Connections Knowledge Organiser

Key Definitions

	Term	Definition
1	Star	A burning mass of gas that makes heat and light energy (E.g. the sun).
2	Planet	An astronomical object that orbits a star and does not emit its own light. It can be terrestrial (dense and rocky) or Jovian (gas giant).
3	Gravity	The force that attracts an object towards a larger object.
4	Solar System	A star with objects (such as planets) revolving around it.
5	Light-year	The distance light travels in a year (≈9.46 trillion km).
6	Galaxy	An extremely large group of stars and planets that extends over many billions of light-years, held together by gravity (E.g. Milky Way and Andromeda).
7	Universe	All of space and everything in it (including stars, planets and galaxies).
8	Satellite	An object either natural (E.g. a moon) or man-made, that orbits around a planet.
9	Orbit	A curved path of a planet, satellite or spacecraft around an object such as the sun due to the attraction of gravity.
10	Vacuum	A space with no air.
11	Asteroid	Irregularly shaped rock that orbits the sun, mostly occurring in the asteroid belt.
12	Meteor	A mass of rock that burns after entering the Earth's atmosphere (meteorite when the rock has cooled on Earth)
13	Comet	A mass of ice and dust that has a long, luminous tail of gas.
14	NASA	The National Aeronautics and Space Administration – a US agency responsible for the exploration and study of space.
15	Astronomy	The branch of science that deals with space and the physical universe as a whole.

Key Person

Katherine Johnson (1981-2020)

Order of the Planets

Mercury
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Neptune

Space Exploration

Humans in space		
1	Laika	The first animal in space was a dog aboard Sputnik 2 in 1957.
2	Yuri Gagarin	First human in space 1961, aboard the Vostok 1.
3	Neil Armstrong	First person on the moon in 1969 aboard Apollo 11.
4	International Space Station (ISS)	Collaboration launched in 1998.

Solar System Missions		
1	Sputnik 1	The first man-made satellite to orbit the Earth, launched by the Soviet Union in 1957.
2	Mars Landers and Rovers	First launched in 1975 with plans to launch again in 2020 as part of the mission to get man on mars by 2030.
3	Galileo	Launched 1989 exploring Jupiter and its moons.
4	Hubble Telescope	Launched 1990 - captured images of both our own and distant galaxies.
5	Cassini	Launched 1997 - exploring Saturn and its rings.

Ideas for Home

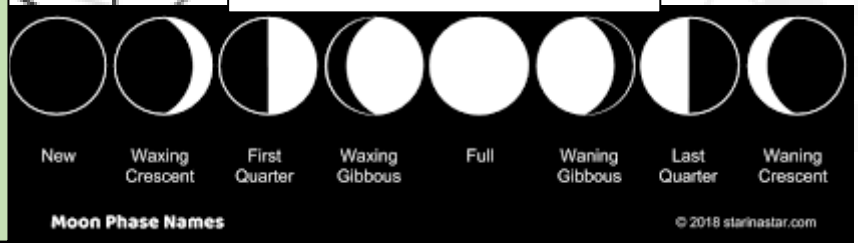
Things to try at home to support learning:

- Research some information about a specific planet
- Plan a space holiday with Virgin Galactic
- Keep a moon diary
- Write a prediction about what might be found on Europa
- Draw a timeline of key Space events
- Create a sundial to study shadow changes

Key Facts

- There are 24 hours in a day
- There are 365 ¼ days in a year
- The moon takes 28 days to orbit the Earth
- Earth is on a 23.5° axis

