Alexander Hosea Curriculum Map – Year 5 **Subject: Science Earth and Space**

Programme of Study Statements

- 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.

Key Vocabulary

Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets

Investigations and Skills for thinking like a Scientist





Sticky Knowledge:

Stars, planets and moons have so much mass they attract other things, including each other due to a force called gravity. Gravity works over distance.

- Objects with larger masses exert bigger gravitational forces.
- Objects like planets, moons and stars spin.
- Smaller mass objects like planets orbit large mass objects like stars.
- Stars produce vast amounts of heat and light.
- All other objects are lumps of rock, metal or ice and can be seen because they reflect the light of stars.

Comparative Tests	**Identify & Classify**	**Observation over time**	**Pattern seeking**	**Research**
How does the length of daylight hours change in each season?	How could you organise all the objects in the solar system into groups?	Can you observe and identify all the phases in the cycle of the Moon?	Is there a pattern between the size of a planet and the time it takes to travel around the Sun?	What unusual objects did Jocelyn Bell Burnell discover? How do astronomers know what stars are made of? How have our ideas about the solar system changed over time?

Prior Knowledge:

- Observe changes across the four seasons. (Y1 - Seasonal changes)
- Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal changes)

- **Potential Evidence to support our Scientists (I can..):**
- Can use the model to explain how the Earth moves in relation to the Sun and the Moon moves in relation to the Earth
- Can demonstrate and explain verbally how day and night occur
- Can explain evidence gathered about the position of shadows in term of the movement of the Earth and show this using a model
- Can explain how a sundial works

Future Knowledge:

- 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). (KS3)
- Our Sun as a star, other stars in our galaxy, other galaxies. (KS3)
- The seasons and the Earth's tilt, day length at different

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- Can explain verbally, using a model, why we have time zones
  Can describe the arguments and evidence used by scientists in the past

Big Question: Sun, Earth and Moon- What is moving and how do we know?

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times of year, in different hemispheres. (KS3)
- The light year as a unit of astronomical distance. (KS3)

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<tr><td colspan="3">Cultural Capital</td></tr>
<tr><td>Visits and visitors
We the Curious (Bristol)
Observatory</td><td>Experiences and events
Record moon diary
Space events e.g solar eclipse
What planets can be seen this time of the year?
When can you see the ISS?</td><td>Key texts

The Skies Above My Eyes
(Charlotte Guillain & Yuval Zommer)
George’s Secret Key to the Universe
(Lucy and Stephen Hawking with Christophe Galfard)
The Way Back Home
(Oliver Jeffers)</td></tr>
<tr><td>Community events and links</td><td>Global issues

Space tourists
Current and future space trips</td><td>Famous people/ Key Scientists

Claudius Ptolemy and Nicolaus Copernicus
(Heliocentric vs Geocentric Universe)
Neil Armstrong
(First man on the Moon)
Helen Sharman
(First British astronaut)
Tim Peake
(First British ESA astronaut)</td></tr>
<tr><td>Life Skills
Curiosity
Making Links</td><td>Key places
Sky at night and day in their locality</td><td></td></tr>
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