Thematic STEM Debate 2022-2023
Primary Sector – Year 6

Space Exploration: Is it worth the investment?
Theme: Space Exploration

A. Introduction
It is human nature to explore and find out more about our environment. To investigate and find out why and how things happen. The skies were always a subject of interest and people often looked upwards and wondered about what lies beyond the vastness of space.

Initially, astronomers believed that the Sun revolves around our planet Earth. This theory was believed to be true until the 16th century. The invention of telescopes made it clear that contrary to this, the Earth revolves around the Sun. Eventually, many more planets and moons were discovered. As technology advanced, space probes made it possible to get a closer look at neighbouring planets and moons.

The moon landing in 1969 was a great achievement in the history of mankind. Satellites were put in orbit around the Earth which enhanced navigation and communication. The Hubble Space telescope portrayed the vastness of the universe as more galaxies were discovered. It also emphasised how small planet Earth is. With the recent launch of the James Webb telescope, we are getting much clearer photographs of the distant stars and galaxies leading to understanding how the universe started.

Space exploration provides the opportunity to delve further into exploring the universe. Money is being spent on space exploration programmes. Meanwhile, poverty, clean water and sanitation, affordable clean energy and climate change are amongst the most pertinent issues that require urgent action here on planet Earth.

Would it be better if all our efforts revolve around safeguarding our own planet? What if we had to focus our energy on working towards the United Nations Sustainable Development Goals? Some may argue that exploring space is not necessary. So, do we really benefit from space exploration?

B. Potential debate questions

1. Should mankind invest in space exploration?
2. How valuable is scientific knowledge?
3. What are the benefits of space exploration? How does space exploration improve our quality of life?
4. Considering the number of problems here on planet Earth, should we concentrate our resources on safeguarding our planet?
5. Is space exploration a waste of time? Is space exploration a waste of money?
6. What are the risks associated with space exploration? Do they outweigh the benefits?

C. Links for further reading and research

Below are further links to articles and videos on space exploration.

Space exploration facts for kids – (Kids Encyclopaedia Facts)
https://kids.kiddle.co/Space_exploration

History of space travel – (National Geographic Kids)
https://kids.nationalgeographic.com/space/article/history-of-space-travel

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10 Reasons Why Space Exploration Matters to You – (How Stuff Works)
https://science.howstuffworks.com/10-reasons-space-exploration-matters.htm

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Is NASA a waste of money?
One in four Americans thinks NASA's budget should be reduced. In this video American YouTuber, engineer and inventor Mark Rober sheds some light on some of the work NASA does from his personal experience to make a case for why NASA is one of the best investments that the government can make.
https://video.link/w/0Or6d

Space exploration is a waste of money – (DebateWise)
https://debatewise.org/137-space-exploration-is-a-waste-of-money/
The benefits of space exploration
Space exploration is expensive and has been a questionable investment at times. In this video CNN is showing us how space impacts our lives, including advancements in health, climate, science and technology.
https://video.link/w/VU97d

Space exploration and satellites – (Our World in Data)
https://ourworldindata.org/space-exploration-satellites

The benefits of space exploration

Not everyone is convinced that space exploration is useful for the people on Earth. Sven Piper has made this video to show us some of the benefits. Thanks to space travel, we have learned more about our own world, we have developed new technologies and discovered some scientific breakthroughs.

https://video.link/w/MU97d

SML Debate: Should we invest in space exploration? - (BBC Sunday Morning Live)

Space journalist and Astrophysicist Sarah Cruddas, Space Scientist Dr Helen Fraser & Andrew Simms, an Author & Campaigner debated if we should invest more in space exploration.

https://video.link/w/vW97d

How dangerous is Space Debris? - (Mocomi Kids)

https://mocomi.com/space-debris/

Risks of space exploration - (BBC Bitesize)

https://www.bbc.co.uk/bitesize/guides/zqm4fcw/revision/7

Save our Planet!!

In this video Cordell Hunter shows the challenges that our planet Earth is facing mainly because of litter, pollution and deforestation and is urging us to do something in order to save the Earth.

https://video.link/w/kGpCd

UN Sustainable Development Goals

In this video, UNICEF presents sustainable development goals to achieve a better and more sustainable future.

https://video.link/w/zGpCd

D. Links to suggested Space Explorations related organisation

Below is a hyperlinked list of suggested space exploration related organisations, for further research.

- National Aeronautics and Space Administration, NASA
- China National Space Administration, CNSA
- European Space Agency, ESA
- Russian Federal Space Agency
- SpaceX
- Indian Space Research Organization (ISRO)
- Japan Aerospace Exploration Agency (JAXA)
- IAF: International Astronautical Federation (iafastro.org)

This document has been compiled by the Primary Science Team within the Science Centre, Pembroke (MEYR).