

Scaffolding Support for the Language of EAL Learners in a Science Lesson on Forces

This lesson, from the science unit on Forces, will support the language of EAL learners by using a range of scaffolding strategies.

1. Reporting back on experimental activities will guide talk through process to presentation

- A clear understanding of the objective, outcome and criteria will allow an overview for self assessment throughout the lesson and in the plenary.
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- Different activities will allow a real purpose for reporting back.
- Vocabulary and concepts will be pre taught to an EAL group, through barrier games, matching activities, and IT, to produce 'experts'. They will then demonstrate and discuss the key vocabulary and concepts.
- There will be collaborative science activities with prompts to guide group work and extend independent thought.
- Role play will create interest and repeat key concepts from a different angle.
- The question sheet will be answered to provide a summative assessment of the understanding of the science concepts.

The reporting back of results; demonstration/explanation of data recording and agreement on conclusions will support both language and content, as it will focus on areas that SATs results has revealed to be a weakness in science teaching in KS2 and KS3.

Glossary/ Crossword/ PowerPoint Presentation

Parachute

Role play: Paper experiment Graph :

<p>1; Pre Teaching Activities A picked group of children will do the activities in the pre teaching pack. They will become 'experts' who will demonstrate and model for the rest of the class.</p> <p>1. One pair fills in the matching science glossary of picture, word and definition. 2. The second pair will follow the instructions for making an animated power point presentation on Gravity and Air resistance using the 'Elephant and the Feather'. animation 3 This pair will do a barrier game; a crossword. Working collaboratively and sitting back to back they will complete the crossword with clues from their partner</p> <p>All pairs may show their activities to each other as preparation for their class presentation</p> <p>They may also work on the interactive websites</p>	<p>1; Pre teaching/ Demonstrating The three pairs will present and explain what is happening in the 'Forces' visuals as 'experts'</p> <p>1. The main focus of group one will be the visuals of gravity, air resistance, and weight</p> <p>2. Group 2 will extend the explanation to what is happening in the picture of the Elephant and Feather explaining this using the PowerPoint presentation.</p> <p>3. Group 3 will be working with group one to present the visuals Their focus visuals will be balanced /unbalanced forces They may also describe the computer websites on forces</p> <p>These pairs will then join groups 2;3&4</p>	<p>2: Reporting back on a homework task Read the letter From Ahmed asking for help to solve a problem. Experiment with three paper parachutes and 4 eggs.(1 egg is a control) to find a solution for Ahmed's problem. When you return to the group explain</p> <p>1. This Experiment was to solve a problem, (show the letter.) 2. What you did? (show the parachute) 3.What happened? Show the eggs and then explain why you think you got these results. Speaking as expert scientists describe what general advice you would give Ahmed based on this experiment Describe further experiments with the parachutes to make the advice more specific and useful. E.g. how many eggs can Ahmed get safely to the ground</p>	<p>3; Peer modelling and role play. Prepare a demonstration of forces with A4 and A3 paper. Adopt and practise the role of the 'Magician of forces'. Provide a role for every one e.g.</p> <p>1. Magician – demonstrates? 2. Compere-introduces? 3. Assistant manages and hands on the props? 4. Scientist who rubbishes magic and explains the science?</p> <p>Sequence of demonstration is</p> <ol style="list-style-type: none"> 1 flat A4 paper sheet shown then 1 A4 sheet added and crumpled. Explain before crumpling that your power will control the outcome, then drop both together Show 1 A3 sheet-explain 2x weight &size compare with crumpled sheet before fall. Repeat magic routine then drop. Enter scientist with science explanation 	<p>4; Obtain a stopwatch. In pairs cut out a spinner and record the time it takes the spinners to fall from the same height. Each pair experiments with a variable.</p> <ol style="list-style-type: none"> with one paperclip x3 with three paperclips x3 with five paperclipsx3 <p>Average your results and share them with the other pairs. Record the results from all three variables on the graph.</p> <ol style="list-style-type: none"> .Show the spinner falling. Explain why you did the test 3x Mark the A3 graph showing and explaining the averaged results and then explain what the whole pattern of results means in terms of what it shows about gravity weight and air resistance Give <u>your</u> explanation of the results
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