

# SCHEME OF WORK

# SPACE RACE



THE STORY OF SPACE EXPLORATION  
TO THE MOON AND BEYOND

**PERFECT FOR:** Ages 9+; learning about cosmonauts and men on the moon; the history of space travel; the solar system and light; creative writing including poetry, adverts, speeches, diary entries, fact-files, posters and sci-fi stories; beautiful space-themed artwork and considering life beyond the solar system.

## KEY FOR CROSS-CURRICULAR OBJECTIVES:

English: Reading comprehension; Creative Writing;  
Writing to Entertain and Inform; Poetry;

Explanation and Recount Texts

Drama, Speaking and Listening

Design Technology & Art

Science

Maths

Computing

History

Music

Physical Education

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# WEEK 1 (PAGES 6-17): THE RACE FOR ROCKETS

SUGGESTED OBJECTIVES	COMPREHENSION QUESTIONS	EXTRA ACTIVITIES
<p><b>Reading: Comprehension</b></p> <ul style="list-style-type: none"> <li>- Make predictions about a non-fiction text, using clues.</li> <li>- Ask questions to improve understanding of a text.</li> <li>- Identify how language, structure, and presentation contribute to meaning.</li> <li>- Retrieve and record information from non-fiction.</li> </ul> <p><b>Writing to Inform</b></p> <ul style="list-style-type: none"> <li>- Identify the features of an information text.</li> <li>- Write an advert, thinking carefully about the persuasive techniques and the layout and features for this type of - writing.</li> <li>- Using evidence from the text, write a newspaper article using the correct features.</li> </ul> <p><b>History: The Space race</b></p> <ul style="list-style-type: none"> <li>- Order and understand the main events that occurred during the space race.</li> <li>- Use research methods to extend historical learning.</li> </ul>	<ol style="list-style-type: none"> <li>1. Look at the front cover of the book. On a whiteboard or post-it note, record everything you can see. What sort of book do you think this is? Is it fiction or non-fiction? Why do you think this?</li> <li>2. Look at the Contents Page. On which pages might I find out about the following? <i>Saturn V, Life on Mars, Living in Space, Mercury Missions, Training for Space.</i></li> <li>3. Take some time to explore the book – is there anything that has particularly interested or puzzled you? Can you choose one fact to share with a partner?</li> <li>4. What were the first rockets created for? (page 6)</li> <li>5. What does the word 'vengeance' mean? Why might the V-2 rocket also be referred to as the 'vengeance' rocket?</li> <li>6. Sputnik 1 weighed 56kg. True or false? Can you write your own true/false questions about Sputnik 1? (page 10)</li> <li>7. Why was the Vanguard 1A satellite nicknamed 'Flopnick'? (page 12)</li> <li>8. What is Vostok 1? Who was it designed by? Why was it covered in a protective heat shield? (pages 14 and 15)</li> <li>9. How does the layout and use of arrows on pages 16 and 17 help you better understand the events leading up to the launch of Vostok 1?</li> <li>10. Why do you think so many countries were involved in the space race? What were they trying to prove?</li> </ol>	<p>Using Resource 1a, write down everything you think you already know about space in the circle. In the outer circle, write down where you learned this information. Share your ideas as a group.</p> <p>Using the features of an information text, identify the following features on these pages: <i>introduction, titles, sub-titles, words in bold, pictures and captions, diagrams, written in present tense, charts and graphs.</i></p> <p>If you go to Google Play Store or the App Store, you can download the free Space Race AR app! Write a persuasive advert to encourage others to download the Space Race AR app. Remember to include a catchy title, sub-titles, appealing adjectives, memorable slogans and rhetorical questions.</p> <p>Create a timeline showing the main events that occurred during the great space race. You may wish to include: the creation of the V-2 rocket, the launch of Sputnik 1, the role of America and the Soviet Union in the space race and the development of Vostok 1.</p> <p>Write a newspaper report about the failed launch of the Vanguard 1A satellite. Include a headline, an introduction, a main body and witness statements.</p>



