Subject: Science Year: KS1 year B Uses of Everyday Materials

NC/PoS:

- 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.

Prior Learning (what pupils already know and can do)
Know the difference between an object and a material. Can name a variety of common materials. Know materials have specific properties to them. Know materials are either natural or manmade

End Goals (what pupils MUST know and remember)
To know that materials are picked for a specific purpose because of their properties
To know glass is made by melting sand and other minerals together at very high temperatures. It is normally transparent and can be made into different shapes. Thick glass can be strong, but thin glass breaks easily.
To know different fabrics have different properties. They can be stretchy (a pair of tights), insulating (a woollen coat) or absorbent (a towel)
To know pans made from metal are strong, hard and shiny materials that can be hammered into different shapes without breaking. They are good conductors of heat and electricity.
To know plastics are materials made from chemicals. They are strong and waterproof, can be made into any shape by applying heat, are good insulators and don't conduct heat or electricity.
To know furniture made from wood comes from trees. It is strong, flexible and long-lasting and an insulator of heat and electricity.
To know fabrics are used to make clothes as they are flexible, warm and do not wear out easily.
To know the same object can be made using different materials e.g. spoons can be made from wood, metal, plastic
To know some shapes of objects can be changed by squashing, bending, twisting or stretching

Key Vocabulary: uses, everyday materials, particular use, purpose, suitability, useful, properties, stretchy, insulating, absorbent, conductors, squash, bend, twist, stretch, deform, change

Session 1: review prior learning
Children revisit different materials including natural and manufactured (manmade) and their properties
Suggested activities: look at career scientists and scientists who have helped develop understanding in this field.

Session 2: Recap: Name two scientists linked to materials. Name manmade and manufactured materials and their properties

Children learn to identify different uses for materials
Metal can be used for coins, cans, keys, cars, jewellery, table legs
Wood can be used for matches, floors, telegraph poles, furniture
Glass can be used for windows, vases, to drink out of, spectacles, mirrors
Plastic can be used for child safety seats, toys, clingfilm, lunchboxes
Rock can be used for building, roads, cement
Brick can be used for houses, walls, pavements
Cardboard can be used for packaging, store things in, cereal boxes, kitchen roll tubes
Paper can be used for books, paper towels, tissues, wallpaper, newspapers, magazines

Suggested activities: Vocabulary: uses, everyday materials, particular use
Session 3: Recap: Name a material and what it can be used for Children through observation further develop identifying different uses for materials in their local environment Suggested activities: Walk around the local environment looking at materials used answering the question – why was that material used for that purpose? Vocabulary: purpose
Session 4: Recap: why are spoons sometimes made of plastic, wood, or metal? Why are varied materials used to make the same object Children identify the suitability of a material When people make useful objects, such as tables and windows, they choose the best material for the job. They choose the right material based on its properties. For example, glass is an excellent material for a window pane because it has the properties of being transparent, waterproof, hard, and it does not rot away. Wood is an excellent material for a window frame because it is strong, rigid (does not bend) and waterproof. Suggested activities: Look at pictures of objects. Identify the materials that the objects are made from. Some objects are made from more than one material. List the properties of the materials that make them useful in this situation. E.g. car, raincoat Vocabulary: suitability, useful, properties
Session 5: Recap: how are materials chosen to make an object? Children learn to identify suitable materials for different situations. Glass is made by melting sand and other minerals together at very high temperatures. It is normally transparent and can be made into different shapes. Thick glass can be strong, but thin glass breaks easily. Different fabrics have different properties. They can be stretchy (a pair of tights), insulating (a woollen coat) or absorbent (a towel) Pans made from metal are strong, hard and shiny materials that can be hammered into different shapes without breaking. They are good conductors of heat and electricity. Plastics are materials made from chemicals. They are strong and waterproof, can be made into any shape by applying heat, are good insulators and don't conduct heat or electricity. Furniture made from wood comes from trees. It is strong, flexible and long-lasting and an insulator of heat and electricity. Fabrics are used to make clothes as they are flexible, warm and do not wear out easily. Suggested activities: Children think of different objects e.g. curtains, tables, shoes, towel, umbrella. Think about the properties needed and suitable material or materials. Vocabulary: stretchy, insulating, absorbent, conductors

Session 6: Recap: tell me about fabrics, furniture Children explore how shapes of objects can be changed We can change the shape of objects in lots of different ways. We can squash them, bend them, twist them and stretch them. This is called deforming the object. Suggested activities: Can we change the shape of different objects? Up to 8 objects from around the classroom, such as a lump of Plasticine, a coin, a paper clip, a ruler, a tennis ball, a lump of Blu-Tak, a marble, a pencil and a paper towel. Vocabulary: squash, bend, twist, stretch, deform, change
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Scientists who have helped develop understanding in this field: John Dunlop https://www.youtube.com/watch?v=T_EZ3QuYYXU John McAdam https://www.youtube.com/watch?v=0j2gERdrOH4