KS1.CA.T2	Area of study: Materials Unit aims / outcome: • distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties. • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Geographical concepts to organise knowledge:
Chemistry- is the study of the makeup of all things and how they behave.
Working Scientifically- disciplinary knowledge required to think and work as a scientist.

Key strands of learning:

Hierarchical Strands: (see progression) States of Matter (Build year on year)	Cumulative Strands: Materials Suitability (key features throughout NC)

Learning in Reception:	Tier 2	Tier 3
To know some important processes and changes in the natural world around them, including the seasons and changes in their personal environments. Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate.	**New** Materials Objects Wood Metal Plastic Glass Brick Rock Paper Cardboard Hard Soft Shiny Dull Rough Smooth **Review –** Bending Squashing Twisting	**New** properties suitability waterproof absorbent opaque transparent

	stretching	

NC objective:	Vocabulary and crucial knowledge:
• distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties.	<u>Context of study:</u> During this unit the children will understand what an object is what a material is. They will learn the different properties of materials and how this makes them suitable for different uses and why. Children will revisit materials when thinking about States of Matter and what solids and liquids particularly are made from (LKS2.CA.T2(A)). Materials are looked at further within States of Matter Unit when observing how some materials change state based on whether they are heated or cooled (LKS2.CA.T2(A)). Knowledge of identifying, sorting and classifying is developed further in (LKS2.CB.T1) when children look comparing and grouping different kinds of rocks based on their properties. Knowledge of materials that are developed in this unit will later inform studies within Rocks and States of Matter units in LKS2. <u>Crucial Knowledge:</u> <u>Materials</u> To know that an object is a thing that can be seen or touched. To know that a material is what an object is made of. To understand that wood, plastic, glass, metal, water and rock are different types of materials. To understand that different materials can have different properties, for example plastic can be smooth whereas rock can be rough. To compare and understand that different materials can be grouped together based on their properties, for example both metal and plastic are waterproof but wood is not. <u>Suitability</u> To know that suitability means being fit or right for a use. To know that some materials are more suitable than others for specific uses. To know that bending, squashing, twisting and stretching are ways to change a material. To understand why certain materials will change shape depending on their properties. To understand wood is hard so good for building furniture and structures. To understand that plastic is a good material for toys because it is hard wearing so children do not break it as easily.

• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	To understand that some objects can be made from multiple materials depending on the use- spoons, wooden (cooking heat) plastic (less likely to break, metal (hard wearing, doesn't bend). To understand glass is good for windows as it is transparent. <u>Working Scientifically:</u> <u>Identify, sort and classify</u> To sort and classify objects and materials based on their properties, for example hard/soft, shiny/dull, rough/smooth, waterproof/not waterproof, absorbent/not absorbent, opaque/transparent and justify why. How will I be a scientist? • Ask questions: about the materials being sorted. • Observe: sort materials into groups based on what they are made out of or material properties. <u>Fair Test</u> To work scientifically by performing simple tests to explore questions, (for example what is the best material for an umbrella or for curtains) How will I be a scientist? • Set up: test the materials for an investigation and then group the materials based on the findings. <u>Identify, sort and classify</u> To sort and classify objects and materials depending on if they can be changed by squashing, bending, twisting and stretching. How will I be a scientist? • Observe: how the different materials change through squashing, bending, twisting and stretching and then group them and classify their properties. • Record: the findings of which materials change. • Report: the findings explaining why that material would be chosen because of how it changes. <u>Fair Test</u> To work scientifically by performing simple tests to explore the suitability of a variety of everyday materials for particular uses. • Ask questions: ask about which materials would be suitable for the specific question and select sensible materials to test. • Set up: my enquiry to test which materials would be suitable for the job. • Record: record data in a simple chart or graph. • Report: explain what they have found out and use findings to think about other materials and the suitability for different objects. <u>Key scientists of study:</u> Pupils to study the work of John Dunlop and John MacAdam