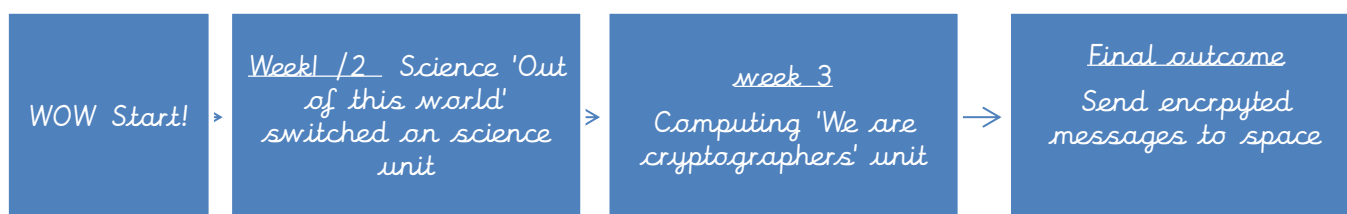


Year 5/6 Science / Computing based unit 'Out of this world' (3 weeks)



Overview of unit: Children will learn about the solar system and planets and our place within this. They will learn about the key scientists who made discoveries about Space and how this continues today. They will also develop an understanding of the role of the sun in day and night and how this affects our planet. This leads into a computing topic based on code breaking and encryption where children will create and encrypt messages to send to 'Space.' Children will explore how Earth communicates with space (ie. international space centre) then general work on codes including morse code.

<u>Working scientifically skills</u>	<u>Scientific knowledge skills</u>
<ul style="list-style-type: none"> Use diagrams to describe scientific ideas. (ie. the length of a year, month) Identify scientific evidence that has been used to support or refute ideas or arguments. (ie. the work of scientists to prove facts about space) To apply mathematical skills when modelling scientific facts (ie. distance between planets). Plan enquiries, including recognising and controlling variables where necessary. Comparative Observations Variables 	<ul style="list-style-type: none"> 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. 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. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. Spherical bodies Rotational Gravitational pull <p><i>Previous knowledge: New learning</i></p>

<u>Computer skills - We are cryptographers</u>
<ul style="list-style-type: none"> Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact <p>Basic skills to be taught alongside:</p> <ul style="list-style-type: none"> Talks about their experiences of ICT outside of school - year 6 Compares the use of ICT inside school with the uses outside school - year 6 Can combine the use of ICT tools for different purposes - year 5 Algorithm Debugging Encrypt/decrypt <p><i>Previous learning:</i></p> <ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output

- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Basic skills to be taught alongside:

- Can choose the type of program for a given task - year 4

Previous Vocabulary

Debug, Sequence, Algorithm, Program

Messages can be sent using various codes outside of line of sight (morse code and semaphore)

A key is needed to encrypt and decrypt messages using the Caesar cipher

Passwords should be complex, include a range of lower/upper case letters and symbols

A password should never be shared

rotation

orbit

spherical

month/day/year/night

solar system