

Secondary Science Scheme of Work Performa:

Module title / topic Particles (Topic 7) Duration of scheme 9 lessons

Year Group 7_O Set (if applicable) 2

Title	Learning Objectives	Learning Outcomes	NC ref.	Suggested Activities	Resources	Health & Safety	Links to Other Areas – Numeracy, Literacy, ICT and SMCS	Assessment	H/work
What are solids, liquids and gases?	<p>Pupils will learn...</p> <p>To investigate the properties of solids liquids and gases.</p>	<p>Pupils will be able to learn...</p> <p>To classify what a solid, liquid and a gas is.</p> <p>The properties of solids, liquids and gases.</p>	<p>Ks3, Sc3 Exploring Science book Pages 78-79 (Properties of solids, liquids and gases) NC 4</p>	<p>As a starter, teacher has a variety of objects on desk and show to pupils to identify if it is a solid, liquid or gas?</p> <p>Pupils will be paying attention to all the instructions to carry out an investigative practical activity about solids, liquids and gases properties.</p> <p>As a plenary activity pupils will have a worksheet and they need to match the correct term</p>	<p>Computer Power point Lab material Books White board</p>	<p>Lesson totally safe for pupils but see risk assessment attached to lesson plan.</p>	<p>Literacy, developing investigative skills and kinaesthetic learning styles.</p>	<p>Individual assessment during the starter activity by explaining why is a solid, liquid and a gas.</p> <p>Assessment by checking pupils developing some investigative skills.</p> <p>Assessment by checking pupils answers during plenary and asking individually to explain the answers.</p>	<p>No hwk for this lesson.</p>

				(solids, liquids and gases) with the correct diagram.					
The Particle Theory	<p>Pupils will learn...</p> <p>To understand what the particle theory is and to be able to describe it.</p>	<p>Pupils will be able to learn...</p> <p>that models can be used to explain phenomena which cannot be observed.</p> <p>that solids, liquids and gases are made up of tiny particles.</p> <p>that the differences between solids, liquids and gases can be explained in terms of the proximity and motion of their particles.</p>	<p>Ks3, Sc3 Exploring Science book Pages 80-81(How theories are developed) NC 4-5.</p>	<p>As starter activity pupils will recap last lesson with an interactive Q+A.</p> <p>Pupils will dramatise the particle theory by thinking about on a model using them to explain it.</p> <p>After the activity pupils will be learning by listening teacher explanation.</p> <p>As a plenary activity pupils will have a worksheet to consolidate the lesson.</p>	<p>Computer White board A3 sheets Felt tips Books worksheet</p>	<p>Lesson totally safe for pupils.</p>	<p>Literacy and kinaesthetic learning styles.</p>	<p>Starter activity to recap last lesson will be used to assess pupil's knowledge.</p> <p>Q+A during the lesson.</p> <p>Plenary activity to check and evaluate pupils learning.</p>	<p>No homework for this lesson.</p>

Changes of state.	<p>Pupils will learn...</p> <p>to discuss the movement of particles when energy is applied to them.</p>	<p>Pupils will be able to learn...</p> <p>to describe how particle theory can explain some phenomena.</p> <p>explain observations in terms of particles.</p> <p>explain their observations using the particle theory.</p>	<p>Ks3, Sc3 Exploring Science book Pages 78-79(States matter) NC 4.</p>	<p>As a starter activity pupils will have a interactive quiz that leads to the next activity.</p> <p>Pupils will be able to understand some phenomena by watching a video about it and try to write what they think about what is melting, condensation and evaporation.</p> <p>Plenary activity will be a matching (terms with the correct example) game.</p>	<p>Computer White board Books Power point Cards Worksheet Video speakers</p>	<p>Lesson totally safe for pupils</p>	<p>Literacy, kinaesthetic learning styles, and developing science thinking skills.</p>	<p>Assessment by class Q+A.</p> <p>Evaluating pupils thinking skills by checking some of the answers of the main activity.</p> <p>Plenary activity will be assessed for learning.</p>	<p>Changing state worksheet To consolidate the last three lessons.</p>
Hard Lessons	<p>Pupils will learn...</p> <p>to be able to calculate the volume and density of irregular objects.</p>	<p>Pupils will be able to learn...</p> <p>how to relate particle forces and hardness.</p> <p>How to calculate density given</p>	<p>Ks3, Sc3 Exploring Science book Pages 78-79(States matter) NC 4.</p>	<p>As starter pupils will have a quiz to understand concepts like volume and density of some materials.</p>	<p>White board Computer Power point</p>	<p>Lesson totally safe for pupils</p>	<p>Literacy, numeracy and kinaesthetic learning styles.</p>	<p>Plenary activity will be the main item of assessment.</p>	<p>No homework for this lesson.</p>

