NHSG Key Stage 3 Unit Overview for Y7 Science: The Earth and Beyond

Scheme of Learning	Y7 Science: The Earth and Beyond
Learning Objectives	1. Explain the role of gravity on Earth and other planets and its role in orbits of the planets and satellites. 2. Describe the axis of spin of the Earth and explain the phenomena of day night and seasons. 3. Understand that there are luminous and non-luminous objects and that the Earth and Moon are seen by reflected light. 4. Explain how eclipses of the sun and moon occur, understand how the view from Earth of the Moon causes the phases. 5. Understand what our Solar System comprises of. 6. Some examples of recent space exploration and the conditions on Earth which support life. 7. To describe that there are natural and man-made satellites - all maintaining orbits due to gravity.
Key Questions	What are key constituents of our Solar System? How do they interact? How do celestial dynamics dictate night, day, phases of the Moon and eclipses?
Knowledge	What are key constituents of our Solar System Using models of the solar system to understand night day years and moon phases. Solar system, Galaxy, Universe, Gravity, Orbits, Satellite, Eclipses
Ongoing Assessment	Retrieval questions at the start of every lesson. Worksheets for all major concepts to be used for self and peer assessment. Revision checklist at beginning of handout pack and retrieval questions at the end.
End Product Assessment	Assessment phases of moon models. End of topic test, 30 marks in 35 minutes. Including a mixture of MCQ, short answer and long answer questions. With mark schemes moderated by the team, with notes on standardised language.
Clear sequencing of content	Students will develop the language to understand the model of our Solar system as a basis for developing an understanding of the Universe in both GCSE Physics and Astronomy. Using this model and relative motion to explain day night months years and seasons. A key concept will be to understand that weight is a force as opposed to mass and thus can be different in differing gravitational fields.

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Links to careers	Weather forecasting, engineering, satellite design, astrophysics and professional astronomy.
Diversity and Inclusion	Diverse astronomers or astronauts – are discussed. These include Kalpana Chawla, Katherine Johnson, Dr Mae Carol Jemison and Dr Maggie Aderin-Pocock amongst many others.
Support	Learning checklist and key terminology are highlighted throughout. Online textbook via Kerboodle includes working scientifically, glossary and literacy support. Adaptive teaching in the classroom supports all learners.
Challenge	Links to form names – planets. Follow on question – is Pluto a planet? What defines a planet? Stretch challenge question on end of topic test. Stretch and challenge question sheet. Space Design Competition – Galactic Challenge. Trip to Herstmonceux – history of astronomy in the UK, space science, astronomy and planetarium shows.