Mission to the Moon

Describe how space travel has changed over time.

Explain how Margaret Hamilton programmed the Apollo spacecrafts.

Success Criteria

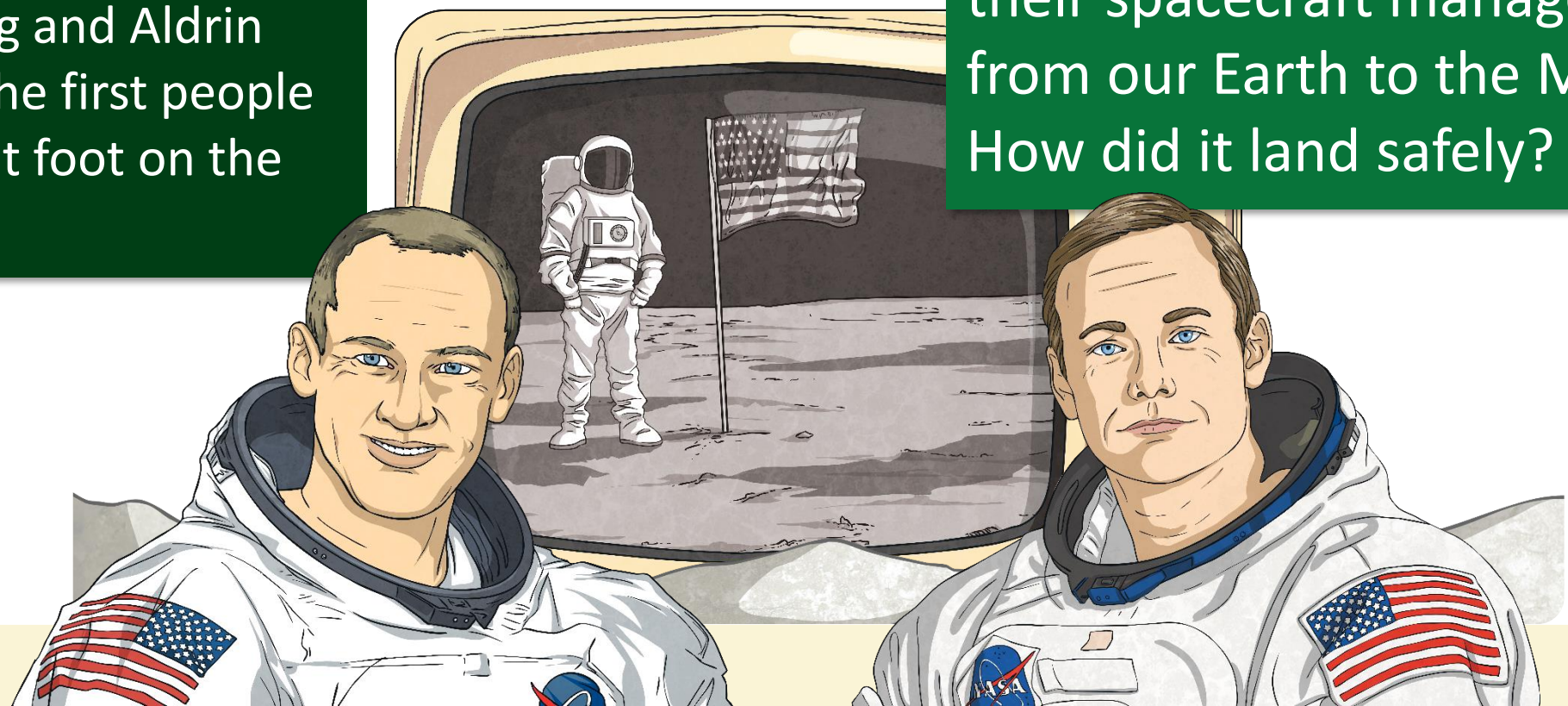
- I can order key dates in space travel on a timeline.
- I can explain how Margaret Hamilton programmed the Apollo spacecrafts.
- I can explain how Margaret Hamilton’s work changed people’s ideas.

Mission to the Moon

On the 20th July 1969, the Apollo 11 spacecraft landed on the Moon. Inside the spacecraft were astronauts including Neil Armstrong and Buzz Aldrin.

The following day, Armstrong and Aldrin became the first people to ever set foot on the Moon.

How did they get there? How did their spacecraft manage to fly from our Earth to the Moon? How did it land safely?

