Dore Primary School
Y5 Learning Journey 1
Fantastic Voyages

ENDPOINTS **Substantive knowledge children will know:** **Disciplinary knowledge children will know how to / be able to:**	<u>KS2 Science National Curriculum - Earth and space</u> • 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 • 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. • Identify scientific evidence that has been used to support or refute ideas or arguments. <u>Key stage 2 Computing National Curriculum</u> • 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 <u>Key stage 2 Art National Curriculum</u> • to create sketch books to record their observations and use them to review and revisit ideas • to improve their mastery of art and design techniques, including **drawing**, painting and sculpture with a range of materials [for example, **pencil**, charcoal, paint, clay]
Links to Prior Knowledge:	Geography – world map; Science – light and shadow, weather. Prior space learning.
Links for Relevance and Currency:	Current developments in space travel – New Horizons Probe
Immersion Event / Activity:	Astrodome. Design of space probes and preparation of expedition mission patch
Celebration of Learning:	
English Links:	English – Book Study – Hidden Figures Writing projects – Astronaut Recount, Planet Unknown
Maths Links:	- Calculating relative distance of planets from each other and the sun. - Consideration of 2D/3D shapes and why spherical bodies appear as spheres.

Subject	Lesson	Milestone (Key Knowledge or Skill)	Knowledge and Skills embedded through:	Endpoints	Links to Curriculum Drivers				
					Values	Outdoor Learning	P4C	Global / Rights	TASC
D&t (immersion)		Immersion Design with the user in mind, motivated by the service a product will offer (rather than simply for profit)	Morning visit to the astrodome – immersion in the solar system. Discussion around purposes of space probe (exploration) and link to new lj. Design and build a model of a space probe that will travel out into the solar system and gather information about the planets in the solar system.	I know how to make a model space probe that includes key features that a real space probe would need to accomplish its mission	✓				

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Science 1		Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.		I know the different characteristics of the planets in the solar system and how their distance from the sun affects this. (size, distance)					
Science 2		Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.		I know that the Earth rotates on its axis, that the Earth orbits the Sun and the Moon orbits the Earth. I Know that the Sun, Moon and Earth are approximately spherical bodies.					
Science 3		Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.		I know the different characteristics of the planets in the solar system and how their distance from the sun affects this. (Characteristics of individual planets)					
Science 4		Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.		I know the different characteristics of the planets in the solar system and how their distance from the sun affects this. (Characteristics of individual planets)					
Science 5		Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.		I know how the movement of the Earth causes night and day.					
Science 6		Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.		I know how why the Moon looks different at different times and how to classify the phases of the moon.					
Science 7		Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions Present findings in written form, displays and other presentations	Children pick as aspect of their learning from the current LJ to prepare and present an informative presentation. Children are free to select their own medium for this. TASC project.	Multiple of above – depending on group's focus.					X

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Science 8		Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments	Children learn about Geocentric and Heliocentric models of the solar system. They model both theories on the field, thinking about the movement and order of the planets in each theory. They research the history of both theories, noting details about key groups and scientists through the years. They hotseat as different characters with opposing views.	I know how humans' knowledge of the solar system has changed and the evidence that supported this.					
Computing/DT 1		DT Use innovative combinations of electronics (or computing) and mechanics in product designs. C Set IF conditions for movements. Specify types of rotation giving the number of degrees.	Children learn about robotic rovers and problems of sending commands via radio between planets. This is linked to coding. Children practice instructing each other in various tasks: blindfolded drawing, blindfolded assault course etc. Children taught precise terminology for movement and actions, using mathematical/coding terminology.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs					
Computing/D&T 2	C2	DT Use innovative combinations of electronics (or computing) and mechanics in product designs. C Set IF conditions for movements. Specify types of rotation giving the number of degrees. C Use IF THEN ELSE conditions to control events or objects. C Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.	Previous learning in relation to precise instructions is recapped and the children are introduced to the components of the EV3 robot and the LEGO programming system using ipads. They are introduced to the standard movement block and experiment with changing the movement variables. Children must build code that enables the robot to follow a tape track with one turn. Extension – add in a 180 turn and follow it back.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs					
Computing/D&T 3	C3	DT Use innovative combinations of electronics (or computing) and mechanics in product designs.	Recap of learning relation to use of standard movement block and function of variables. Class introduced to tank movement block and experiment with the variables in this block.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.					

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		C Set IF conditions for movements. Specify types of rotation giving the number of degrees. C Use IF THEN ELSE conditions to control events or objects. C Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions. COMPLETE	Children to set and program a route for their rover that takes in three turns and one 180 degree rotation using the tank movement block. Challenge – utilise the sound block to celebrate at the end.	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					
Computing/D&T 4	C4	DT Use innovative combinations of electronics (or computing) and mechanics in product designs. C Set IF conditions for movements. Specify types of rotation giving the number of degrees. C Use IF THEN ELSE conditions to control events or objects. C Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.	*IR sensor lesson*	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					
Computing/D&T 5	C5	DT Use innovative combinations of electronics (or computing) and mechanics in product designs. C Set IF conditions for movements. Specify types of rotation giving the number of degrees. C Use IF THEN ELSE conditions to control events or objects. C Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.	*Ultrasonic sensor lesson*	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					

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D&t 1		Design with the user in mind, motivated by the service a product will offer (rather than simply for profit)	Egg challenge 1: children study the problem of re-entry into the atmosphere and how best to land their crew back on planet earth. Children consider how this has been accomplished in the space program and consider how to help their "crew" survive using the materials used, with the challenge of saving as much weight as possible. In teams, they design a "vehicle" that will protect an egg from a 15 foot drop, making use of exploded and cutaway diagrams. Designs are refined and materials/methods of construction decided upon.							
D&t 2		Design with the user in mind, motivated by the service a product will offer (rather than simply for profit) Evaluate the design of products so as to suggest improvements to the user experience.	Egg challenge 2: children build and test their re-entry vehicles and assess their effectiveness. They then suggest refinements and improvements and record these in their books.							
Art 1				To create sketch books to record their observations and use them to review and revisit ideas To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]						
Art 2				To create sketch books to record their observations and use them to review and revisit ideas To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]						
Art 3				To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]						

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P4C	End of unit	Fairness and equality of opportunity in an open and equal society	Watch Hidden Figures – film about African-American women who were involved in the Apollo mission mathematics	Children will discuss and develop an appreciation that assumptions about race/sex have affected many people's lives detrimentally and that we can change what we perceive to be worng – links with Autumn Wellbeing Theme of Rights & Responsibilities.			X		
RE		To learn how to compare the different ways Sikhs put their beliefs into practice.	**Engagement** – to think about their own commitments and discuss the level and intensity they show. **Investigation** – to look at the Five Key beliefs, treated as equals, sharing, honesty and speaking to God through meditation. **Evaluation** – to consider why Sikhs put so much effort into their religion. **Expression** – to think about something that is really important to them, what are they prepared to give up and how much effort do they put in.	They can make links between how Sikhs practice their religion and the beliefs that underpin this.	✓			✓	
Music		To listen and respond to a piece of music – Dreaming of Mars	• to talk about the song • to explore its musical style • to embed a deeper understanding of the musical concepts related to the song • to understand the connection to the song and music	To understand what the song was about, name some of the instruments and to talk about the music and how it makes them feel.	✓				