Curriculum | Medium Term Plan – Summer – Year Four

Victoria Park Primary Academy

Challenge Pack:	Crazy Contraptions	Challenge outcome:	How can we design a product which solves a problem?	NC Year: Length of term:	(4 & 7 weeks)
Summary:	Children will explore the industrial revolution and inventions over different time periods; how these have changed in the world we live today. Children will look at how designs and inventions have been created and changed over time that solved problems. Children will then go onto creating their own product to solve a problem. By looking at modern day problems, they will create and produce art work and designed products that solve a problem.				
Key texts:	Fiction: Iron Man Runaway Robot by Frank Cottrell-Boyce Mo Lottie and the Junkers by Jennifer Killick Non-Fiction: Science Comics: Robots and Drones Inventions: A Children's Encyclopedia Girls Think of Everything	Trips and visits:	Think Tank visit— children will visit the Think Tank to explore and investigate various gadgets and contraptions practically. This will be linked to the Science unit electricity. The children will be able to create their net zero product woth simple circuits.	Inspire parent sessions:	
		Science Units	Electricity Sound	PE: Music:	

Physical Oracy (Voice, Body Language)	Linguistic Oracy (Vocabulary, language, rhetorical techildreniques)	Cognitive Oracy (Content, Structure, clarifying and summarizing, self-regulation and Reasoning)	Social & Emotional Oracy (Working with others, Listening and responding, Confidence in speaking, Audience Awareness)
To consider movement when addressing an audience. To consider how tone, volume and pace influence meaning.	To carefully consider the words and phrasing they use to express their ideas and how this supports the purpose of talk.	To be able to give supporting evidence e.g. citing a text, a previous example or a historical event. To ask probing questions. To reflect on their own oracy skills and identify areas of strength and areas to improve.	To be able to give supporting evidence e.g. citing a text, a previous example or a historical event. To ask probing questions. To reflect on their own oracy skills and identify areas of strength and areas to improve.

	Maths:	English:	NICER:
(1)	Area of learning: Fractions/Decimals Mental Maths: Place Value Knowledge and skills: WALT: identify number bonds to 10, 100 and 1000 WALT: find the compliments of fractions WALT: represent numbers involving decimals WALT: represent numbers involving decimals WALT: compare decimals	Purpose: Inform Text Type: Newspaper report about the invention of a particular contraption (iPad) Text: Inventions – A children's encyclopaedia Knowledge and Skills • Examine and identify the features a newspaper report • Create and use headlines using alliteration, puns and rhyme • Use inverted commas so that we can show a quote Understand what a relative clause and pronoun is so that we can add more information to our sentences	Crazy Contraptions - How can we design a product which solves a problem? Introduction to Challenge pack. Understanding of what we will be learning about and why – what is our outcome? TASC Wheel/ Complete 'Explore the Challenge' page. CAFRA for trip (date of trip dependent). Thinking hats and PMI based on Hook (tbc with trip). Link to challenge outcome (for weeks learning) – children will be able to explain what the challenge outcome is. They will have begun to think about possible outcomes. Ingenious inventors- Children will be introduced to new challenge pack Crazy Contraptions. They will learn about inventors in History. They will then do Geography lessons to find out the hometown of inventors. Hook- Environmental scientist to set challenge of creating new net-zero product that can be used in school. Tasc wheel- Gather/ Organise/ Ideas Killer Question- What are some of the most famous inventions through time that have taken place and who were they created by? H2.1c / 1d As Historians WALT: Sequence time periods studied to create an identified timeline through history Outcome-Children will create a time line of important inventions G3.1b As Geographers *WALT- name and locate and cities of the UK, geographical regions.* Outcome: Understand where famous inventors live so that we can plot them on a map - put inventors on a map/ countries and cities of UK PSHE C2.1 As Citizens WALT: Consider the different pathways that people

