

## Properties and Changes of Materials:

Key Question/What will I learn by the end?

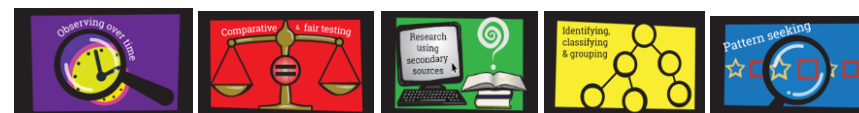
Different materials are used for particular jobs based on their **properties**: electrical conductivity, flexibility, hardness, insulators, magnetism, solubility, thermal conductivity, transparency.

**Reversible** changes, such as mixing and dissolving solids and liquids together, can be reversed. However, **irreversible** changes cannot and often result with the creation of a new product.

Biology/Chemistry/Physics

### Lesson sequence

- \* To be able to compare and group together every day materials.
- \* To know particular uses of everyday materials.
- \* To know about reversible changes
- \* To know about irreversible changes
- \* To know that some irreversible changes create new products.



Enquiry Types

### Sticky learning

#### New Knowledge

- \* To know the particular uses of everyday materials, including metals, wood and plastic
- \* to be able to compare and group together everyday materials on the basis of their properties.
- \* To know about reversible changes, including, evaporating, filtering, sieving, melting and dissolving
- \* To know about changes that are difficult to reverse.
- \* I know that some changes result in the formation of new materials, and that this kind of change is not usually reversible
- \* To know how chemists create new materials and how these have an impact on our lives.

#### Skills

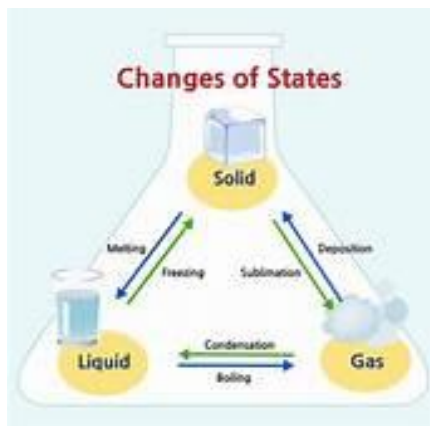
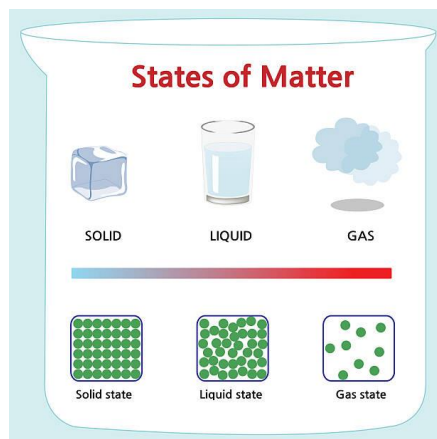
- I can use test results to make further predictions or set up other tests.
- I can research information from more than one source to find the answer to scientific questions
- I can report and present my findings in an appropriate way.
- I can draw a valid conclusion and evaluate my test results or research
- I understand scientific evidence can be used to support or refute ideas or arguments.
- I can explain and justify my reasoning using scientific vocabulary and concepts

### Concept Links/Prior Knowledge

Making connections to previous topics and what they have already learnt

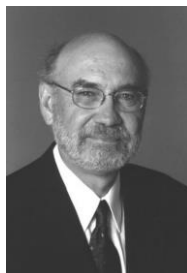
Rec-Everyday materials.  
Yr1 - Everyday materials.  
Yr2 - Uses of everyday materials.  
Yr4 - States of matter.

### Visual representations



### More detailed knowledge and information

#### Significant people/places



#### Spencer Silver:

The chemist whose development of a re-usable adhesive led to the co-invention of the Post-It Note in 1974



#### Ruth Benerito

Saved the cotton industry with her discovery of a method for creating wrinkle-resistant cotton.

### Vocabulary revision (vocabulary I have been taught before)

- **Transparent** - see through, clear
- **Waterproof** - can hold water
- **Absorbent** - soaks up liquids
- **Flexible** - can be bent
- **Magnetic** - attracted to magnets
- **Conductors** - allows heat or electricity to pass through it
- **Insulators** - does not allow heat to pass through it

### New vocabulary I will learn

- **polymers** - made up of chains of molecules joined together in long strings, which can begin to break down over time.
- **Oxidation** - Is a chemical reaction that happens when a metal meets oxygen in the air or water.
- **Corrosion** - is the gradual destruction of materials (usually metals) by chemical and/or electrochemical reaction with their environment.