7G Particle Model	Knowledge, Skills and Understanding
Higher	Appreciate that some substances are difficult to categorise Use the particle model to explain other observations about matter. Explain how evidence from Brownian motion is used to support the particle theory. Carry out a calculation to work out the speed of diffusion Explain how barometers work
Intermediate	Describe the properties of the three states of matter in terms of shape, volume and compressibility Explain what a landfill site is and some of the problems they cause. Describe how the movement and spacing of the particles is different in solids, liquids and gases Use the particle theory to explain the properties of solids, liquids and gases. Explain how Brownian motion occurs, using particle theory Convert metres to nanometres and vice versa. Explain how diffusion occurs in terms of movement of particles Explain why the speed of diffusion in gases is faster than in liquids Recognise examples of diffusion causing problems Explain the ways in which gas pressure can be increased (more particles introduced into a container, container is made smaller, gas is heated) Describe what a vacuum is Explain some of the effects of air pressure (e.g. using a straw, collapsing can).
Foundation	Classify materials as solids, liquids and gases Record observations and describe simple properties of the three states of matter State what is meant by volume Appreciate that the properties of waste materials determine their disposal. State that all materials are made from particles Describe, draw and recognise the arrangement of particles in solids, liquids and gases Describe Brownian motion State where Brownian motion can be observed. Describe diffusion as the movement of one substance through another without any external mixing Recall some everyday examples of diffusion Make a prediction about diffusion Describe how moving gas particles cause pressure when they hit the walls of their container Recognise some effects of pressure (e.g. blowing up a balloon) Explain that more particles in a container will cause a greater pressure