			take in life. Outcome: Explore the lifestyle and choices of various people. Discuss how the different pathways they have chosen in life Link to Outcome- Use the ideas of inventors to inform own invention.
(2)	Area of learning: Fractions and Decimals Mental Maths: Fractions/Decimals Knowledge and skills: WALT: order decimals WALT: round decimals WALT: round decimals WALT: find halves and quarters WALT: solve problems involving fractions and decimals	Purpose: Inform Text Type: Newspaper report about the invention of a particular contraption (iPad) Text: Inventions – A children's encyclopaedia Knowledge and Skills • Fronted adverbials • Compose and orally rehearse a newspaper article (oracy) • Use the features of a newspaper report (mini-write) Plan a newspaper report	Human and land use- Children will look how society has changed over time in terms of land use. Killer Questions- Where in the UK have different industries developed? Which designs or creations are different cities famous for? H2.2c As Historians WALT Identify and give reasons for historical changes and events Outcome- Children will investigate cause and effect of inventions in the past on British History. G3.3b As Geographers, WALT - identify human and land use patterns so that we can understand how these have changed over time. Outcome: By comparing the land use in local regions from the past to present, children will have a deeper understanding of how land has changed over time. Children to also notice patterns in land use in key UK cities Links to outcome- Children will use knowledge from historical changes to inform planning of own invention. RE- As Theologians WALT: Identify and describe the specific core beliefs and concepts of religions studied (Islam) S2.2l As Scientists WALT: identify electricity, how it is conducted and the importance of circuits *Outcome: Children identify what electricity it and how we use it in our everyday lives*
(3)	Area of learning: Money Mental Maths: Fractions and decimals Knowledge and skills: WALT: recognise value of coins WALT: order amounts of money WALT: estimate amounts of money	Purpose: Inform Text Type: Newspaper report about the invention of a particular contraption (iPad) Text: Inventions – A children's encyclopaedia Knowledge and Skills • Draft a newspaper report • Draft a newspaper report	The great and far-reaching industrial revolution- Children will learn about the inventions in the industrial revolution. They will find out facts about these and offer their own opinions. Killer Question Describe how the Industrial Revolution caused a major change for people in the past. What inventions were created.? H2.3b As Historians WALT: Identify changes, cause and impact at the time of events beyond our living memory

	WALT: convert pounds and pence WALT: find the total of money	• Edit and up level a newspaper report Write a newspaper report	H2.3d As Historians WALT: Differentiate between fact and opinion Outcome-Children will have a deeper understanding of the impact of the Industrial Revolution. They will sort events into fact and opinion. H2.3c As Historians WALT: Make connections and contrasts over different periods of time Outcome- Children will complete a grid, historical overview of time period before and after the Industrial Revolution. Links to Outcome- Children will use ideas from previous creations to create their own net-zero invention. S2.2l As Scientists WALT: identify conductors and insulators so that we can recognise objects which allow electricity to travel *Outcome: Children identify what electricity it and how we use it in our everyday lives*
(4)	Area of learning: Money Mental Maths: Money Knowledge and skills: **WALT: find the difference of money** **WALT: find the difference of money (counting on change)** **WALT: solve problems involving money (addition/subtraction operations)** **WALT: solve problems involving money (multiplication/division** **WALT: solve problems involving money (four operations)**	Purpose: Inform Text Type: Letter from an inventor explaining what they have invented Text: Robots and Drones Knowledge and Skills • Examine and identify the features of a letter (Read and Rip) • Understand what a relative clause/pronoun is to provide more information to our sentences • Use apostrophes for singular and plural possession Compose and orally rehearse a letter (oracy)	<u>The creation of communication-</u> children will learn about different computer networks. They will then learn about codes and commands. Killer Questions How has the invention of the internet and coding helped with designs in the modern day? C2.1a As Digital Technicians WALT - identify computer networks so that we can understand how they can be used for communication. Outcome: What is the internet, who invented the internet what has it made possible for us today? C2.3a As Digital Technicians WALT - write a sequence of codes and commands Outcome: Use Playgrounds to create a short game with a goal to accomplish. Links to outcome- children will create own games which they will showcase to teacher judges. S2.2m As Scientists WALT: identify components of simple circuits so that we can understand how electricity passes throughOutcome: Children to make a simple circuit

