

Space – Skills SOW (1 lesson per fortnight)

What’s the science story?

The idea of Earth in space is important because we live on the Earth and it is the only planet that we know to have abundant and complex life. Understanding how the Earth and space systems interact, how they affect us, and how we affect them is vital for our survival. Exploring our origins and our place in the universe feeds the intrinsic curiosity of humans and develops a sense of wonder.



Previous knowledge:

Year 5 – Earth and Space (solar system, movement of planets, sizes, day and night)
 Year 5 – Forces (gravity)

Next steps...

KS3 – Forces 2 in year 9
 KS4 – P5 Forces (possible link)
 KS4 – Triple Science Physics P8 Space physics



Keywords

Space
 Sun
 Earth
 Moon
 Solar system
 Galaxy

Universe
 Star
 Orbit
 Eclipse
 Weight
 Gravity
 Mass

Season
 Light year
 Solar
 Lunar
 Phase
 Astronaut

Lesson No. and Title	Learning objectives	National Curriculum/Skills Focus	Activities	Page
1. Introduction	What do you already know? What do you WANT to know?	Asking questions	Complete pre assessment questions Wonder wall Perhaps ipads for any questions that cannot be answer by teacher or covered in this booklet.	
2. The Sun	What is the purpose of the sun? How long will our sun last?	Reading	Predict Clarify Question Summarise	
3. The Earth	Why is the Earth so special?	Reading	Predict Clarify Question Summarise	
4. Day and Night	Why do we have day and night?	<ul style="list-style-type: none"> <i>the seasons and the Earth's tilt, day length at different times of year, in different hemispheres</i> Summarising information	Discuss day and night Annotate diagrams in booklet and complete summary	
5. The seasons	How do we have different seasons?	<ul style="list-style-type: none"> <i>the seasons and the Earth's tilt, day length at different times of year, in different hemispheres</i> Summarising information	Name the seasons and linked to length of day Hemispheres. Complete summary sheet in booklet	
6. Phases of the moon	What are the phases of the moon? Why does the moon appear differently throughout the year?	Summarising information	Shade moon phases Summary written in booklet using diagram	

KS3 – Year 7

7. Eclipses	What is an eclipse? How is a solar and lunar eclipse different?	Summarising information from two videos	Videos on the eclipses Summary of each Complete summary	
8. The moon	Why is the moon so special?	Reading	Predict Clarify Question Summarise	
9. The solar system	What is in our solar system?	Research Summary	Fact hunt – place cards (or use ipads/laptops) around the room (or outside) and students need to collect the answers	
10. Orbits	How do objects travel in an orbit?	Answering questions WS8 Writing a method WS9 Variables WS10 Selecting equipment WS11 Hazards	Teacher talk about orbits – answer questions in booklet PRAC: Investigating orbits String, rubber bungs (different sizes)	
11. Gravity	What is gravity different on different planets?	<ul style="list-style-type: none"> • <i>gravity force, weight = mass x gravitational field strength (g), on Earth $g=10$ N/kg, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and sun (qualitative only)</i> WS16 Using an equation	Calculate weight using the equation – practice PRAC: Craters Trays (one filled with gravel, one filled with sand and one with flour), plasticine, 1metre rulers	
12. The sun and stars	What else is out in space? What is a light year?	<ul style="list-style-type: none"> • <i>our sun as a star, other stars in our galaxy, other galaxies</i> • <i>the light year as a unit of astronomical distance</i> Summary writing	Summary of what a star is Define light year Summary in booklets	

<p>13. Mars</p>	<p>Why is mars important? What is special about mars?</p>	<p>Reading</p>	<p>Predict Clarify Question Summarise</p>	
<p>14. Neil Armstrong</p>	<p>Who is Neil Armstrong?</p>	<p>Reading</p>	<p>Predict Clarify Question Summarise</p>	
<p>15. Buzz Aldrin</p>	<p>Who is Buzz Aldrin?</p>	<p>Reading</p>	<p>Predict Clarify Question Summarise</p>	
<p>16. Valentina Tereshkova</p>	<p>Who is Valentina Tereshkova?</p>	<p>Reading</p>	<p>Predict Clarify Question Summarise</p>	
<p>17. Tim Peake</p>	<p>Who is Tim Peake?</p>	<p>Reading</p>	<p>Predict Clarify Question Summarise</p>	
<p>18. Test your knowledge</p>	<p>How much about space do you know?</p>		<p>Complete test SA if time Keyword check if needed</p>	