Year 3 & 4

Science

Westminster COMMUNITY PRIMARY SCHOOL
Inspire Believe Achieve

All children – regardless of gender, starting point or background – will have the opportunity to engage with a high-quality science education. They will be equipped with the knowledge, skills and vocabulary to understand how science can be used to explain what is occurring, predict how things will behave and analyse caused. We intend to inspire a sense of enjoyment and curiosity about science.

States of Matter including the Water Cycle

Spring 1

Igniting Prior Knowledge:

Year 2 (Uses of Everyday Materials)

- All objects are made of one or more materials that are chosen specifically because they have suitable properties for the task.
- When choosing what to make an object from, the properties needed are compared with the properties of the possible materials, identified through simple tests, and classifying activities.
- A material can be suitable for different purposes and an object can be made of different materials.
- Objects made of some materials can be changed in shape by bending, stretching, squashing, and twisting.
- Some materials are man-made (manufactured)
- Transparent materials do let light through (you can see through them).
- Translucent objects only let some light through. You cannot see clearly through a translucent object.
- Opaque materials do not let light through (you cannot see through them).

Key Vocabulary:

- States of matter,
- Solid, liquid, gas
- Mass,
- Change of state,
- Melting,
- Freezing,
- Melting point,
- Boiling point,
- Pressure,

New Knowledge:

- Matter usually exists in one of three states; solid, liquid or gas.
- Solids are made of molecules tightly packed in uniform rows; they retain their shape and have a fixed volume.
- Liquids are made of molecules that have more energy so move around more freely; they have a fixed volume but take the shape of the container holding them. A liquid can be poured and keeps a level, horizontal surface.
- Gases are made of molecules that have the most energy so move around freely and fill the space they occupy; it has no fixed shape or volume.
- All matter has mass.
- Matter can change state when energy is added to it (heating, cooling or pressure).
- Melting is a state change from solid to liquid.
- Freezing is a state change from liquid to solid. The freezing point of water is 0oC.
- Boiling is a change of state from liquid to gas that happens when a liquid is heated to a specific temperature and bubbles of the gas can be seen in the liquid. Water boils when it is heated to 100oC.
- Evaporation is the same state change as boiling (liquid to gas), but it happens slowly at lower temperatures and only at the surface of the liquid.
- Evaporation happens more quickly if the temperature is higher, the liquid is spread out or it is windy.
- Condensation is the change back from a gas to a liquid caused by cooling.

Water at the surface of seas, rivers etc. evaporates into water vapour (a gas). This rises, cools and condenses back into a liquid forming clouds. When too much water has condensed, the water droplets in the cloud get too heavy and fall back down as rain, snow, sleet etc. and drain back into rivers etc. This is known as precipitation. This is the water cycle.