Subject: Science		
KS3 (Part 2)	Teacher: Mr Brooks	Term: 4 (9T3C1)
Key Vocabulary: Chemicals, symbols, hazards, chemical reaction, physical reaction, atoms, safety, heat, smell, fizz, jot, cold, dissolve, melt, hydrogen, oxygen, sodium, water, chlorine, cardon dioxide, acid, alkali, pH, indicator, concentrate, dilute, rates of reaction, concentration, surface area, investigation, prediction, aim, method, results, conclusion, fire triangle, oxygen, fuel, heat, hydrocarbon, distillation, boiling point, energy, combustion, incomplete combustion, green house effect, green house gases	**Alternative Learning Environments** (eg FREE forest school, field, playground, park, woods, English Heritage, shop, swallow aquatics, garden centre, Rochester Musium): Playground, music room, forest school	**Resources:** Power points, IWB, WS, Chemical signs and symbols, acids, alkalis, indicators, vinegar, bicarbonate of soda, water, hand soap, lemonade, coke, baking soda, heart burn tablets, lemons, mouthwash, bleach, water, beaker, candle

Unit Aim: To explore and learn about chemical reactions

Week	Session 1	Session 2	Session 3
1 Chemical Reactions	**Lesson Objective** To know the hazards of chemicals and their symbols **Activities** Pupils learn and understand the hazards. Match the hazard symbols to their names and descriptions	**Lesson Objective** To know what a chemical reaction is **Activities** Pupils earn about safety around chemicals. Describe what happens when a chemical reaction is taking place and the difference between a chemical reaction and a physical reaction	**Lesson Objective** To learn about reactants and products **Activities** Pupils earn the difference between reactants and products a begin to write word equations for chemical reactions
2 Acids And Alkali	**Lesson Objective** To learn the difference between acids and alkalis **Activities** Pupils test different acid and alkali solutions and draw a table of	**Lesson Objective** To investigate different products to see if they are acid or alkali **Activities** Pupils begin to write up an investigation to test the pH levels of different products	**Lesson Objective** To investigate our acids and alkalis and draw conclusions from our results **Activities** Pupils conduct an investigation on acids and alkalis and analyse our results.

	results. Prepare the indicators for the following lessons		
3 Neutralisation	**Lesson Objective** To define neutralisation **Activities** Pupils learn about neutralisation and be able to produce written work based around this knowledge.	**Lesson Objective** To learn about indigestion **Activities** Pupils learn about stomach acid and how this is neutralised with a practical session based around acid neutralised bases and bases neutralised acids.	**Lesson Objective** To discover the difference between acids and alkalis and what they produced when combined **Activities** To understand and write chemical equations when acids and alkalis combine and how we make salt
4 Rates of Reaction	**Lesson Objective** To define the term "rates of reaction" and how it is measured **Activities** Pupils order a list of reactions and begin to write an investigation to test the rates of reaction	**Lesson Objective** To investigate what effects the rates of reactions **Activities** Pupils conduct an investigation to find out what affects the speed at which a canister pops from gas created by a chemical reaction	**Lesson Objective** To conclude the results found from our investigation **Activities** Pupils conclude the investigation from the previous lesson and begin to link: factors, diagram and explanations
5 Fuels	**Lesson Objective** To learn about the fire triangle **Activities** Pupils observe what happens to a flame when oxygen gets taken away. Explain the findings	**Lesson Objective** To learn about hydrocardons **Activities** Pupils research the different hyrocarbons, their structure and boiling points	**Lesson Objective** To learn how fuel is separated to produce energy **Activities** Pupils match the distillation techniques to the different hydrocarbons
6 Pollution	**Lesson Objective** To learn how hydrocarbons create pollution **Activities** Pupils learn about incomplete combustion and discuss the problem with using fuels	**Lesson Objective** To investigate the difference between complete and incomplete combustion **Activities** Pupils plan an investigation to observe the differences between complete and incomplete combustion.	**Lesson Objective** To learn about the green house effect and what we can do to prevent greenhouse gases **Activities** Pupils use diagrams to describe how green house gases affect out planet and what we can do to prevent further damage