Medium-Term Planning Subject: Computing				
Term and Year:	Spring Term, first half 2022			
Teacher:	Mr. Churchill			
Subject:	Computing			
Key Themes:	Data Handling – Mars Rover			
Memorable Experience:	Space exploration video – Moc	n Landing		
Vocabulary that will be taught:	Distance Binary co	de Dat	a	Transmit
	RAM – Random Access Memor	у	ASCII	
National Curriculum Objectives: Key Stage Two: • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Computing Skills that will be taught and assessed: • Independently and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific top • Use appropriate methods to validate information and check for bias and accuracy. • Independently solve a problem by planning and carrying out data collection, by organising and analysing data involving complex searches using a database, and by drawing conclusions and presenting findings. • The need for accuracy is demonstrated and strategies for spotting implausible data are evident.				
Focus of each lesson 'Can I' Statement(s)			Activities/k	Key points

Lesson 1	<u>Learning Objective:</u> Can I use the internet to search, safely, for information? <u>Success Criteria:</u> I can use the internet to find specific information using specific search terms.	Children to be introduced to the Mars Rover 1. In this lesson, the children are required to use the internet to research specific distances between celestial objects. The children will then use their mathematics skills to convert units to begin to understand the distances involved in transmitting data from another planet/moon.
Lesson 2	Learning Objective: Can I investigate binary code as a means of transmitting data vast distances? Success Criteria: I can state that binary code is a system of transmitting data using 1 and 0 in special combinations. I can read and calculate numbers sent in binary code.	Children will be introduced to binary code as a means of transmitting data over a vast distance. The children will need to use their mathematical skills in order to decipher simple messages sent using binary code.
Lesson 3	Learning Objective: Can I understand the function of RAM? Success Criteria: I can state that the more RAM a robot has, the more functions it can carry out.	Children will watch a film stimulus of the Mars Rover and the use of RAM. Can the children use their coding skills from Scratch (Autumn 2) in order to successfully program the Mars Rover for a specific purpose?

Lesson 4	Learning Objective: Can I calculate bit patterns? Success Criteria: I can use binary code to complete simple calculations.	Children will be introduced to the idea that binary code is used by computers to complete simple calculations. In this session, the children will learn how to use binary code to complete simple addition and subtraction calculations.
Lesson 5	Learning Objective: Can I use binary to send text messages? Success Criteria: I can use binary code and how it is converted using the ASCII language to send simple messages.	Children will use binary code and the ASCII conversion to send each other simple text messages.