

Pioneer Federation
Medium term plan
LKS2 Cycle 1, Term 1
D.T



Subject: D.T			
Key Concept/ Theme: Inventors and Inventions What would our lives be like without engineers? Technical Design			
Prior Learning links: KS1 Structures KS1 Toys LKS2 Cycle 2 Electricity			
Vocabulary: inventor , invention, prototype, architect , designer, engineer, adapt, inspire, justify, evaluate			
School specific areas to cover (Add in any local areas of study, trips and people)			
CP	EH	SMV	PM
1.	<p>Prior learning reconnection (year group, cycle & term): KS1 Structures KS1 Toys LKS2 Cycle 2 Electricity LO: Let’s learn about how inventors solve problems Activity: Ask the children which invention they think they couldn’t live without and why. Give them a few examples to discuss e.g. electricity, computers, the internet, etc. Next, show some famous inventions and gauge prior knowledge. Do they know who invented these life changing creations? Link to ‘Rosie Revere’ learning and reminder of the quote ‘Failures are part of engineering’, but the <i>true</i> failure is if you give up and stop trying”. Do they think these inventors made the perfect product the first time or did they need to keep practising? The children will work in groups and will be given an existing invention to discuss. They will then present to the rest of the class. They will explain how this invention has changed the world for the better. Plenary discussion, after they have heard from their peers, which invention do they think has been the most influential? Why?</p>		
2	<p>Reconnection: What invention do you think has changed people’s lives the most? LO: Let’s plan and design an invention. Activity: In this lesson the children will create their own design based on what they have learnt about famous inventors, as well as the fictional ideas of Rosie Revere. Remind them that they need to solve a problem and improve people’s lives with their ideas. The children will learn how designers, inventors, engineers and architects use technical drawings to aid them in depicting an accurate portrayal of their designs e.g. architects use blueprints which supplies the information needed to build the project accurately. Explain to the children that, in the next lesson, they will make a prototype of their design (i.e. a model that helps designers develop and evaluate their ideas). Therefore, they will need to be clear on their plans what type of materials they will use to make them e.g. foil to represent metal because it has a metallic finish and is reflective. The children could draw their design from several different perspectives to show they have considered</p>		
3 and 4	<p>Reconnection: Why are technical drawings important for designers? Share some examples of the children’s designs. LO: Let’s learn how to make a prototype.</p>		

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	<p>Activity: Today, the children will be creating their prototypes using junk modelling materials. They should refer closely to their plans when selecting from the materials. Remind them that they must focus on what is appropriate for their design and not just what is visually appealing. Children will need several lessons on this project, you may decide to create a D.T afternoon so the children can make their models uninterrupted.</p>
5	<p>Reconnection: Why do inventors make prototypes? LO: Let's evaluate our prototypes Activity: The children will review their prototypes. What is successful about their model? What changes did they make during the making process? How did these changes improve the design? How will this impact positively on the user? What might they do differently next time?</p>
6	<p>Reconnection: Why were bones used for Stone Age necklaces? LO: Let's learn about the first airplane. Activity: The children will learn about the Wright brothers who made the first successful airplane. Revisit prior learning about having to adapt and make improvements. How did the plane evolve from a basic glider to a plane that had a rudder and then an engine? The children will design their own plane based on a select choice of materials; a clothes peg, four lolly sticks and a paper fastener. Encourage them to consider all aspects of their design. How could colour choices be important when designing a plane?</p>
7	<p>LO: Let's make a model air plane Activity: Using what they know about the Wright brothers and the first airplane the children will make their own model plane. Children to use their design to refer to throughout the making process. Ask children about their design choices. Why have they chosen to use the materials in this way? If there is opportunity, children can fill out complement slips for each other which will allow opportunity for constructive peer feedback. The planes could be hung around the class room to inspire future learning.</p>
<p>End points:</p> <p>To know how to create an invention to solve a problem and that designing something first, with a prototype initially developed, creates a better final result.</p> <p>To know the names and work of designers – James Dyson</p>	