

## Year 5 – Earth and Space – The Earth and Beyond

### What it looked like last year (Year 1 in Seasonal Changes)

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

### What it looks like next year (KS3)

- Gravity force, weight = mass x gravitational field strength (g) on Earth  $g=10 \text{ N/kg}$ , our Sun as a star, other stars in our galaxy, other galaxies.
- The seasons and the Earth's tilt, day length at different times of the year; in different hemispheres.
- The light year as a unit of astronomical distance.

### Vocabulary (definitions)

**longitude and latitude** - a system of lines used to describe the location of any place on Earth.

**meridian** - an imaginary line around the Globe that connects points of equal longitude

Earth	Uranus	Sun	
Mercury	Jupiter	Saturn	
Venus	Mars	Neptune	
Solar System	Moon	spherical	
planets	sunrise	sunset	
rotates	dawn	orbit	dusk
waxing crescent	waning crescent		
waxing gibbous	waning gibbous		

### Sequence of Learning

1. Explore diagrams and photographs of the Solar System and beyond.
2. To explain the Earth's orbit, what a year is and investigate how the Earth's rotation appears to show the Sun moving across the sky.
3. Test shadow clocks and record position & length of a shadow.
4. Explore how the Earth's tilt causes seasonal changes and changes in daylight hours.
5. Investigate how the moon appears to change shape over a month.

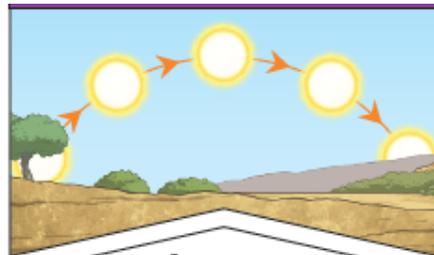
### Cultural Capital

- To be able to describe the movement of the Earth, and other planets, relative to the Sun in the Solar System.
- To be able to describe the movement of the Moon relative to the Earth.
- To be able to describe the Sun, Earth and Moon as spherical bodies.
- To be able to use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.
- The real life knowledge that links is: noticing patterns, observing changes over time, use secondary sources for research
- The jobs it can be used in are: Astronomer, Astronaut, Weather Forecaster.

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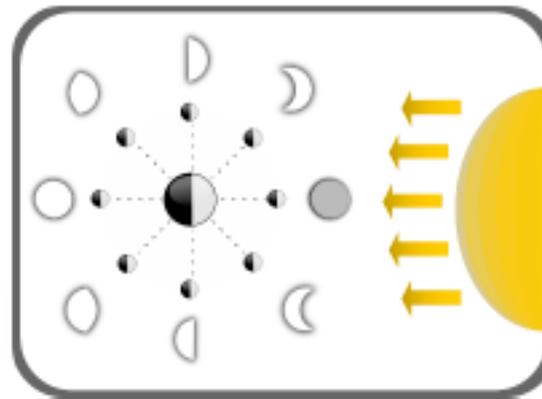
### Principles of Teaching Science.

- E**xploring – when we look at how things work in the world
- Q**uestioning – when we question what will happen
- U**nderstanding – when we use scientific language to explain
- I**nvestigating – when we can explore and are hands on
- P**redicting – when we use our previous knowledge to say what we think will happen.



It appears to us that the **Sun** moves across the sky during the day but the **Sun** does not move at all. It seems to us that the **Sun** moves because of the movements of Earth.

### Phases of the Moon



Waning means the moon looks like it is getting smaller. Waxing means the moon looks like it is getting larger. How much of the moon we see, depends on how much sunlight is hitting it. The moon reflects this sunlight.