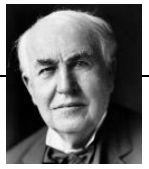
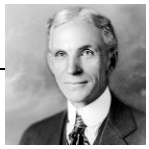
The Grand Prix- Year 6 (Key Knowledge, Skills and Concepts Organiser)



Children to develop an understanding of famous inventors/designers and their impact.

Term:		No. of Weeks	No. of Afternoons
Autumn	1	3	6
WoW Moment:		**Parental Enrichment:**	
Car Racing! DVD			
Cross-curricular Reading/Texts: (Include opportunities to read and access reading content domains within lesson)			

Design and Technology Key People: (Ensure opportunities for children to write/apply sentence level work)			
Thomas Edison	Thomas Alva Edison was an American inventor and businessman, who has been described as America's greatest inventor. He developed many devices in fields such as electric power generation, mass communication, sound recording, and motion pictures	**Karl Benz**	Karl Friedrich Benz was a German engine designer and automobile engineer. His Benz Patent Motorcar from 1885 is considered the first practical automobile. He received a patent for the motorcar on 29 January 1886.
Nikola Tesla	Nikola Tesla was a Serbian-American inventor, electrical engineer, mechanical engineer, and futurist who is best known for his contributions to the design of the modern alternating current electricity supply system	**Margaret A Wilcox**	Margaret A. Wilcox, was an American engineer, and one of the first women mechanical engineers. She is notable for inventing the first automobile heater and the first dishwasher machine.
Henry Ford	Henry Ford was an American captain of industry and a business magnate, the founder of the Ford Motor Company, and the sponsor of the development of the assembly line technique of mass production	**Mary Anderson**	Mary Elizabeth Anderson was an American real estate developer, rancher, viticulturist and inventor of the windshield wiper blade. On November 10, 1903 Anderson was granted her first patent for an automatic car window cleaning device controlled from inside the car, called the windshield wiper

Research Stage: Historical Concepts (Cause and Effect / Significance)	
How have cars had an impact on the world?	People/Economy/Employment/Travel & Relocation/Death & Injury/Laws / Environmental Impact
How has electricity/circuits impacted on the world?	Employment/Communication/Computing/Housing e.g. Heating/TV/Radio/Cars/Toys/Internet
What was life like before cars/electricity?	Consider all of the above and how life would be prior to the invention of electricity.

Design Stage: See D&T Project Booklet

Product Analysis: Analyse a range of existing products and state aspects of the design that the child likes and wants to improve – see D&T template.

Design Criteria: Research and answer key design criteria questions. Children create a success criteria for their design in which they will use to assess themselves once completing project.

Generate Ideas and Final Idea: Children to create/draw a selection of design ideas. Children to agree on final design and draw it on isometric paper.

Planning Stage: Making – List the tools/equipment you will use and why you will use them. List the skills/techniques to be used and the purpose of them *e.g. measuring to support accurate cutting of wood.*

Finished Product: Insert image of pupil/group final product to evidence outcome of making stage.

Make Stage:

Children to apply joining, cutting, measuring, shaping and finishing skills.
During the 'Make' stage teachers to guide children to reflect on their techniques and skills. To annotate on drawings/plans stating changes/adaptations they have made throughout. Children to assess each other's products throughout this stage and offer feedback. Children will:

- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

Evaluate Stage:

What are the most successful parts of your product? Why?	What part of the product would you change? Why?
Does the product meet its purpose? How?	What design and technology skills have you developed?
Self-assess product against design/success criteria.	

Key Words: (Key vocabulary to be added to unit topic page and ticked by child to assess understanding)

Key Words	Definition	Key Words	Definition
Stiffen	Support or strengthen (a garment or fabric), typically by adding tape or an adhesive layer.	**Switch**	Device for making and breaking the connection in an electric circuit.
Joint	Point at which parts of an artificial structure are joined.	**Buzzer**	Electrical device that makes a buzzing noise and is used for signalling.
Fix	Fasten (something) securely in a particular place or position.	**Strengthen**	Make or become stronger.
Communication	Imparting or exchanging of information by speaking and writing.	**Linkages**	Action of linking or the state of being linked.
Development	Specified state of growth or advancement.	**Levers**	Rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end when pressure is applied to the other.
Economy	State of a country or region in terms of the production and consumption of goods and services and the supply of money.	**Criteria**	Principle or standard by which something may be judged or decided.
Circuits	System of electrical conductors and components forming an electrical circuit.	**Sketch**	Rough or unfinished drawing or painting, often made to assist in making a more finished picture.
Mechanism	System of parts working together in a machine; a piece of machinery.	**Reinforce**	Strengthen or support (an object or substance), especially with additional material.
Function	Activity that is natural to or the purpose of a person or thing.	**Audience**	particular group at which a product such as a film or advertisement is aimed

Development of Skills: See further planning

Science	History	British Values / SMSC
Circuits – Include electrical products in model and consider how they can increase speed/power/voltage cells in circuit.	Historical Concepts: Significance / Similarities and differences	**Social**: Changes cars/inventions made to society. **Liberty**: Female Inventors – Margaret Wilcox etc.

Sequence of Learning: (Please state brief description of sequence of lessons)

1	Key People/Inventors/Designers/Impact of Cars/Electricity	**2**	Key People / Inventors / Designers / Impact of Cars/Electricity	**3**	Design Stage
4	Design Stage	**5**	Make Stage	**6**	Make Stage
7	Evaluation Stage	**8**		**9**	