Samuel Allsopp
Primary & Nursery School

MEDIUM TERM PLAN

TERM: Autumn 1		YEAR GROUP: Year 5		SUBJECT: Science – Mixtures and separation	
WEEK 1 **DATE: 02.09.24**	**WEEK 2** **DATE: 09.09.24**	**WEEK 3** **DATE: 16.09.24**	**WEEK 4** **DATE: 23.09.24**	**WEEK 5** **DATE: 30.09.24**	**WEEK 6** **DATE:7.10.24**
LO: To describe mixtures. **Success Criteria:** I can define the term mixture. I can name some common examples of mixtures. **Main Event:** Children to chose substances to make a mixture. Children to use devices to research their substances. Children to present their findings. **Support:** Could use the Knowledge organiser to help them answer the questions throughout the lesson; should research soil by typing 'soil' into Kiddle and clicking on the top link (all the answers can be found in the first paragraph). **Challenge:** Should consider whether each of the mixtures could be separated when making their own mixtures; should consider how they would separate each of the mixtures they made and what equipment they could use; could choose an extension activity relating to mixtures from the Resource: Stretch and challenge: Mixtures and separation.	**LO: Knowledge:** To explain the process of sieving. Working scientifically To draw and annotate a diagram to explain a concept. **Success Criteria: Knowledge** I can define the term sieving. I can describe how sieving separates mixtures. I can determine when it is more effective to use sieving or magnetism to separate a mixture. **Working scientifically** I can draw and annotate a diagram to explain how sieving separates a solid-solid mixture. **Main Event:** Children to work in groups of five to separate substances using a sieve. Children to separate substances using a magnet. Take feedback throughout. **Support:** Should use the Activity: How sieving works (support) and the sieving diagram from the Knowledge organiser to help them create an annotated diagram to explain how sieving separates different-sized solids; could use the clues under the tea towel to help them work out how the soil-gold mixture and iron-sand mixture could be separated. **Challenge:** Should identify jobs which might involve sieving, such as farmer/harvester, chef, baker or food scientist; could be challenged to consider how salt and pepper could be separated (add water to dissolve the salt, filter out the pepper and then evaporate the water); could choose an extension activity relating to sieving from	**LO: Knowledge** To explain the process of filtering. **Working scientifically** To identify testable questions and how to answer them. **Success Criteria: Knowledge** I can define the term filtering. I can describe how filtering separates mixtures. I can identify when filtering should be used. **Working scientifically** I can identify and justify which type of enquiry to use to answer my testable question. **Main Event:** Children to explore how muddy water can be cleaned. In pairs, children to complete the activity 'How filtering works' Children to use their water filters and add annotations to their diagrams. **Support:** Could use the sticky notes to reveal the size of the gaps for each material, could use the filtering diagram on the Knowledge organiser to help them draw and label their filtering diagram. **Challenge:** Should collect a teabag and answer the question: How is the teabag a filter for the tea? (The bag has small holes that let water with dissolved tea through but that do not let large, undissolved pieces of tea leaf through); should identify and record a list of other filters used in the home or in everyday life, such as water filters, swimming pool filters, coffee filters and washing machine filters; could choose an	**LO: Knowledge** To describe solutions and how they can be identified. **Working scientifically** To make observations about solutions. **Success Criteria: Knowledge** I can define the terms solution and dissolve. I can name some common examples of solutions. **Working scientifically** I can identify solutions by observing and describing their appearance. **Main Event:** Children to complete the activity *Solutions results table* (one each) Children will create mixtures and identify whether the mixtures they create are solutions or not. In pairs children complete Activity: Solutions spell (one between two). Children to fill in the missing words to create a spell. **Support:** Could use the Activity: Solutions results table: support version to record their observations about solutions; could choose the performance option for the Activity: Solutions spell as this only requires repetition of the spell; could use the different separation methods shown on the Knowledge organiser to help them identify how to separate the mixture in the Wrapping up activity. **Challenge:** Could write their own version of the spell; could have gravel added to their mixture of salt, sugar and sand so they have to include the additional step of sieving; could identify and record a list of solutions found in the home or everyday life, such as any clear drinks or any clear cleaning products; could choose an extension activity relating to dissolving or solutions from the Resource:	**LO: Knowledge** To identify which factors affect the time taken to dissolve. **Working scientifically** To plan a fair test with consideration of variables and measurements. **Success Criteria: Knowledge** I can recall some factors that affect the time taken to dissolve. I can describe the effect of temperature on the time taken to dissolve. **Working scientifically** I can suggest which variables to change, measure and control. I can decide which measurements to take and how long to take them for. **Main Event:** Activity: Planning an investigation (one each) and ask the children to complete the planning section on variables. **Support:** Should answer the multiple-choice questions on the Activity: Factors affecting dissolving instead of writing notes on the Pupil video: Factors affecting dissolving; could use the clues (equipment) under the tea towel to help with identifying the variables when planning their investigation; could be provided with a list of variables to choose from (see slide 4 of the Presentation: Planning an investigation). **Challenge:** Should gather repeat data and measure the temperature of the water using a thermometer; should consider whether their test is fair (the temperature for all three cold, warm	**LO:** To describe the process of evaporation. **Success Criteria:** I can define the term evaporation. I can describe how evaporation separates solutions. I can identify when evaporation should be used. **Main Event:** Create class experiment 'salt flats. Children to answer questions and create predictions. Take photos of the salt flats over the next week and use the photographs at the end of the week to confirm the children's answers and predictions. **Support:** Could be allocated the 'mixtures' section on the Knowledge organiser to revise; could use the question prompts on slide 2 of the Presentation: Revision to write the revision questions. **Challenge:** Should answer the question: What weather conditions will increase the rate of evaporation? (warm weather, dry weather and windy weather); could be allocated the 'solutions' or 'factors affecting dissolving' section on the Knowledge organiser to revise; could choose an extension activity from the Resource: Stretch and challenge: Mixtures and separation.

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	the Resource: Stretch and challenge: Mixtures and separation.	extension activity relating to filtering from the Resource: Stretch and challenge: Mixtures and separation.	Stretch and challenge: Mixtures and separation.	and hot water tests would need to be the same to make the test fair); could choose an extension activity relating to dissolving or solutions from the Resource: Stretch and challenge: Mixtures and separation.	