		the equation. That heaviness "for its size" is called density.		Going over a brief explanation about how to calculate and measure materials volume and density. Teacher will make a demonstration. Matching terms and descriptions as a plenary.	Calculator balance				
Expansion	Pupils will learn... To understand what happens to a solid when it is heated.	Pupils will be able. to learn... That most materials expand when heated. That expansion produces very large forces, particularly in solids. Heating causes expansion.	Ks3, Sc3 Exploring Science book Page 89 (Expansion and Contraction) NC 7.	As a starter pupils will have a particles bingo game. Pupils will hopefully carry an experiment about expansion and they need to give some feedback about by writing some important information and giving a short presentation to rest of the class. As a plenary, pupils will have a worksheet to fill in with the correct answers.	White board Worksheet Books computer	Lesson safe but check risk assessment attached to lesson plan.	Literacy, developing investigative skills and kinaesthetic learning styles.	Pupils communicative skills will be assessed as well plenary activity worksheet when going over the answers.	No homework for this lesson.

Always moving and mixing	<p>Pupils will learn...</p> <p>To understand the process of diffusion and Brownian motion.</p>	<p>Pupils will be able to learn...</p> <p>What diffusion means in particle movement terms.</p> <p>To explain diffusion in gases and liquids.</p> <p>To describe the "smoke cell" experiment and explain what they see.</p>	<p>Ks3 Exploring Science book Pages 84-85 (Diffusion and the particle theory) NC 5.</p>	<p>Starter activity will be watching a video about diffusion to introduce the topic. Pupils need to answer what is diffusion to understand next activity.</p> <p>During the main activity teacher will show demo of two gases in a gas jar. Pupils will predict what will happen.</p> <p>As a plenary pupils need to choose which diagrams correspond diffusion process. Going over the answers to check pupils learning.</p>	<p>Computer White board Power point Video worksheet</p>	<p>Lesson totally safe for pupils but see risk assessment attached.</p>	<p>Literacy and developing practical skills.</p>	<p>Assessing pupil's practical skills when they need to give some feedback about their predictions of the experiment.</p> <p>Plenary activities to make sure those pupils that struggle really have learned the topic.</p>	<p>Diffusion worksheet homework</p>

<p>Always moving and mixing (2)</p>	<p>Pupils will learn...</p> <p>To understand what gas pressure is and how it is affected by temperature.</p>	<p>Pupils will be able...</p> <p>To apply a model to a new phenomena to explain behaviour.</p> <p>That gas particles are moving around all the time.</p> <p>That gas pressure is caused by particles hitting the walls of the container.</p>	<p>Ks3 Exploring Science book Pages 86-87 (Gas pressure) NC 7.</p>	<p>As a starter pupils will have an interactive Q+A game to recap last lessons contents.</p> <p>The main activity will be a practical demonstration (air bump and a can) showing and understanding what is gas pressure.</p> <p>Worksheet to complete.</p> <p>Plenary activity will be a revision puzzle with Q+A assessment for learning.</p>	<p>Computer White board Practical demo material (see risk assessment attached) Worksheet puzzle</p>	<p>Lesson totally safe for pupils but see risk assessment attached.</p>	<p>Literacy knowledge as well developing practical skills by predicting, observing and explaining.</p>	<p>Assessing pupils' behaviour and pupils developing new practical skills, by predicting and also explaining the experiment.</p> <p>Plenary activity will be a puzzle with Q+A to make sure that pupils have learned the topic.</p>	<p>No homework for this lesson.</p>
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<p>Fizzy drinks go flat!!</p>	<p>Pupils will learn...</p> <p>To plan and evaluate an investigation independently.</p>	<p>Pupils will be able to learn...</p> <p>That a gas is not "weightless".</p> <p>How to plan and evaluate a lesson.</p>	<p>Ks3 Exploring Science book Topic about gas particles NC 4.</p>	<p>As a starter pupils will have a quiz to answer.</p> <p>Main activity will be investigations on a can of a fizzy drink carry it out by pupils.</p> <p>As a plenary pupils will make concept balloons organizing the main ideas of the lesson.</p>	<p>Computer White board Investigative worksheet Practical material (see risk assessment attached to lesson plan) A3 paper Felt tips</p>	<p>Lesson totally safe for pupils but see risk assessment attached.</p>	<p>Numeracy. Literacy, developing investigative skills and kinaesthetic learning styles.</p>	<p>Assessing pupil's practical skills when they need to give some feedback about their predictions of the experiment.</p>	<p>No homework for this lesson.</p>
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