## WEEK 2 (PAGES 18-29): HUMANS IN SPACE

SUGGESTED OBJECTIVES	COMPREHENSION QUESTIONS	EXTRA ACTIVITIES
<p><b>Reading: Comprehension</b></p> <ul style="list-style-type: none"> <li>- Identify how language, structure, and presentation contribute to meaning.</li> <li>- Discuss words and phrases that capture the reader's interest and imagination.</li> </ul> <p><b>Writing to Inform and Entertain</b></p> <ul style="list-style-type: none"> <li>- Write a moving congratulatory speech.</li> <li>- Write a biography about Valentina Tereshkova.</li> <li>- Write a poem inspired by spacewalking.</li> </ul> <p><b>Drama, Speaking and Listening</b></p> <ul style="list-style-type: none"> <li>- Understand and empathise with a character through use of role-play.</li> </ul> <p><b>Computing</b></p> <ul style="list-style-type: none"> <li>- Design an informative presentation about the first humans in space.</li> </ul>	<ol style="list-style-type: none"> <li>1. Look at the title on pages 18-19. What do you predict the information on these pages will be about?</li> <li>2. Can you point to the introduction on page 18? What is its purposes? What information do you learn from it?</li> <li>3. Imagine you are Alan Shepard, the first man in space. How do you feel? What can you see? (page 20)</li> <li>4. Can you explain what a space probe is? What is its purpose? Why were early probes light and small? (page 22)</li> <li>5. Why was Voskhod considered a risky mission? (page 25)</li> <li>6. Before reading pages 26 and 27, cover up the diagram of the spacecraft, Gemini. Can you use the information to draw and label a picture of Gemini? Afterwards, compare your drawing with the diagram on pages 26 and 27.</li> <li>7. What does the verb 'marvelled' suggest about the spacewalking photos? (page 28)</li> <li>8. Imagine you are Leonov or Belyayev and have just crash-landed in the dense Siberian forest. What might you be thinking and feeling? (page 28)</li> <li>9. Which words and phrases does the author use to engage, surprise and interest the reader? Are they successful?</li> <li>10. Would you like to go to space? Why? Why not?</li> </ol>	<p>When John Glenn returned to Earth, President John F. Kennedy awarded him with a Distinguished Service Medal. Imagine you are President John F. Kennedy and write a powerful speech, congratulating John Glenn on his achievements, praising the role of America in the space race and discussing your future plans.</p> <p>Write a biography about Valentina Tereshkova, who was the first woman in space. Remember to include information about her childhood, her family, her achievements and legacy. Can you find out about any other famous female scientists and astronauts?</p> <p>Use Alexi Leonov's and Ed White's recounts on pages 28 and 29 to write a poem inspired by their experiences.</p> <p>Freeze frame key moments from Leonov's spacewalk: exiting the spacecraft, Leonov's spacesuit inflating, the alarming re-entry, the night spent in the snow. Can you accurately express the cosmonaut's thoughts, feelings and emotions at these key points?</p> <p>Create a PowerPoint presentation about the first humans in space. Include animations, slide transitions and sound clips.</p>



