Out of this World – Term 2

Southville Primary School

Year 5

Local Anchor Point	Visit/ Visitor	Key Person	Key Outcome
	Explorer Dome	Lonnie Johnson Katherine Johnson	Investigation - Presentation of Findings

Diversity, Equity and Inclusion	Linked Learning
CARGO: Lonnie Johnson Hidden Figures Book: Mary Jackson, Katherine Johnson and Dorothy Vaughan	Reception - Blast Off Year 3 - Focus and Magnets

Driver: Science
Where's our place in the universe?

Driver Objectives

- describe the movement of the Earth and other planets relative to the sun in the solar system
- describe the movement of the moon relative to the Earth
- describe the sun, Earth and moon as approximately spherical bodies
- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
- take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- use relevant scientific language and illustrations to discuss, to talk about how scientific ideas have developed over time.
- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- identify the effects of air resistance, *water resistance* (taught in Term 5: Vikings) and friction, that act between moving surfaces

Driver Disciplinary Knowledge and Skills ('Working Scientifically')

This is knowing how to carry out practical procedures using different equipment and to collect, use, interpret, understand and evaluate the evidence from scientific processes:

- **Planning**: Asking questions, fair testing, setting up simple tests
- **Doing**: Using different equipment safely, making systematic and careful observations
- **Recording**: Obtaining evidence, classifying and identifying, recording findings in a variety of ways (e.g. drawings, labelled diagrams, keys, bar charts, graphs and tables)
- **Concluding**: Suggesting answers, reporting, presenting (in oral and written forms)
- **Evaluating**: Seeking patterns, making predictions for the future

Driver Key Vocabulary

- **Tier 1:** space, Earth, Moon, star, planet, day, night, seasons, distance, rotating, axis, gravity, sun, light, heat, energy, year
- **Tier 2:** orbit, friction, air resistance, fair test, weight, surface area, force, weight, solar system, galaxy, Milky Way, rotate, sphere, evidence, reflect, satellite, eclipse, atmosphere
- **Tier 3:** Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, Sun, hydrogen, helium, gravity, solar system, Moon landing, Neil Armstrong, Apollo 11, lunar eclipse, Aristotle, space exploration, satellite, orbiting, parabolic flight, parachute

Driver Sequence - Where's our place in the universe?

1. **WALT:** Describe the movement of the Earth relative to the sun and its location within the universe. *(Flipbook activity)*
2. **WALT:** Think about what we already know and what we would like to find out about space. *(Topic book share and fact recording)*
3. **WALT:** Identify the sun as a star and explain its benefits. *(Poster creation)*
4. **WALT:** Understand the scale of our solar system. *(Toilet roll demonstration)*
5. **WALT:** Use forces vocabulary correctly. *(Interactive sorting and carousel activities)*
6. **WALT:** Understand why the sun, Earth, and the Moon are spherical bodies. *(Diagrams and Aristotle's evidence discussion)*
7. **WALT:** Explain what the moon is. *(Elicitation and fact-sharing activity)*
8. **WALT:** Describe the phases of the moon. *(Labelling and visual spinner creation)*
9. **WALT:** Identify the effects of friction acting between moving surfaces. *(Demonstration and activities with a force meter)*
10. **WALT:** Identify the effects of friction acting between moving surfaces. *(Testing and results analysis)*
11. **WALT:** Describe the Earth's rotation on its axis and its impact on day, night, and the seasons. *(Diagram and globe demonstration)*
12. **WALT:** Explain the significance of the moon landing. *(Neil Armstrong lesson and fact discussion)*
13. **WALT:** Learn about the work of scientists. *(Reading comprehension and inference questions)*
14. **WALT:** Learn about the work of scientists. *(Creating a certificate or medal)*
15. **WALT:** Learn about the work of scientists. *(Lonnie Johnson lesson)*
16. **WALT:** Identify the effect of air resistance on falling objects. *(Demonstration with footballs, paper, and discussion)*
17. **WALT:** Identify the effect of air resistance on falling objects. *(Investigation with stopwatches and recording)*
18. **WALT:** Investigate the impact of weight on air resistance. *(Adding weights to parachutes)*
19. **WALT:** Investigate the impact of weight on air resistance. *(Conclusion of parachute investigation)*
20. **WALT:** Consider the impact of air resistance on slowing the rate of falling objects. *(Recap and teaching on parachutes)*
21. **WALT:** Consider the impact of air resistance on slowing the rate of falling objects. *(Parachute creation and testing)*
22. **WALT:** Consider the impact of air resistance on slowing the rate of falling objects. *(Amendments to parachutes and mean calculation)*
23. **WALT:** Consider the impact of air resistance on slowing the rate of falling objects. *(Investigation conclusion and questions)*
24. **WALT:** Demonstrate an understanding of key concepts about space. *(Presentation of learning)*