



Children understand the properties of different objects.

Term:		No. of Weeks	No. of Afternoons
Autumn	1	4	7
WoW Moment:	Parental Enrichment:		
Dress Up Day – Superhero!			
Cross-curricular Reading/Texts: (Include opportunities to read and access reading content domains within lesson)			
Everyday Materials – Amazing Science / Materials – Project Science / Materials – Go Science			

SCIENCE Knowledge: (Ensure opportunities for children to write/apply sentence level work)

Everyday Materials: Children develop clear understanding that objects are things. A chair is an object. Materials are the stuff that objects are made from. Children learn about familiar objects such as a dress, chair, car, cup, window, book and understand that they are made of materials such as plastic, ceramic, rubber, wood, paper, glass and metal etc. Children will also develop understanding that objects can be made up of more than one material e.g. a chair is made from plastic and metal. Children will group and sort objects relating to material they consist of.

Physical Properties: Children will develop a clear understanding of the properties of different materials. Children understand why certain materials are used for specific objects e.g. metal is not used to make shoes because they would be uncomfortable to wear because metal is hard and inflexible. Children can describe materials as having different properties such as hard/soft, stretchy/stiff/flexible/inflexible, shiny/dull, waterproof/not waterproof/absorbent, transparent/opaque.

Waterproof Materials: Different materials have different properties, which make them useful for different functions. For example, glass is used in windows because it is transparent, we can see through it. Water cannot penetrate waterproof materials. We would expect foil and plastic bags to be waterproof, as this is what makes them useful for wrapping food, keeping it dry and protecting from smells. Raincoats often have a plastic coating because plastic is waterproof. We would not expect a tea towel to be waterproof as tea towels are absorbent which makes them great for drying dishes. Rubber and wax are examples of natural waterproof coatings that are used to make materials waterproof. Leaves often have a waxy coating to protect the leaf and help it retain water. Children understand why we need waterproof objects/materials and where they are used e.g. slate used in building houses to keep us dry from the rain.

DESIGN & TECHNOLOGY Project: Design a Superhero Badge – (USE D&T PROCESS BOOKLET – EVIDENCE IN THEMATIC BOOKS)

Product Analysis/Design Criteria	Generate Idea / My Final Idea	Making (Planning Stage)	Evaluation/Assessment
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. Create a success criteria for their design.	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 <i>e.g. measuring to support accurate cutting of wood.</i>	What are the most successful parts of your product? Why? Does the product meet its purpose? How? Self-assess product against design/success criteria. What part of the product would you change? Why? What skills have you developed?

Physics & Chemistry SCIENCE Experiment: Fair test: Changing Materials – (USE SCIENCE INVESTIGATION BOOKLET – EVIDENCE IN THEMATIC BOOKS)

Knowledge: Children develop an understanding that objects are used for specific reasons. Waterproof objects are used to protect things from getting wet.	Question: Which materials are waterproof? What are the best materials to build a house out of?	Prediction: Children to use knowledge gained to make an informed prediction.	Method: Decide on method to experiment and investigate including equipment. Decide on Dependent Variable (Measure)
Independent Variable (Same): Amount of water / environment / timings	Control Variable (Change): Materials/objects	Results: Evidence results.	Conclusion: Summarise/compare.

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

Key Words	Key Words	Definition
Object	Material thing that can be seen and touched.	Properties An attribute, quality, or characteristic of something.
Material	The matter from which a thing is or can be made.	Hard Solid, firm, and rigid; not easily broken, bent, or pierced.
Plastic	A synthetic material that can be moulded into shape while soft, and then set into a rigid or slightly elastic form.	Soft Easy to mould, cut, compress, or fold; not hard or firm to the touch.
Metal	Solid material which is typically hard with good electrical and thermal conductivity (e.g. iron, gold, silver, and aluminium, and alloys such as steel).	Flexible Capable of bending easily without breaking.
Wood	The hard fibrous material that forms the main substance of the trunk or branches of a tree or shrub, used for fuel or timber.	Inflexible Not able to be bent; stiff.
Glass	Hard, brittle substance, typically transparent or translucent, made by fusing sand with soda and lime and cooling rapidly.	Shiny Reflecting light, typically because very clean or polished.
Rubber	A material that is soft and stretchy.	Dull Lacking brightness, vividness, or sheen.
Ceramic	Made of clay and permanently hardened by heat.	Waterproof Impervious to water.
Natural	Existing in or derived from nature; not made or caused by humankind.	Absorbent Able to soak up liquid easily.
Man-made	Made or caused by human beings.	Function Practical use or purpose in design.

Development of Skills: See further planning

Art & Design	Design Technology	Science
Use of chalks/colours. Experiment with tones in line with A Warhol work.	Design, make and evaluate a superhero badge. Joining fabrics / running stitch	Fair Testing: Waterproof/Absorbent materials
Historical Concept	Maths	English
Significance: How has waterproofing materials helped change the world?	Estimating and Measuring	Sentence structure / capital letters and full stops
		British Values / SMSC / Christian Values
		Cultural: Discuss how different countries use different materials for constructions/cutlery/clothing to meet the needs of their culture and environment. Moral: Discuss the impact of plastic on the world.

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

1	Knowledge Development	2	Knowledge Development	3	Science Experiment
4	Science Experiment	5	D&T Project inc. write up	6	D&T Project inc. write up
7	D&T Project inc. write up	8		9	