## WEEK 3 (PAGES 30-49): THE MOON IN VIEW

SUGGESTED OBJECTIVES	COMPREHENSION QUESTIONS	EXTRA ACTIVITIES
<p><b>Reading: Comprehension</b></p> <ul style="list-style-type: none"><li>- Use dictionaries to check the meaning of words.</li><li>- Retrieve and record information from non-fiction.</li><li>- Summarise the main ideas in the text.</li></ul> <p><b>Poetry</b></p> <ul style="list-style-type: none"><li>- Use a well-known poem as a model to inspire a space-themed poem.</li></ul> <p><b>Writing to Entertain and Inform</b></p> <ul style="list-style-type: none"><li>- Write a diary entry about landing on the moon.</li></ul> <p><b>Science</b></p> <ul style="list-style-type: none"><li>- Record a moon diary.</li><li>- Understand the different phrases of the lunar cycle.</li></ul> <p><b>Design Technology &amp; Art</b></p> <ul style="list-style-type: none"><li>- Paint a piece of artwork inspired by lunar exploration.</li></ul>	<ol style="list-style-type: none"><li>1. Write a definition for the following words in this section: <i>ambitious, decisive, multiple, facility, constructed, ascent, descent</i>. Can you use these words in a sentence of your own now?</li><li>2. Why did NASA involve the media in 'almost everything it did'? (page 33)</li><li>3. How do the labels and numbers help you understand the stages needed to launch the Saturn V? (pages 34 and 35)</li><li>4. What was the role of the Service module on the Apollo Spacecraft? (page 36)</li><li>5. Using pages 38 and 39, write an explanation text about the training process for cosmonauts, making sure you put the information into your own words.</li><li>6. Create a timeline to show the tragedies that occurred during the space race. (pages 40 and 41)</li><li>7. On July 16, 1976, Apollo 11 blasted off. True or false?</li><li>8. Why is the outer overshoe of a moon boot removed? (page 49)</li><li>9. How does the 'Replay History Here' section engage the reader and develop their understanding?</li><li>10. What is the most importance piece of information on these pages? Summarise the contents of these pages in three sentences. Can you summarise the information now in one sentence?</li></ol>	<p>Write a diary entitled 'Man on the Moon: A Day in My Life'. Imagine you are Neil Armstrong, recounting your first steps onto the moon. How will you describe this lifeless world? What tasks did you carry out while on the moon? Remember to write in the first person, in the past tense and refer to your thoughts and feelings throughout.</p> <p>Over the course of a month, record a diary, observing and drawing the moon and how it appears to change shape. Can you find out what the terms <i>waxing, waning</i> and <i>gibbous</i> mean?</p> <p>Look at pages 48 and 49. What important features does a spacesuit have? Use Ian McMillan's poem <i>Ten Things Found in a Wizard's Pocket</i> to write your own poem entitled <i>Ten Things Found in an Astronaut's Pocket</i>.</p> <p>Very often in Japanese art, the moon is obscured by beautiful willow branches and shrouded in cloud. Explore some Japanese moon art, discussing the techniques used, the use of colour and the delicate nature of the artwork. Use this as a stimulus to create your own artwork inspired by pages 42 and 43.</p>



