



Prior Learning	
<p>This 'Properties and Changes of Materials' unit will teach your class about different materials, their uses and their properties, as well as dissolving, separating mixtures and irreversible changes. The children will sort and classify objects according to their properties. They will explore the properties of materials to find the most suitable material for different purposes. The children will work scientifically and collaboratively to investigate the best thermal insulator to make a lunch box, making predictions and forming conclusions. Furthermore, they will have chance to find the best electrical conductor, in the context of making floodlights brighter. They will have the opportunity to work in a hands-on way to explore dissolving, identifying the different variables in their own investigations. They will find out about different ways to separate mixtures of materials, using filtering, sieving and evaporating. Finally, they will learn about irreversible changes, and participate in two exciting investigations to create new materials, including casein plastic and carbon dioxide.</p>	
Key vocabulary for this unit	
Materials, solids, liquids, gases, melting, freezing, evaporating, condensing	
Learning Sequence	
1. Properties of materials	To compare and group together everyday materials on the basis of their properties, including their hardness, transparency and response to magnets by sorting and classifying materials according to their properties.
2. Keeping cool	To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic by investigating thermal conductors and insulators. To compare and group together everyday materials on the basis of their thermal conductivity by investigating thermal conductors and insulators.
3. Brighter bulbs	Brighter Bulbs To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic by investigating the best electrical conductors. To compare and group together everyday materials on the basis of their electrical conductivity by investigating the best electrical conductors

4. Disappearing or dissolving	To know that some materials will dissolve in liquid to form a solution by investigating dissolving. To compare and group together everyday materials on the basis of their solubility by investigating dissolving.
5. Separating mixtures	Separating Mixtures To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating by separating different mixtures. To demonstrate that dissolving, mixing and changes of state are reversible changes by separating different mixtures. To describe how to recover a substance from a solution by separating different mixtures
6. Irreversible changes	To 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 by identifying and observing irreversible chemical changes
Assessment milestones	
Working scientifically: <ul style="list-style-type: none"> • Identify irreversible changes. • Predict what will happen in an investigation. • Make observations. 	Scientific knowledge: <ul style="list-style-type: none"> • Identify materials. • Describe materials' properties. • Identify thermal and electrical conductors and insulators. • Identify materials that are soluble or insoluble in water. • Follow instructions to separate mixtures. •