(5)	Area of learning: Time Mental Maths: Money Knowledge and skills: WALT: recognise measures of time (hours, minutes and seconds) WALT: read the time to the nearest 5 minutes WALT: read the time to the nearest minute WALT: use am and pm time WALT: represent time using the 24-hour clock	Purpose: Inform Text Type: Letter from an inventor explaining what they have invented Text: Robots and Drones Knowledge and Skills • Plan a letter • Draft a letter • Edit and improve a letter Write a letter from an inventor explaining what they have invented	Simple Algorithms- Children will learn about simple algorithms and then will use these to create own game. C2.3b/ C2.3c As Digital technicians WALT – Use repetition in programs Outcome: Use Playground and understand input and outputs to create a short game with a goal to accomplish C2.3d As Digital technicians WALT - detect and debug simple algorithms Outcome: use Playgrounds to debug algorithms/ represent problem and solution using screenshots in Keynote C2.3e/ C2.3f As Digital technicians WALT: use a notion of variables, bugging and debugging. Outcome: Edit and showcase the games we have created. Links to outcome- children will create own games which they will showcase to teacher judges. S2.2n / S2.2σ As Scientists WALT: conduct an experiment so that we can identify effects on the lamp light. Outcome: Children to predict what will happen and record results taking into consideration variables etc (Lesson 1)
(6)	Area of learning: Time Mental Maths: Time Knowledge and skills: **WALT: recognise measures of time (years, months and days)** **WALT: convert analogue and digital time** **WALT: convert analogue and digital time (12 hours)** **WALT: convert analogue and digital time (24 hours)** **WALT: solve problems involving time**	Purpose: Inform Text Type: Instructions of how to work a contraption (iRobot Cat) Text: Robots and Drones Knowledge and Skills • Examine and identify the features of instructions (Read and Rip) • Use prepositions to clarify position in our instructions • Use imperative verbs so that we can inform our reader • Use adverbs to clarify verbs	S2.2n / S2.2σ As Scientists WALT: conduct an experiment so that we can identify effects on the lamp light Outcome: Children to predict what will happen and record results taking into consideration variables etc (Lesson 1) C2.11 As Citizens WALT: identify what makes me unique

			Outcome: Children to explore what it means to be unique and share their unique traits about themselves. Children to write down their traits onto post it notes
(7)	Area of learning: Data Mental Maths: Time Knowledge and skills: **WALT: interpret charts** **WALT: interrogate data (sum and difference)** **WALT: recognise line graphs** **WALT: construct line graphs** **WALT: solve problems involving data**	Purpose: Inform Text Type: Instructions of how to work a contraption (iRobot Cat) Text: Robots and Drones Knowledge and Skills • Use time fronted adverbials so that we can sequence our instructions • Compose and orally rehearse our instructions (oracy) • Write a set of instructions (mini-write)	<u>Recycle our way out of a problem-</u> Children will understand the importance of recycling and then use recycling to create own product. D2.4b As design technicians WALT: describe how existing products with a similar design have been effective Outcome: Children to research a range of successful products and identify its successes. D3.4a As design technicians WALT: explain how key design events have had effective impact in the world and met their design purpose Outcome: Building on previous learning, children to evaluate how these key designs have impacted the world D2.1b As Design Technicians WALT: explain how my ideas meet set design criteria Outcome: begin to look at what the problem the school needs solving, link to science (electricity) and renewable energy. Children will then design a product that solves a problem and explain how their final design meets the design criteria Links to outcome- children will recycles materials to create own net-zero product which will be presented to the judges. Science: Retrieval, evaluation and assessment (Electricity)
(8)	Area of learning: Angles Mental Maths: Data Knowledge and skills: WALT: recognise turns and angles WALT: identify right angles in shapes WALT: compare angles	Purpose: Inform Text Type: Instructions of how to work a contraption (iRobot Cat) Text: Robots and Drones Knowledge and Skills • Plan a set of instructions • Draft a set of instructions • Edit and up level our instructions	<u>Design/ Design/ Design-</u> children will design final outcome. They will use knowledge from Science and History to inform the design of the final outcome. D2.4b As Design Technicians WALT: Sculpt and make a prototype of our invention

