

Medium Term Plan 2021/2022 Subject: Science Term: Spring Term One Topic from LTP: Chemical reactions

Lessons per week: 3 Group(s): Fuller and Tomlin

Students will show achievement by being able to describe the difference physical and chemical reaction and know how to identify if a chemical reaction has occurred. They will explore the topic of acids and the big question will look at the environmental impact of pollution on the acidity of water in the surrounding streams and ponds. Some will be able to write chemical formulas and equations. All of the investigation tasks are constructed to encourage independence. The power point presentations and practical work will link to communication. Learning about hazard symbols on chemicals will link to well-being. The use of tools such as Clicker 8, Nearpod, and purple mash will aid differentiation

Trips: Wandle River to collect water samples

Careers: icould videos showing jobs to do with chemicals such as hairdressing

Week	Topic	Learning Intentions	Tasks	Assessed Lis
W1/2	Reactions	<ul style="list-style-type: none"> • To know the difference between a chemical and a physical reaction • To know at least 3 ways that show a chemical reaction has occurred • To be able to write word equations for reactions • 	<ul style="list-style-type: none"> • Investigation to sort chemical and physical reactions • Investigation into rusting • Demonstrations – black snake, smoke bombs etc. • Other reactions to investigate car wash fizzing, making slime, Sodium acetate ice reaction, Elephants toothpaste, Mentos and coke • Best biscuit practical to look at fair test 	<p>I can</p> <ul style="list-style-type: none"> • Communicate the difference between a chemical and a physical reaction • List at least 3 ways that show a chemical reaction has occurred • Write word equations for reactions •

Week	Topic	Learning Intentions	Tasks	Assessed LIs
W3	Reactions of acids	<ul style="list-style-type: none"> • To be able to identify acids and alkalis • To know what the pH scale is • To know the pH of common acids and alkalis • To measure and record pH values • To know the formula for common acid and alkalis • To know how acids react with metals and carbonates • To be able to predict the products for the reactions of metals and carbonates • To be able to write the equations for the reactions of acids with metals and carbonates • To know the tests for hydrogen and carbon dioxide 	<ul style="list-style-type: none"> • Recap of acids and alkalis • pH testing of liquids • Beetroot indicators • Reaction of acids with metals investigation • Reaction of acids with carbonates investigation • Tests for hydrogen and carbon dioxide demonstrations 	<p>I can</p> <ul style="list-style-type: none"> • Identify acids and alkalis • Explain what the pH scale is • List the pH of common acids and alkalis • Measure and record pH values • Write the formula for common acid and alkalis • Describe how acids react with metals and carbonates • Write the equations for the reactions of metals and carbonates • Predict the products for the reactions of metals and carbonates • Write the equations for the reactions of acids with metals and carbonates • Recall the tests for hydrogen and carbon dioxide
W4	Acid reactions Neutralisation	<ul style="list-style-type: none"> • To state the meaning of a range of hazard symbols • To know what a neutralisation reaction is • To know at least two common neutralisation reactions • To be able to state the equation for a neutralisation reaction • To complete an investigation to compare the effectiveness of indigestion remedies 	<ul style="list-style-type: none"> • Hazard symbol poster • Vinegar and baking soda investigations • Antacid investigation • Making bath bombs 	<p>I can</p> <ul style="list-style-type: none"> • State the meaning of a range of hazard symbols • Recall what a neutralisation reaction is • Describe at least two neutralisation reactions • State the equation for a neutralisation reaction • Complete an investigation to compare the effectiveness of indigestion remedies
W5	Waddon Ponds investigation	<ul style="list-style-type: none"> • To know that chemicals from pollution cause rain water to become acidic • To be able to plan an investigation to collect and test water samples 	<ul style="list-style-type: none"> • Poster on acid rain • Trip to collect water samples from the Wandle River and Waddon Ponds 	<p>I can</p> <ul style="list-style-type: none"> • Explain the causes and effects of acid rain • Plan an investigation to collect and test water samples

Week	Topic	Learning Intentions	Tasks	Assessed LIs
		<ul style="list-style-type: none"> • • To know some effects of this • To be able to write a conclusion to a hypothesis based on investigating the pH of river and pond water • To demonstrate safe working when collecting samples 	<ul style="list-style-type: none"> • Investigating pH of the water to see if there is any difference based on position away from the road 	<ul style="list-style-type: none"> • Write a conclusion to a hypothesis based on investigating the pH of river and pond water • Demonstrate I can be safe when working scientifically
W6	Assessment			