# WEEK 4 (PAGES 50-67): SPACE STATIONS AND SHUTTLES

SUGGESTED OBJECTIVES	COMPREHENSION QUESTIONS	EXTRA ACTIVITIES
<p><b>Reading: Comprehension</b></p> <ul style="list-style-type: none"> <li>- Identify how language, structure, and presentation contribute to meaning.</li> <li>- Retrieve information from a non-fiction text.</li> <li>- Summarise information by creating new sub-titles for a non-fiction text.</li> </ul> <p><b>Maths</b></p> <ul style="list-style-type: none"> <li>- Measure accurately to the nearest mm using a ruler.</li> <li>- Convert between different units of metric measure.</li> </ul> <p><b>Writing to Entertain and Inform</b></p> <ul style="list-style-type: none"> <li>- Write a humorous set of rules for living inside a spacecraft.</li> <li>- Use imperative verbs to give instructions.</li> </ul> <p><b>Physical Education</b></p> <ul style="list-style-type: none"> <li>- Perform a space dance using a range of movement patterns.</li> </ul> <p><b>Drama, Speaking and Listening</b></p> <ul style="list-style-type: none"> <li>- Interpret and perform a poem.</li> </ul>	<ol style="list-style-type: none"> <li>1. Why did the American government stop lunar exploration in 1972? (page 50)</li> <li>2. Explain what the Soyuz-Apollo Handshake was and why it was so important. (page 53)</li> <li>3. The Kvant-2 module contained an area for scientific experiments, including hatching quail eggs. What experiments would you like to conduct in space? Why? (page 57)</li> <li>4. How are toilets in space like vacuum cleaners? (page 59)</li> <li>5. In 2003, Space Shuttle Columbia disintegrated during re-entry. Explore words with the prefixes 'dis' and 're' and make a list, discussing the meaning of these prefixes.</li> <li>6. Complete this sentence: When landing, a shuttle releases a drag-chute because...(page 63)</li> <li>7. How does the augmented reality feature 'SEE IT IN 3D!' help you understand what the ISS looks like? (page 65)</li> <li>8. How are weather satellites and environmental satellites similar and different? (page 66)</li> <li>9. Can you summarise the paragraph 'Space Junk' in three words?</li> <li>10. Look at the sub-titles on pages 66 and 67. How do they help you understand the text? Can you think of new sub-titles for each section of the text?</li> </ol>	<p>Using a pencil and ruler, draw a series of lines of varying length. Ask a partner to measure them to the nearest mm. Now, use a table to record the different lengths and diameters of the space stations on pages 54 and 55. Can you convert each length from metres into centimetres and millimetres?</p> <p>Living in space is very strange and different! What sort of rules might there be inside a spacecraft? Create your own amusing rules for living in spacecraft with other cosmonauts. Can you identify and use a range of imperative verbs?</p> <p>Create your own dance inspired by the information about life in space. Use a range of twisting, turning movements at different levels of height. Can you perform expressively, developing different ways of travelling and moving?</p> <p>Look at the poem <i>Lullaby</i> by Sarah Wilson, from the anthology <i>Blast Off! Poems About Space</i>. Work in small groups to perform the poem, thinking about how you can use your voice, actions and musical instruments to convey the feeling of the poem.</p>



# WEEK 5 (PAGES 68-79): PROBING THE PLANETS

SUGGESTED OBJECTIVES	COMPREHENSION QUESTIONS	EXTRA ACTIVITIES
<p><b>Reading: Comprehension</b></p> <ul style="list-style-type: none"> <li>- Retrieve information from a non-fiction texts by answering true/false questions.</li> <li>- Discuss how the use of tables and diagrams contribute to meaning.</li> </ul> <p><b>Music</b></p> <ul style="list-style-type: none"> <li>- Rehearse, play and perform a space-themed piece of music to accompany these pages.</li> <li>- Use your voice and instruments with fluency, control and expression to create a magical, twinkling soundscape.</li> </ul> <p><b>Design Technology &amp; Art</b></p> <ul style="list-style-type: none"> <li>- Create a 3D model of the solar system.</li> </ul> <p><b>Science</b></p> <ul style="list-style-type: none"> <li>- Understand how light travels.</li> <li>- Set up simple practical enquiries, comparative and fair tests.</li> <li>- Report on findings from experiments, including written explanations, displays or presentations of your results and conclusions.</li> </ul>	<ol style="list-style-type: none"> <li>1. Explain why space probes are a clever way of exploring space. (page 70)</li> <li>2. Why was the Huygens probe built with a hard shell? (page 73)</li> <li>3. How does the table on page 73 help you appreciate the impact of the Cassini-Huygens trip?</li> <li>4. Why might 'Curiosity' be a good name for a rover? Can you think of another name for this robotic probe? (page 74)</li> <li>5. The Curiosity discovered that there is no water on Mars. True or false? (page 75)</li> <li>6. What are comets and asteroids? How are they similar? How are they different? Use a Venn diagram to compare them. (pages 76 and 77)</li> <li>7. Halley's Comet visits Earth every 12 years. True or false? (page 76)</li> <li>8. What is the Hubble Deep Field? How has it helped astronomers? (page 78)</li> <li>9. Complete this sentence: The Hubble telescope has cost over 1.4 billion US dollars, but... (page 79)</li> <li>10. Has the author explained any unfamiliar topics, words or concepts successfully in this section? Which topics and ideas are still difficult to understand? Why?</li> </ol>	<p>In pairs/small groups create a magical, thrilling soundscape using body percussion, your voices and instruments to accompany Curiosity's exciting mission to Mars.</p> <p>Create a scale, 3D model of the solar system using a variety of materials. Write some riddles or labels about each planet to go alongside your model.</p> <p>Create a fact-file or poster about one of the one of the planets in our solar system. Include information about its distance from Earth, its size and appearance and any famous features. Make sure your information is presented in a clear, appealing and accessible manner.</p> <p>The Hubble telescope is equipped with mirrors. Explore how you can reflect and change the direction of a light source. Carry out an experiment to see which other materials reflect light. Do dark materials reflect light better? Do smooth surfaces reflect light better than rough surfaces? Remember to make a prediction, set up a fair test, draw and label a diagram of your experiment and record your results.</p>



