

Dog Kennel Hill Primary - Science

Topic: States of Matter

Year: 4

Strand: Physics

What should I already know?

- Distinguish between an object and the material from which it is made.
- Identify and name a variety of everyday materials, including wood, plastic, glass, 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 physical properties.
- 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.
- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
- Describe in simple terms how fossils are formed when things that have lived are trapped within rock.
- Recognise that soils are made from rocks and organic matter.

Vocabulary

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| Matter | Another name for 'material': what an object is made of; not just fabric. |
| Temperature | A measurement of how hot or cold something is. |
| Thermometer | A device or instrument used to measure temperature. |
| Melting | When a solid turns into a liquid. |
| Freezing | When a liquid turns into a solid. |
| Melting point | The temperature at which a solid melts. |
| Freezing point | The same temperature as a material's melting point. This is the temperature at which a liquid turns into a solid. |
| Evaporation | When a liquid turns into a gas, below its boiling point. |
| Boiling point | The temperature at which a liquid turns into a gas. |
| Condensing | The process when a gas turns into a liquid. |
| Water cycle | How water moves around to create clouds, rain and the weather. |

What will I know by the end of the unit?

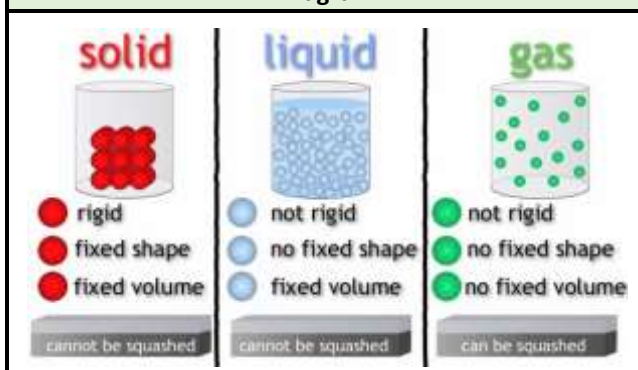
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| What are the properties which I can compare and group? | A material may exist in three states: solid, liquid, and gas. |
| What are the different states of matter? | A sample of a material in the solid state, can be held by hands and can form into a pile. When a material is in the liquid state, it cannot be held by hands and it forms a pool. In the gas state, a material escapes from an unsealed container. It spreads out to fill all the space available, and takes the shape of the entire container. |
| How can you change a material's state? | Materials change state when they are heated or cooled by freezing, melting and boiling. You can also measure and research the temperature at which this happens in degrees Celsius (°C). Some state change processes can be reversed. |
| What happens when heating and cooling materials? | Some materials change state when they are heated or cooled. They can evaporate or create condensation. The rate of evaporation can differ with temperature. |

Significant People

Joseph Priestley (a British scientist) discovered oxygen in 1774. He also answered questions such as why and how things burn.



Diagram



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Question 1

Question 2

Question 3

Question 4

Question 5