	WALT: identify angles (obtuse, right, acute) WALT: compare and order angles	Write a set of instructions	Outcome: As a group begin to design your product, look at how this will be presented S2.1q As Scientists WALT - Recognise sound so that we can understand how sound travels. Outcome: Children explore different instruments and tools to understand how sound travels.
(6)	Area of learning: Shape Mental Maths: Angles Knowledge and skills: **WALT: recognise and describe 2-D shapes** **WALT: recognise features of triangles** **WALT: compare triangles** **WALT: recognise features of quadrilaterals** **WALT: construct quadrilaterals (measure angles and lengths)**	Purpose: Persuade Text Type: Letter to a company (Mazak) or potential buyer convincing them to sell your invention/contraption Text: The Iron Man Knowledge and Skills • Examine and identify the features of a persuasive letter • Use different types of sentences (statements, command, question and exclamation) • Understand the use the pattern of 3 • Use boastful language	D2.2b As Design Technicians WALT: use electrical components to include light in our prototype - Outcome: Children use knowledge from science to complete a circuit Links to outcome- children will recycles materials to create own net-zero product which will be presented to the judges. S.2.1t As Scientists WALT: identify the effect of volume on the strength of vibrations produced Outcome: Conduct a science experiment to investigate low and high sound. (Lesson 1) S2.1r/s As Scientists WALT - identify the cause (objects) and effect on the pitch produced.
(10)	Area of learning: Symmetry Mental Maths: Shape Knowledge and skills: **WALT: identify lines of symmetry** **WALT: recognise horizontal and vertical lines of symmetry** **WALT: recognise line of symmetry (any orientation)** **WALT: reflect along a line of symmetry** **WALT: solve problems involving symmetry**	Purpose: Persuade Text Type: Letter to a company (Mazak) or potential buyer convincing them to sell your invention/contraption Text: The Iron Man Knowledge and Skills • Use repetition to persuade • Compose and orally rehearse a persuasive letter (oracy) • Mini Write Plan	Evaluate- Children will evaluate own product using PMI and practice their pitch using elements of oracy. A3.5a As Artist WALT: Adapt work in response to personal and group critique. Outcome: Evaluate our invention so that we can improve and develop it further. Links to outcome- Children will evaluate and finalise product and practise speech to deliver to the judge S.2.1t As Scientists WALT: identify the effect of volume on the strength of vibrations produced

			Outcome: Conduct a science experiment to investigate low and high sound.
(11)	Area of learning: Coordinates Mental Maths: Symmetry Knowledge and skills: WALT: describe positions on a coordinates grid WALT: plot points on coordinates grid WALT: translate shapes on a coordinates grid WALT: describe movement on a coordinates grid WALT: solve problems involving coordinates	Purpose: Persuade Text Type: Letter to a company (Mazak) or potential buyer convincing them to sell your invention/contraption Text: The Iron Man Knowledge and Skills • Draft a persuasive letter • Edit and up-level a persuasive letter • Write a persuasive letter • Rehearsal of persuasive speech	Dragon's Den- Children will showcase own inventions along with a pitch to a panel of judges. TASC wheel - implement, evaluate, communicate and learn from. S2.1r/s As Scientists WALT - identify the cause (objects) and effect on the pitch produced.Outcome: Conduct a science experiment to investigate low and high pitches. Link to outcome- children will use knowledge of sound to create background music for their advert promoting net-zero product. PC2.2 As Citizens WALT: Explain how good values and behaviours can contribute towards being a positive person. Outcome: Circle time/ games to show how we can be positive individuals
(12)	Assessment week	Assessment Week	Compass points- Children will learn about compass points and then navigate around a grid. G2.4b As Geographers WALT- use a compass so that we can plot grid references and keys *(plot inventions on a 4 figure grid)* Outcome: Children will use practice identifying cities using compass points and use the ordnance survey to navigate through the school and UK. PSHE B2.4 As Citizens WALT: Describe the importance of expressing emotions Outcome: Circle time/ games to express and deal with emotions.

			PSHE C2.3: As Citizens WALT: Discuss the idea of personal; strengths and what this means. Outcome: Children write a letter to introduce themselves to their new teacher highlighting their strengths.
08.07.24 (13)	Assessment week	Assessment week	S2.1r/s As Scientists WALT – Energy comes in different forms and can be neither created nor destroyed, only changed from one thing to another (relate to Y3 study of Forces and Y4 Study of Electricity) A3.4a As Artists WALT: Plan and make sculptures using a range of resources Outcome: Introduce children to Michel Reader and identify the different materials she uses in her artwork. From this, children to plan their own artwork and then begin making their sculptures. Once completed, children to evaluate their artwork.
(14)			Science: retrieval and unit review (Sound)