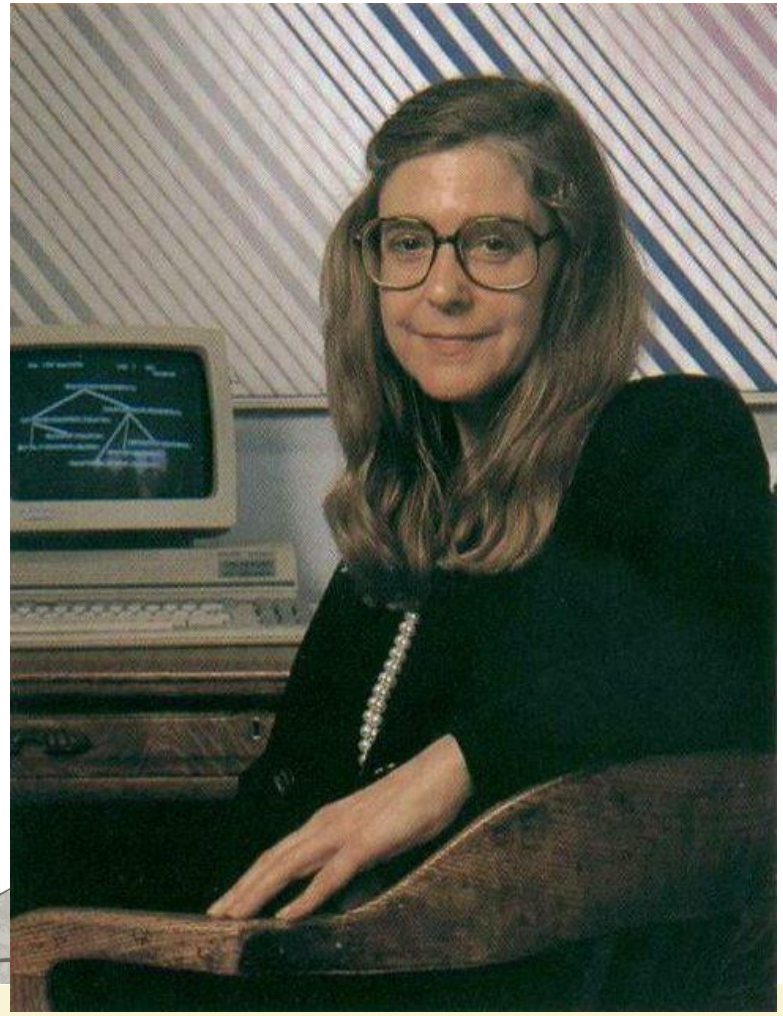


Margaret Hamilton

The answer to all these questions is the work of one person - Margaret Hamilton.

Hamilton worked at NASA, and was responsible for programming the on-board flight software on the Apollo computers.

She wrote the code that the computer used to navigate from Earth to the Moon, and made sure that the computer would land the spacecraft safely on the surface of the Moon.



Hamilton's Success

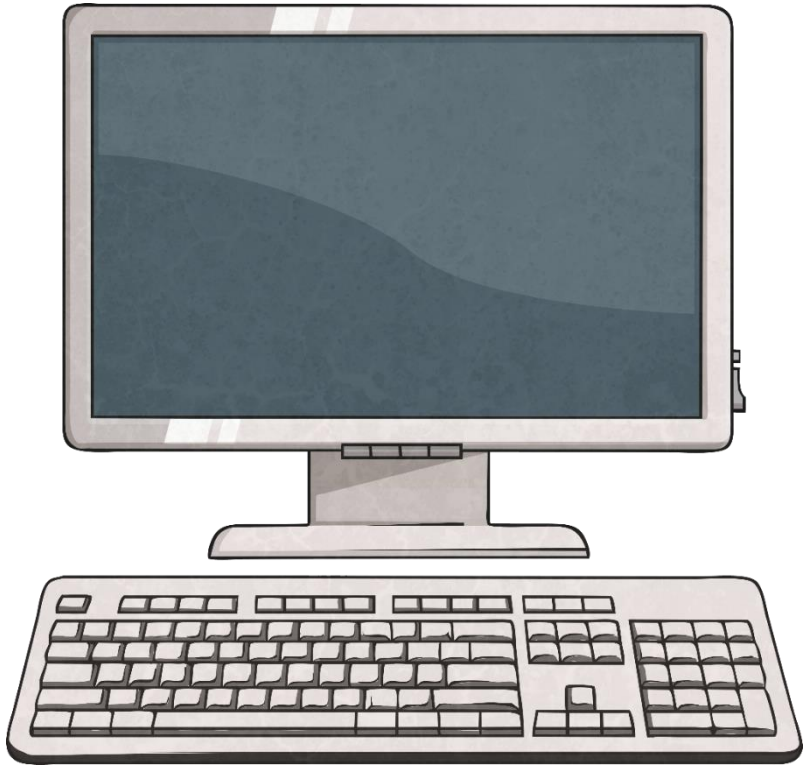
A moment that Hamilton has described as one of her biggest successes is the moment the Apollo 11 spacecraft landed on the Moon.

