix a lot of things that were broken or missing.

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You will need to do a lot of math during the mission. The mission controllers will give you a lot of math problems to solve.

Do the Work
The mission controllers will give you a lot of work to do during the mission. You will need to be able to do it quickly and accurately.

Do the Drill
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Lost mission

If everything had gone as planned, Apollo 13 would have landed on part of the Moon called Fra Mauro. Apollo 11 and 12 landed in the Sea of Tranquility and the Ocean of Storms. The ground there was flat, because lava had flowed over it. Scientists wanted samples of older rocks from the hills and mountains that had been covered by lava, but these places are more dangerous to land. The earlier missions proved that astronauts could fly the Lunar Module normally and choose a safe landing spot. It was decided that Aquarius from Apollo 13 would land in the Fra Mauro hills.

Handy hint
Remember to stay safe during the mission. The Lunar Module is a small spacecraft and it can be dangerous to land in a dangerous area.

What a fantastic view!
The Apollo 13 crew had a fantastic view of the Earth from space. They saw the Earth from a different perspective than we see it from on the ground.

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Do the Work
The mission controllers will give you a lot of work to do during the mission. You will need to be able to do it quickly and accurately.

Do the Drill
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Do the Check
Remember to check everything before you go. It is a good way to make sure you are ready for the mission.

We have LIFT OFF!

When the countdown reaches zero, you start a 12-minute rollercoaster ride through Earth's atmosphere to space. As the rocket leaves the launch pad, the time on the clock at Mission Control in Houston, Texas, is 13.13! Pictures of the soaring rocket and its flight path appear on a big display screen at Mission Control.

Handy hint
Make sure you are strapped tightly into your seat. If you aren't you'll bounce around the Command Module like a cork in a bottle when the rocket blasts off!

The 'T' Timeline

T minus 3 minutes, 7 seconds
The Saturn V rocket is given the firing command and their stores its automatic launch sequence. Computers start its fuel pumps.

T minus 8.9 seconds
The first-stage engines fire. The rocket is held down on the launch pad until all five engines are running.


Zero
Apollo 13 and the 3,000-tonne Saturn V launch-vehicle gently lift off the launch pad.

1 + 3 minutes, 20 seconds
The launch-escape tower's rockets fire, carrying the tower and boost protectors away from the top of the spacecraft.

1 + 2 minutes, 44 seconds
The empty first stage falls away and 2 seconds later the second-stage engines fire.

1 + 3 minutes, 53 seconds
The empty second stage falls away three seconds after the third-stage engines fire.

1 + 12 minutes, 39 seconds
The spacecraft is safely in orbit around Earth. Time to check that everything is working properly.



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