Moon Phases



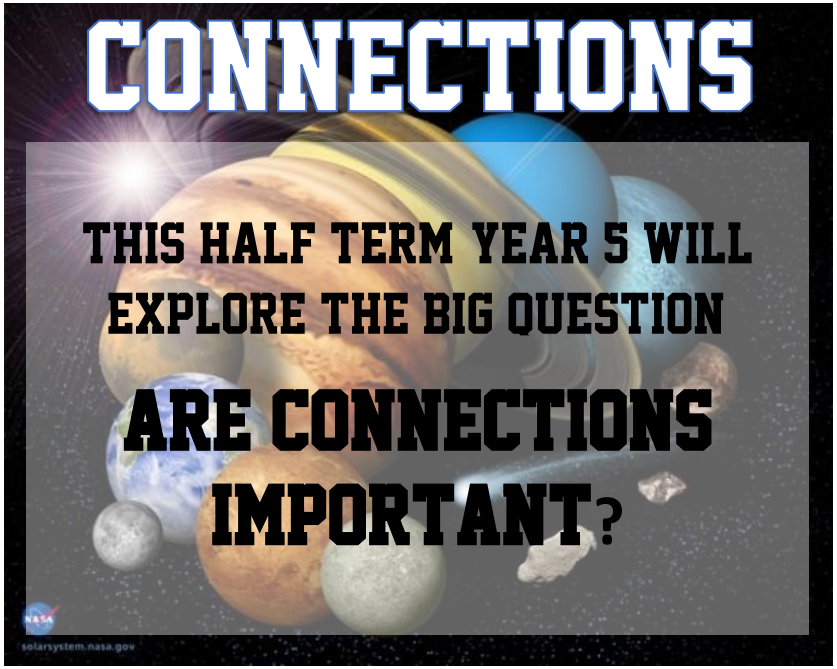
In **Maths** this half term, we will focus on place value and then addition and subtraction. The children will compare and order numbers up to one million. Within this unit, the children will also cover counting in 10s, 100s, 1000s and 10,000s as well as rounding to the nearest of these amounts as well. Negative numbers will be explored this half term, as well at Roman Numerals up to 1000. Towards the end of the half term, the children will be revising, consolidating and then extending their knowledge of the formal written methods for addition and subtraction. They will also apply this to approximating and estimating, finding inverse calculations and solving multi-step word problems.

Science will be the main topic focus for this half term as we explore the Moon's movement in relation to the Earth and the Earth's movement in relation to the Sun, using these ideas to explain night and day and the moon phases. The children will also be learning about the other planets within our Solar System and considering how everything is connected, and whether connections are important.

Our **RE** will involve considering connections within our own communities and then relating this to connections within communities belonging to other faiths – particularly the Muslim community of Umma. The children will explore the different aspects of Islam and how these connect to those within Umma.

Dates for the Diary:

- **Thursday 30th September at 5pm – Y5 Key Messages Meeting.**
- **Thursday 21st October – Trip to the Science Centre.**



Through our **English,** the children will be continuing their journeys with 'The Write Stuff' and first completing a narrative piece of writing based on an emotive, space themed video clip. 'One Small Step' is a film about a young girl who dreams of becoming an astronaut and has to overcome many obstacles to pursue her dream. The children will be retelling this story whilst practising their known writing lenses from Year 4 and mastering a few new lenses too. **Book Club** looks exciting for this half term as the children will be improving their inference skills, mastering some new non-fiction retrievals skills when reading about space and will also be reading about some less well known - but equally inspirational - scientists who have shaped our understanding of Space today. 'Counting on Katherine' will be one of the key texts in our Book Club work. **Spelling** will also be taking a new turn this year as we transition to a new programme to teach it. You can learn more about this at the Key Messages Meeting.

Even **French** takes a scientific turn as the children learn about the planets! The children will learn the planet names, practise their French pronunciation and even write sentences about them!

PE will take place once a week – every Thursday. This will start on Thursday 16th September (Week 2). The children will need to come into school every Thursday in their PE kits and will remain in them all day – this avoids any need to get changed at school. Please also ensure that any long hair is tied back on PE days and earrings are removed (or taped if they cannot be removed).

In **Art,** the children will develop their colour mixing skills, particularly finding multiple hues of grey to paint detailed pictures of the moon. They will also experiment with how they can show awareness of composition, organising the foreground, middle ground and background in their work. Creativity will also shine when the children replicate some of Peter Thorpe's art using different media such as chalk and pastels.

In **Computing,** the children are going to have the opportunity to learn about technology in Space! They will learn how the Mars Rover transmits data back to Earth and begin to explore number in binary, up to eight bits and understand the concept of binary addition too!

In **Music,** the theme of Space will continue as the children will explore how a motif can enhance music. 'The Planets' by Gustav Holst will be the main driver for this unit of learning.

Reading at home will be rewarded with raffle tickets this half term as the children hope to win some great prizes. Please encourage the children to record their reading in their home learning logs.