Just minutes before the shuttle landed, the Apollo computer started sending error messages and alarms. Something was wrong.

A radar had been mistakenly switched on, so the computer was receiving too much information. It could not land safely while this was happening.

Fortunately, Hamilton had written a special computer program that saved the mission. The computer knew it was becoming overloaded, so it could eliminate the radar information and focus on landing.

If Hamilton had not added this code, the computer would have crashed and the Apollo landing would not have succeeded.



Margaret Hamilton's Legacy

Margaret Hamilton worked on every one of the Apollo **manned*** flights and several unmanned ones. Her work in computer engineering set the standard for the use of computers in space travel.

Her work made many future space missions, and other forms of flight, possible.

Margaret Hamilton with stacks of her own coding.

*any mission which had astronauts on board a craft

Margaret Hamilton's Legacy

TASK: Use computer research to correctly order and explain some of the most important events in space travel on a **Space Travel Timeline (See example on next few slides)**

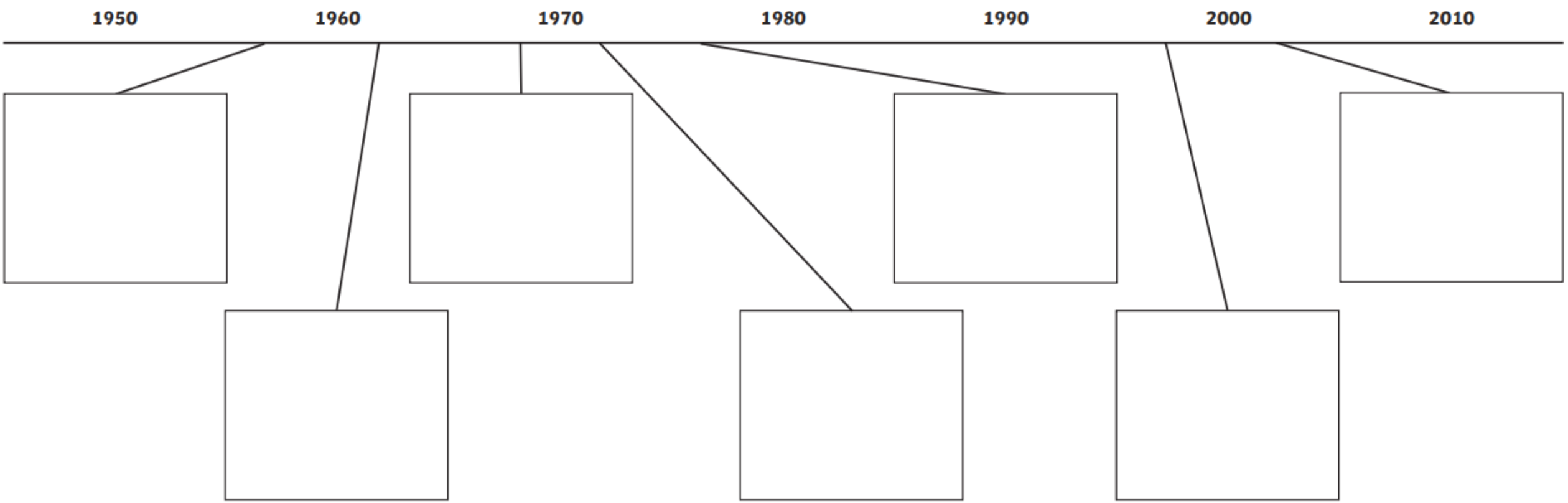
Find out when the events on the next page happened and put them, in the correct place on the timeline.

Challenge: Write in the country involved in the mission

The first space station is launched - named Salyut.	Yuri Gagarin becomes the first human to go into space.	Sputnik 1 satellite is launched into space.

The first 'space tourist' pays to visit outer space.	Apollo 11 lands on the moon.	The Viking 1 Lander is the first spacecraft to land on Mars.	People start to build the International Space Station in space.

Example of timeline



How Have Things Changed?

Margaret Hamilton was the first person to really understand how software and computer programs could be used to make things happen.

How are things different today?

How did Hamilton's work change things?

Can you think of ways software and computer programs are used today?