

## DISCOVERERS STEAM CURRICULUM PLANNING (Recovery Curriculum)

CYCLE B		Virtue Focus: Integrity & Cooperation	Science Enquiry Focus: Explore & Ask	SCARF Focus: - SAFETY - Me & My Relationships	Children's own questions from knowledge elicitation in addition to...	
Autumn 1 <sup>st</sup> Half					The Big Question: What is light and what exactly is in a black hole? <i>Including Mini Topic: How is it possible that the Pyramids of Giza were built?</i>	
S	<p>The children will revisit Lower KS2 National Curriculum Science objectives for Light. They will be able to articulate that they need light in order to see things and that dark is the absence of light, that light is reflected from surfaces, that light from the sun can be dangerous and that shadows are formed when the light from a light source is blocked by an opaque object. They will find patterns in the way that the size of shadows change.</p> <p><b>By the end of the topic, children will be able to:</b></p> <ul style="list-style-type: none"> <li>• recognise that light appears to travel in straight lines</li> <li>• use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</li> <li>• explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</li> <li>• use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> <li>• Understand how a periscope works to design and make a simple periscope</li> </ul> <p><b>Key Vocabulary:</b> Light, light source, reflection, refraction, incident ray, reflected ray, the law of reflection, visible spectrum, prism, shadow, transparent, translucent, opaque, eye, eyelid, pupil, sclera, iris, cornea, retina, optic nerve</p> <p><b>Working Scientifically:</b> Our scientific enquiry is 'Explore and Ask'.</p>	<p><b>Purpose &amp; Outcome:</b> At the start of this topic, the children will be invited to identify their prior knowledge of light and will be asked to consider what they believe a black hole to be. They will be invited to ask their own questions based on this natural phenomenon, which will be answered as the topic progresses.</p> <p>During this topic, the children will build on their existing knowledge of light from Lower Key Stage Two and will be able to articulate what light is and its properties. They will be able to link this to understanding of the anatomy of the human eye and will be able to explain exactly how we see things. They will use their scientific understanding to design and make a simple periscope, following which they will be able to articulately and scientifically explain how it works.</p> <p>By the end of the topic, the children will be able to discuss the progress that scientific understanding of light and how we see things, in conjunction with modern technology, has contributed to modern day discoveries such as Katie Bouman's algorithm which contributed to the photo of a black hole in 2019. They will link their understanding of modern-day STEM discoveries to the work of the Newquay Spaceport and Goonhilly Earth Station, where they will learn how this all is relevant to them, their future and life in Cornwall.</p> <p>As part of the mini-topic, children will explore the achievements of the earliest civilizations – an overview of where and when the first civilizations appeared and a depth study of Ancient Egypt. They will link their understanding to the work of mechanical engineering as they ask, 'How is it possible that the Pyramids of Giza were built?'</p>				
	<p><b>Technology:</b> Children will recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. They will describe how simple mechanisms increase the effects of a force. They will use this knowledge in conjunction with a historical understanding of the Ancient Egyptian civilisation to consider how it was that the Pyramids of Giza came to be. <b>Key Vocabulary:</b> Gears, pulleys, cams, levers, linkages</p>	<p><b>Key Topic Texts:</b></p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Cosmic: It's One Giant Leap for Boy Kind by Frank Cottrell Boyce</p> </div>	<p><b>Hook / Trip/ Visits &amp; Visitors:</b> Sadly, we cannot have visitors at this time but will plan memorable learning experiences.</p> <ul style="list-style-type: none"> <li>• Dark Day'</li> <li>• Visitor conference calls TBC due to Covid-19 considerations</li> </ul>			
E	<p><b>Engineering:</b> The children will learn about, and be able to articulate, what the work of a mechanical engineer entails, including future job prospects and virtues required to succeed as a mechanical engineer. They will use this understanding, in conjunction with their technological understanding of pulley systems, to look at 'The Egyptian Pulley' and investigate whether this could have aided the construction of the Pyramids of Giza, as well as explore the ancient invention of the 'shaduf' and how exactly this worked.</p>					

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<b>A</b>	<p>Arts: The children will learn about Aurora Borealis (The Northern Lights) and the science behind what causes them. They will develop a painting from a drawing, carrying out preliminary work to learn how to mix appropriate colours and use different media and techniques to recreate an image of Aurora Borealis. The children will use colour to create effects such as atmosphere and light/shadow/dark. They will also produce self-portraits.</p>	<p><b>SCARF whole school focus (including Equality Objective where relevant):</b> Safety Me &amp; My Relationships</p>	<p><b>Links to Local Industry / Real Life:</b> Newquay's Spaceport; AeroHub; Goonhilly Earth Station; Mechanical engineering career prospects</p>
<b>M</b>	<p><b>KEY LEARNING IN OUR MATHS RECOVERY CURRICULUM:</b> During this half term we will undertake a significant review of Y4 &amp; Y5 number and place value. This includes representing and comparing numbers, rounding and developing an understanding of negative numbers. Addition and Subtraction learning sessions will include a focus on inverse operation and problem solving. White Rose teaching materials will be used in addition to the DFE's Ready to Progress materials which have been developed to address the key areas of mathematical learning missed during the period of school closure.</p>		
<p><b>English Curriculum: KEY LEARNING IN OUR ENGLISH RECOVERY CURRICULUM:</b> Getting back into reading using Accelerated Reader and our VIPERS approach to reading comprehension. Revision of year 4 and year 5 writing sills, including tense and sentence structure. We will also revise Y3/4 and Y5 spellings and will be using Spelling Shed and Literacy Shed to support our learning. Cold Write: Retelling of the Three Little Pigs (including adjectives, adverbs and fronted adverbials). We will produce a biography of Katie Bouman (including key features, colons and semi-colons) and a non-chronological report: how the eye works (including bullet points, headings and sub-headings) <b>Key Fiction Texts:</b> Cosmic: It's One Giant Leap for Boy Kind by Frank Cottrell Boyce; Under the Lights <b>Key Non-fiction Texts:</b> The Light Spectrum; Ancient Egypt; Howard Carter</p>		<p><b>Autumn 2020 Recovery Curriculum</b> Our Recovery Curriculum acknowledges that there have been big losses to children as they have stayed at home. The focus for schools this autumn is on ensuring that pupils are ready to learn and as such social and emotional learning will be prioritised. The act of recovery is at least as much an emotional and social one as it is academic, and our ability to recognise and plan for this will be at the heart of our learners' eventual success. An increased proportion of curriculum time will need to focus on wellbeing to help our children recover emotionally while sensibly addressing their gaps in learning. Academic recovery in the Autumn Term relies on an increased focus on the key fundamental skills. Increased time in each class will be spent on reading, writing and maths through whole school strategies, targeted support to address identified gaps in learning and personalised support for those who need some extra catching up. We plan to keep our STEAM curriculum themes but recognise that, in the Autumn Term, time must be dedicated to vital catch up learning. Addressing the negative impact of school closures will require a sustained response but will work hard to get our pupils back on track, returning to our full and broad curriculum by the Summer Term.</p>	