

Dore Primary School

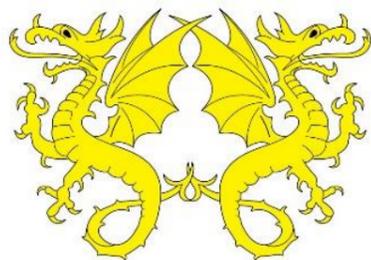
Y5 Learning Journey 1

Fantastic Voyages



Purpose of Learning Journey:	To study the solar system and space travel
Links to Prior Knowledge:	Geography – world map; Science – light and shadow, weather
Links for Relevance and Currency:	Current developments in space travel
Immersion Event / Activity:	Design of space probes and preparation of expedition mission patch
Celebration of Learning:	English – Dr Xargle; D&T/Science – Space mission presentation
English Links:	English – Book Study – Hidden Figures
Maths Links:	Statistics – THINGS TO INCLUDE: KEY VOCABULARY, KEY QUESTIONS

Subject	Lesson	Milestone (Key Knowledge or Skill)	Knowledge and Skills embedded through:	Outcomes	Links to Curriculum Drivers				
					Values	Outdoor Learning	P4C	Global / Rights	TASC
D&T		Immersion Design with the user in mind, motivated by the service a product will offer (rather than simply for profit) COMPLETE	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. Conduct reflection on the same in order to	Children engaged in theme of exploration and begin to appreciate the conditions in deep space and the difficulties in traveling therein.	✓				
Science	1	Describe the Sun, Earth and Moon as approximately spherical bodies COMPLETE	Children learn details about how humans worked out that the earth was round. The Children watch a video about Aristotle and make notes on the same before answering questions. Finish with a drama activity where Aristotle is arguing with someone who does not believe him.	Children are aware of proofs that the Earth is round and the history of Aristotle's observations.					
Science	2	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the Sun, Earth and Moon as approximately spherical bodies COMPLETE	Children investigate the characteristics of both the Earth and the Sun. Children read facts about the sun and earth and sort these. Discussion about which are most interesting/surprising.	Children identify relevant/interesting facts about the earth and sun and write about their favourite, supporting their opinions. Gaining an appreciation of the nature of both bodies					
Science	3	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the Sun, Earth and Moon as approximately spherical bodies	Children learn about the relative distances of the planets in the solar system and the planets' names and relative sizes. Children are put into groups corresponding to planets and pace out the distances on the field. They then make their own models in	Children gain an appreciation of the composition of the solar system and why night and day occurs.		✓			



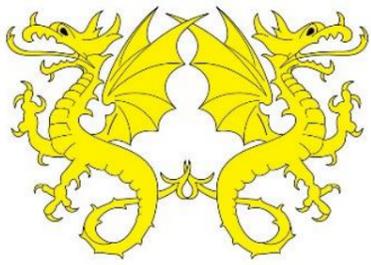
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		COMPLETE	groups, using string, tent pegs and coloured materials from the field/ wildlife garden. Children watch video of why we experience night and day. They then explain it to their classmates; best explanations are performed in front of the class. Children then write up their explanations in book.						
Computing/D&T	C1	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. COMPLETE	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.	Children begin to build a working knowledge of the EV3 sets, appreciate the difficulties in sending commands into space and begin to gain a working knowledge of movement commands.					
Science	4	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system COMPLETE	Children are briefed on the project – planning a mission to explore one of the planets. Children put into pairs/threes. Children do a scavenger hunt on the field for planets/moons in the solar system. They then group together the planets with their moons and read out to the class some basic facts about them. Children then use laptops to research a planet/moon that they have found interesting and would like to explore on their mission. They reproduce and display their research in a paper-based method of their choosing.	Gain a greater depth of knowledge about different planetary bodies and communicate this to their classmates.			✓		✓
Science/History	4	To learn about our solar system Describe the main changes in a period of history (using terms such as: social, religious, political, technological and cultural) COMPLETE	Children explore the history of manned space flight from Yuri Gagarin to the ISS and future space missions. Highlight role of women and BAME in space exploration. Learn about factors in designing a spacecraft and what the spacecraft needs to do, using Apollo mission as a case study – Groups design their own spacecraft with annotated features and explanation of why they are required.	Children increase their knowledge of conditions in deep space and how other planetary bodies differ from our own. They use this knowledge – in addition to historical study of the space station to create their own spacecraft.	✓				✓
Computing/D&T	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.	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 begin to build code controlling the movement of the rover. They begin to learn how changing the variables in the code alters the movement of the rover.	✓				✓



