Year 2 Science Knowledge Organiser: (Everyday Materials & Their Uses)

Subject Specific Skills

- I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Key Vocabulary

Absorbent: Able to take in energy or soak up a liquid or a gas.
Conductor: A material that allows energy (heat or electricity) to pass through it easily.
Insulator: A material that does not allow electricity, heat or sound to pass through it easily.
Flexible: Able to bend and return back to an original shape.
Permeable: Capable of allowing fluids or gasses to pass through. Examples of permeable materials are soil and sponges.

Key Individual:

Prior Learning

- 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.

Key Knowledge:

- We can group materials according to various properties:
  - **Texture** – is it rough or smooth, hard or soft?
  - **Flexibility** – can it bend or is it stiff?
  - **Water permeability** – does it allow water to pass through it?
  - **Density and buoyancy** – does it sink or float in water? Does it feel heavy or light?
  - Is the material **transparent, translucent or opaque?**
  - Is the material **magnetic?**
  - Does it **conduct or insulate** heat and electricity? Does it feel cold to the touch?
- Children should identify and discuss the uses of different everyday materials so that they become familiar with how some materials have multiple uses. For example, metals can be used in coins, cans, cars and table legs; wood can be used for matches, floors, shelves and telegraph poles.

Key Knowledge:

- The children should also consider how different materials can be used for the same task. For example, spoons can be made from plastic, wood or metal – but they are not usually made from glass or string.
- Some of the general properties of the different groups of materials are described below. There will always be exceptions to these, which can provide interesting discussion points:

Metal: Metals are shiny, strong and (usually) hard. They are good conductors of heat and electricity.
Ceramic: Ceramics are hard and strong but inflexible and brittle. They are good insulators of heat and electricity.
Glass: Glass is transparent. It is hard, but inflexible and brittle. It is a good insulator of heat and electricity.
Plastics: Plastics can be manufactured to have many different properties. Some can be transparent whilst others can be translucent or opaque. Some are flexible while others can be quite stiff. They are good insulators of heat and electricity.
Fibres: Fibres are flexible, but very strong. They are good insulators of heat and electricity. Optical fibres transmit light very efficiently.

- Objects can be changed by the effect of forces – they bend, squash, twist and stretch. A force can be simply defined as a push, a pull or a combination of both, like a twist. We can't see the force itself, but we can see its effect on an object.