



Thinking Focus: Space Exploration

Using advanced technology to seek out, investigate and utilise off-Earth objects.

Curriculum Focus

Space exploration is exciting, inspiring and innovative. It provides multiple opportunities for students to study a range of topics/themes - physics, advanced technology, space flight, robotics, survival, aspiration, colonisation, human values, perseverance etc. - each one a stimulus to independent study, group investigation or whole class exposition.

*We need people
pushing the boundaries.
Exploration is what we, as
humans, do.*
Heidi Hammel

Knowledge, Skills & Values

Space exploration challenges us to contemplate where we are coming from, where we are going to, and why. Students will develop an expansive perspective, much broader than their day-to-day concerns; they will have the opportunity to inquire about topics of interest, and then connect them together. They will contemplate humanity's motivation to explore space.



Text

[spaceplace.nasa.gov/
menu/explore/](https://spaceplace.nasa.gov/menu/explore/)

*Choose 3 articles;
summarise each into 1
image, 100 words and 1
big question*

Data

[en.wikipedia.org/wiki/
Timeline_of_artificial_
satellites_and_space_
probes](https://en.wikipedia.org/wiki/Timeline_of_artificial_satellites_and_space_probes)

*Choose 1; investigate;
record a 20 second
audio summary*

Map

[geoawesomeness.com/
the-history-of-space-
exploration-on-a-single-
map/](https://geoawesomeness.com/the-history-of-space-exploration-on-a-single-map/)

*Zoom in (ctrl +); choose
the most interesting
feature; justify choice to
your group*

1. Basic Learning Tasks

What is space exploration?

Why do humans try to explore space?

Find, research and describe:

- A space ship
- A space exploration robot
- An artificial satellite
- A possible second Earth
- A space explorer

Make a model satellite, space craft or robot.

Space exploration is a force of nature unto itself that no other force in society can rival.

Neil deGrasse Tyson

2. Deeper Learning Tasks

Make 5 links between space exploration and Earth exploration

Rank these reasons for exploring space:

- Scientific research
- Future survival of humanity
- Military/Political supremacy
- Uniting nations
- Exploiting asteroid resources

Debate whether space exploration is justified.



3. Long-term Learning Tasks

Check-in weekly with an ongoing space mission such as: voyager.jpl.nasa.gov

Define your personal understanding of 'exploration' and use this to think about your own journey in life - challenges, struggles and exciting opportunities.

Revisit your learning whenever you come across new technologies, such as artificial intelligence/robotics.

Media

The Martian: book and film

Explorers: Short Film - youtube.com/watch?v=WQpfUbOqIV0

Star Trek

Purpose

virinalgactic.com/purpose/
blueorigin.com/our-mission
pacex.com/about

Compare the mission statements of SpaceX, Blue Origin and Virgin Galactic then create a combined mission statement of 20-50 words and a single, simple logo.

Extend

youtube.com/watch?v=xRFXV4Z6x8s

Research Breakthrough Starshot and create music, sound effects and commentary for the animation.