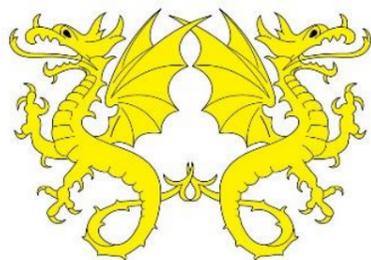
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		C Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.	Children must build code that enables the robot to follow a tape track with one turn. Extension – add in a 180 turn and follow it back.					
Science	5	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the Sun, Earth and Moon as approximately spherical bodies Describe the movement of the Moon relative to the Earth COMPLETE	Children learn about the characteristics of the moon and how it was formed. Class composes and writes an explanation of this, using support where required. Children watch a video on the various phases of the moon and must explain this process to a partner. Children study the lunar calendar for this month and answer questions in books relating to the phases of the moon.	Children are aware and can explain the formation of the moon and its characteristics.	✓			
Science	6	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 COMPLETE	Children re-cap previous learning on the movement of the moon and solar system. Children learn about the tilt of the Earth on its axis and the reason why this, coupled with its orbit around the sun causes seasons. The children then create models/diagrams to show this and present to the class. Class provide feedback on the same.	Children develop a knowledge of how the orbit of the Earth and its tilt cause the seasons	✓			
Computing/D&T	C3	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. COMPLETE	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. 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.	Children build on their previous knowledge to utilise different functions of movement, through different types of movement block. Building on their appreciation of how altering variables affects the movement of the rover.	✓			
D&T	7	Design with the user in mind, motivated by the service a product will offer (rather than simply for profit) COMPLETE	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.	Children learn about the characteristics of the Earth’s atmosphere in the context of re-entry. Children consider the practical consideration in designing the re-entry capsule and consider appropriate designs/materials that could be used, refining their ideas.	✓			✓



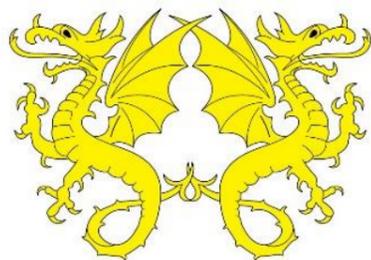
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D&T	8	<p>Design with the user in mind, motivated by the service a product will offer (rather than simply for profit)</p> <p>Evaluate the design of products so as to suggest improvements to the user experience.</p> <p>COMPLETE</p>	<p>Egg Challenge 2: children build and test their re-entry vehicles and assess their effectiveness. They then suggest refinements and improvements and record these in their books.</p>	<p>Children will have critically evaluated their design and consider refinements in their design.</p>	✓				✓
Computing/D&T	C3	<p>DT Use innovative combinations of electronics (or computing) and mechanics in product designs.</p> <p>C Set IF conditions for movements. Specify types of rotation giving the number of degrees.</p> <p>C Use IF THEN ELSE conditions to control events or objects.</p> <p>C Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.</p> <p>COMPLETE</p>	<p>Recap of all movement learning and all blocks/variables used so far.</p> <p>Introduction of sensor components and detailing function of same. Discuss possible applications of these components. Model correct coding to cease movement when pressure sensor is triggered.</p> <p>Children work on building a route and associated coding that includes an obstacle that the rover will stop at when it reaches.</p>	<p>Children are introduced to building IF conditions into the movement of their rover and applying this to existing code.</p>	✓				
Science	q	<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>TO FINALISE SLIDES AND RESOURCES</p>	<p>Previous learning on the sun and the seasons recapped.</p> <p>Children learn about how the moon's gravity causes tides.</p> <p>Children are given a glossary of vocabulary and facts about the sun and moon. They are asked to discuss the question "what would the Earth be like without the sun/moon. Ideas are recorded on pieces of paper on the board and the children use these to scaffold a piece of writing on the subject.</p>	<p>Children will have a knowledge of why the tides happen and will have expanded their knowledge on the effects that the moon and sun have on our planet.</p>	✓				
Computing/D&T	C4	<p>DT Use innovative combinations of electronics (or computing) and mechanics in product designs.</p> <p>C Set IF conditions for movements. Specify types of rotation giving the number of degrees.</p> <p>C Use IF THEN ELSE conditions to control events or objects.</p> <p>C Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.</p> <p>TO FINALISE SLIDES AND CODING MODELS</p>	<p><i>IR sensor lesson</i></p>						



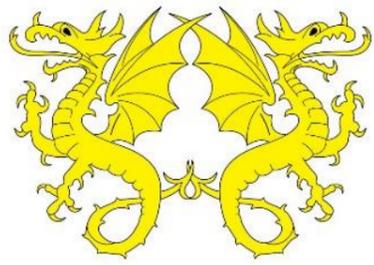
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Celebration	10	TO DO: SLIDES	Children work to compose a presentation about their mission to their planet, including: their mission patch, their planet of choice, their probe, what their probe discovered about the planet and why they want to go there, their spacecraft design and their re-entry vehicle. All aimed at convincing the class that they should be put forward to the shortlist for “NASA funding”. Children to practice and deliver presentation.	Children will celebrate their learning over the past half term and show their understanding by answering questions from classmates.	✓				
Celebration	11		Continue above.		✓				
Computing/D&T	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.	<i>Grab coding – link with other code blocks to complete “Rover mission”.</i>		✓				
Celebration	11		Continue above.						
Maths		Interpret information tables, graphs & bar charts and use them to answer questions. Discuss the difference between discrete and continuous data	Look at data describing speeds of various space explorations and represent the data appropriately	Children will understand the practical applications of Maths in everyday life	✗				
English	1	To use descriptive language	Planet settings	Research and recap Y4 Milestones to prepare for writing 2 paragraphs about					
Book Study	1	Hidden Figures – non-fiction	Account of the Africa American women who worked at NASA in the 1950s and 1960s	Develop and appreciation of the contribution we might not be aware of and why that happens ie unconscious bias/deliberate omission					
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 wrong – links with Autumn Wellbeing Theme of Rights & Responsibilities.			✗		
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.	They can make links between how Sikhs practice their religion and the beliefs that underpin this.	✓			✓	



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			<p>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.</p>					
Music		To listen and respond to a piece of music – Dreaming of Mars	<ul style="list-style-type: none"> 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.	✓			