Materials- Year 5- Kapow units- Materials: Properties and changes and Materials: Mixtures and separation

Previous learning

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.

Key Vocabulary for Year 5

Hardness	
Solubility	
Transparency	
Conductivity	
Magnetic	
Filter	
Evaporation	
Dissolving	
Mixing	

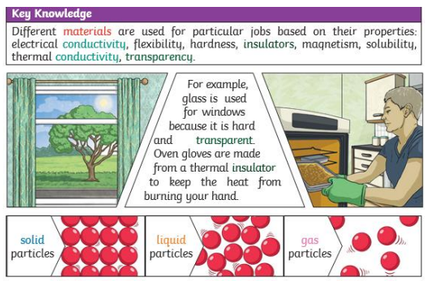
Previous vocabulary

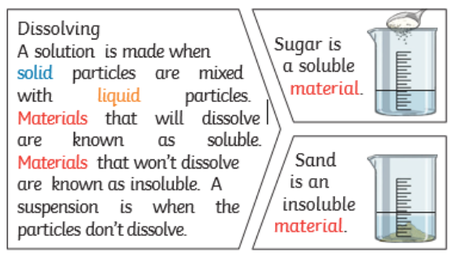
Hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, twisting, waterproof, absorbent, opaque, transparent, brick, fabric, squashing, bending, foil.

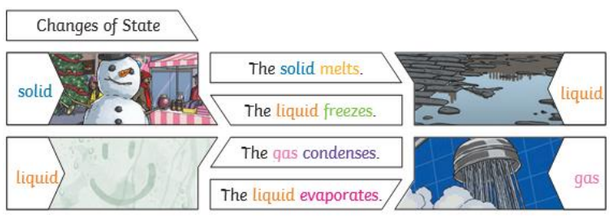
Useful links

https://www.stem.org.uk/resources/community/collection/12742/year-5-properties-materials

https://www.hamilton-trust.org.uk/science/year-5-science/changes-materials-changing-materials-education-pack/







Key scientists you could look at…

John Dunlop

Scientific skills

Working scientifically	Questioning and enquiry	Observing and measuring	Investigating	Recording	Grouping and classifying
Use practical scientific methods, processes and skills, covered in a variety of ways throughout the year	Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables when necessary.	Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. Begin to identify patterns that might be found in the natural environment. Begin to make own decisions about what observations, measurements, and equipment to use. Begin to interpret data. Begin to make accurate and precise measurements.	Begin to test results to make predictions to set up further comparative and fair tests. Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Begin to suggest improvements to the method and give reasons.	Begin to record data and results of increasing complexity using scientific diagrams and tables, classification keys, tables and bar and line graphs. Begin to report and present findings from enquiries. Begin to decide how to record data from a choice of familiar approaches. Begin to choose how best to present data	Begin to us and develop keys and other information to record, identify, classify and describe living things and materials.

Experiment and activity ideas

Make your own recycled paper	How can we separate these mixtures investigation	Salt investigation- evaporation, filtering and solutions	How can we clean our dirty water?	Growing crystals

Knowledge- objectives

Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity, (electrical and thermal) and response to magnets
Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.

Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metal, wood and plastic
Demonstrate that dissolving, mixing and changes of state are reversible changes
Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Resources in school

Variety of every day materials, feely bags, filter paper, funnels, magnets, petri dishes, sieves, electricity resources