# WEEK 6 (PAGES 80-94): INTO THE FUTURE

SUGGESTED OBJECTIVES	COMPREHENSION QUESTIONS	EXTRA ACTIVITIES
<p><b>Reading: Comprehension</b></p> <ul style="list-style-type: none"> <li>- Identify the difference between fact and opinion.</li> <li>- Make inferences based on details stated and implied.</li> <li>- Offer and justify an opinion, explain reasoning and discuss ideas using evidence from the text.</li> </ul> <p><b>Design Technology &amp; Art</b></p> <ul style="list-style-type: none"> <li>- Explore the style and techniques employed by Robert McCall and then use these to paint a piece of artwork inspired by space travel.</li> </ul> <p><b>Writing to Entertain and Inform</b></p> <ul style="list-style-type: none"> <li>- Write a persuasive leaflet about space tourism.</li> <li>- Write an exciting sci-fi story, using conventions found in this genre.</li> </ul> <p><b>Drama, Speaking and Listening</b></p> <ul style="list-style-type: none"> <li>- Perform a segment for a television show.</li> </ul>	<ol style="list-style-type: none"> <li>1. How did Dennis Tito make history? (page 82)</li> <li>2. What might the positive and negative impact of space tourism be?</li> <li>3. What role does the sun play in maintaining life on Earth? (page 84)</li> <li>4. Why might private companies be interested in mining the Moon's resources? What impact might this have? (page 87)</li> <li>5. Using the information from pages 86 and 87, decide whether these statements are fact or opinion: <i>The Moon village is being developed by the European Space Agency; Going to the moon would be fun; We should not visit the Moon again; Water is present in small quantities on the moon.</i></li> <li>6. The shortest distance time between Earth and Mars would be one month. True or false? (page 88)</li> <li>7. Find and copy a word on page 91 that means the same as 'run out'.</li> <li>8. Do you think there are aliens living somewhere in the Universe? Why? Why not?</li> <li>9. Do you think that travelling to different planets will soon be as common as travelling on a train or in a car?</li> <li>10. How does the author feel about space? How do you know? How does he want us to feel about space? Has this book changed your mind about space exploration and its role in our lives?</li> </ol>	<p>Explore the space-themed work of Robert McCall, especially his series of paintings <i>Floating Worlds</i>. Listen to <i>Deep Field: Earth Choir</i> by Eric Whitacre and the Royal Philharmonic Orchestra. Use these two pieces to inspire your own futuristic, space-themed artwork.</p> <p>Draw and label a picture of a new space hotel. Create a persuasive leaflet, encouraging people to visit your brand-new space hotel. Include powerful adjectives, diagrams, pictures, alliteration, facts and a quiz. Think carefully about the layout of your leaflet, ensuring it is engaging, colourful and bright.</p> <p>Use the information from these pages to write your own sci-fi themed story set in the future. As well as having a thrilling adventure, you may wish to include strange aliens, space travel, robots and gadgets!</p> <p>Choose your favourite page in the book and work in groups to write a script for an informative TV show all about it, aimed at children. Include stage directions and props and perform your engaging TV show with enthusiasm. Perhaps you can record your show and evaluate it?</p>

# RESOURCE 1A

