** All Saints National Academy – Knowledge Organiser**

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| **Theme: What is Ordinary Anyway?** |  **Year: 5** | **Science Focus: Earth and Space** |
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**What should I already know?**

* We have four seasons (autumn, winter, spring and summer).
* The Sun is a source of light but the Moon is not.
* Know that a **shadow** is caused when an object blocks light from passing through it.
* The properties of a **sphere**.

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|  | **What will I know by the end of the unit?** |
| What |  The Earth **rotates** on its **axis** anti-clockwise and makes |
| causes | a complete **rotation** over 24 hours (a day). |
| day and |  This makes it appear as the Sun moves through the |
| night? | sky but the Earth’s **rotation** causes day and night. |
|  |  Different parts of the Earth experience daylight at |
|  | different times - this means that it is morning, |
|  | afternoon and night in different places. This is also the |
|  | reason why we have **time zones**. |
|  |  Because of the Earth’s tilt, the poles experience 24 |
|  | hours of sunlight in the summer, and very few hours |
|  | of sunlight in the winter. |
|  |  As the Earth **rotates**, **shadows** that are formed |
|  | change in size and orientation. |
|  |  |
| Year |  The Earth takes 365 and a quarter days to **orbit** the |
| length | Sun. |
| and the |  Because of the extra quarter day it takes to **orbit** the |
| seasons | Sun, every four years on Earth is a **leap year**! |
|  |  It is the Earth’s tilt that causes the seasons. |
|  |  |
| The |  The Moon **orbits** the Earth anticlockwise and takes |
| Moon | approximately 28 days. |
|  |  The Moon spins once on its **axis** every time it **orbits** |
|  | Earth. This means that we only see one side of the |
|  | Moon. |
|  |  The Moon has different phases depending on where it |
|  | is in its **orbit**. |
|  |  The Moon’s **gravity** causes high and low tides. |
| What is |  There are 8 planets in our Solar System (Mercury, |
| the **Solar** | Venus, Earth, Mars, Jupiter, Saturn, Uranus and |
| **System?** | Neptune). Pluto is a dwarf **planet**. |
|  |  They all orbit the Sun, which is a **star**, and they all |
|  | have moons. |
|  |  The first four **planets** are relatively small and rocky, |
|  | while the four outer **planets** are gas giants (Jupiter |
|  | and Saturn) or ice giants (Uranus and Neptune). |
|  |  There are also **asteroids**, **meteoroids** and **comets** in |
|  | the **Solar System**. |
|  |  The **Solar System** is in a **galaxy** called the Milky Way. |
|  |  The **galaxy** is in the **universe**. |



**Other Diagrams**



The Sun, Earth and Moon are approximately **spherical.**

The Earth **orbits** the Sun.

The Moon **orbits** Earth.



When the Moon passes between the Sun and Earth, the **shadow** cast by the Moon falls on the Earth’s surface andwe would no longer be able to see the Sun. This is called a

**solar eclipse**.



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|  | **Vocabulary** |  |
| asteroid | a rock that **orbits** the Sun in a belt between Mars and |  |
| Jupiter |  |
|  |  |
| axis | an imaginary line through the middle of something |  |
| comet | a bright object with a long tail that travels around the |  |
| Sun |  |
|  |  |
| galaxy | an extremely large group of stars and planets. Our |  |
| galaxy is called the Milky Way. |  |
|  |  |
| gravity | the force which causes things to drop to the ground |  |
|  |  |  |
| leap year | a year which has 366 days. The extra day is the 29th |  |
| February. There is a leap year every four years |  |
|  |  |
| meteorite | a rock from outer space that has landed on Earth |  |
| orbit | the curved path in space that is followed by |  |
| an object goinground and round a planet, moon, or star |  |
|  |  |
| planet | a large, round object in space that moves around a star |  |
| shadow | a dark shape on a surface that is made when something |  |
| stands between a light and the surface |  |
|  |  |
| Solar | the Sun and all the planets that go round it |  |
| System |  |
|  |  |
| sphere | an object that is round in shape like a ball |  |
| spin | turns quickly around a central point |  |
| star | a large ball of burning gas in space |  |
|  | one of the areas into which the world is divided where |  |
| time zones | the time is calculated as being a particular number of |  |
|  | hours behind or ahead of GMT (Greenwich Mean Time) |  |
| universe | the whole of space and all the stars, planets, and other |  |
| forms of matter and energy in it |  |
|  |  |

**Investigate!**

* Compare the time of day at different places on Earth.
* Construct shadow clocks and sundials.
* Keep a Moon diary over the course of a month - what do you notice?