SW9 Partnership SCIENCE Medium Term Plan: Year Group: 1 Term: Teacher:

| TOPIC | NATIONAL CURRICULUM | KEY VOCABULARY | POSSIBLE TRIP |
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| **USES OF EVERYDAY MATERIALS** | Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. | **TIER 2** (Academic): Compare, identify, select, property, suitable, unsuitable, record, test, predict, outcome.<br><br>**TIER 3** (Topic Specific): Wood, metal, plastic, glass, brick, rock, paper, cardboard, fabric, opaque, transparent, translucent, reflective, non-reflective, flexible, rigid. | **Young V&A** (Bethnal Green): Interactive galleries designed to help pupils distinguish between objects and their underlying materials (wood, plastic, metal, fabric, glass) and evaluate physical properties like flexibility and transparency.<br>**Science Museum** (South Kensington): Interactive exhibits where children conduct simple comparative tests on material properties (hard, soft, rough, smooth, bendy, stiff) and evaluate material suitability for real-world tasks. |
| **PRIOR LEARNING** | **Y1:**<br>Distinguishing between an object and its material, identifying basic materials (wood, plastic, glass, metal, water, rock), and describing simple physical properties (hard/soft, waterproof/absorbent). | | |

| | WEEK 1 | WEEK 2 | WEEK 3 | WEEK 4 | WEEK 5 | WEEK 6 |
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| **ENQUIRY QUESTION** | What materials are around us and what are their properties? | Which fabric is best for making stage curtains? | Which material makes the most effective mop for Cinderella? | Which fabric would make the best superhero costume for Elastigirl? | Which material is best for a playtime hat? | Which material can we use to build a model aeroplane? |
| **LEARNING OBJECTIVES** | To identify and classify a range of everyday materials. | To test materials for opacity and light transparency. | To test materials for absorbency and durability. | To test fabrics for flexibility and strength. | To test materials for waterproofness. | To select and justify suitable materials for a specific design task. |
| **ACTIVITY**<br><br>**WORKING SCIENTIFICALLY SKILLS** | **CLASSIFYING:**<br>Sort material samples (wood, metal, plastic, glass, rock, brick, cardboard) using properties (rigid, reflective, opaque). | **COMPARATIVE TESTING:**<br>Shine light through fabric/paper samples. Sort into opaque, transparent, translucent. | **COMPARATIVE TESTING:**<br>Dip equal-sized strips of paper, sponge, cotton, and plastic into liquid to see which absorbs water best. | **COMPARATIVE TESTING:**<br>Stretch and bend different fabrics to evaluate flexibility and durability for movement. | **COMPARATIVE TESTING:**<br>Drip water onto plastic, paper, wool, and foil to test waterproof protection. | **CLASSIFYING & EVALUATING:**<br>Select light, rigid materials (cardboard, thin plastic, foil) to design a model plane. |

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| **ASSESSMENT** | Correctly group samples by physical properties. | Identify opaque materials suitable for blocking light. | State which material absorbs the most water and why. | Rank fabrics by flexibility and strength. | Identify waterproof materials suitable for wet weather. | Justify material choices based on testing data. |
| **END POINT ASSESSMENT** | Pupils can identify and name wood, metal, plastic, glass, brick, rock, paper, and cardboard. They can explain why a material's specific properties (e.g., transparent, rigid, reflective, waterproof) make it suitable or unsuitable for a specific purpose. | | | | | |
| **HIGHER ORDER QUESTIONS** | Why do we use glass for windows but brick for walls? | Why would transparent curtains be useless in a bedroom? | Why wouldn't a plastic bag make a good mop? | Why does Elastigirl need flexible material rather than rigid metal? | What would happen if a raincoat absorbed water instead of repelling it? | Why isn't real rock used to build real aeroplanes? |
| **FURTHER OPTIONAL QUESTIONS/BIG QUESTIONS FOR DISPLAY** | Why aren't all clothes made from paper?<br>Could we build a skyscraper out of glass and wood?<br>Which material makes the safest playground equipment? | | | | | |
| **INCLUSION & ADAPTATION** | Tactile material cards with dual-choice visual properties (e.g., Hard/Soft). | Torch test with pre-cut fabric swatches and clear Light/Dark visual mats. | Pipette testing with visual absorbency rating scale (1-3 drops). | Stretch testing using visual color-coded resistance bands. | Water tray testing with simple Dry/Wet icon cards. | Pre-cut material kits with visual picture guides. |
| **GREATER DEPTH** | Multi-property Venn diagram classification (e.g., Rigid AND Reflective). | Measure light transmission through materials using a digital lux meter. | Measure volume of water absorbed in milliliters using a cylinder. | Calculate load weight required to tear or over-stretch fabrics. | Design a multi-layered hat combining insulation and waterproofness. | Evaluate weight vs rigidity ratios when selecting aeroplane materials. |