

New material: website exemplar

5–14 Environmental Studies Topic Planner



Topic: Magnetism Class P3

- Attainment outcome: energy and forces
- Strand: forces and their effects
- Big idea being developed: 'An understanding of forces and how they can explain familiar phenomena and practices'

Time: two weeks (two hours per week) Level B

Learning outcomes	Teaching sequence	Skills development
<p>Knowledge and understanding</p> <ul style="list-style-type: none"> • Learn that magnets can push or pull magnetic materials. • Be able to use the terms 'attraction' and 'repulsion' to describe the push/pull effect of magnets. • Classify a range of objects and materials as magnetic and non-magnetic. • Give some examples of the everyday use of magnets. 	<p>First lesson</p> <ul style="list-style-type: none"> • Allow free exploration with magnets to find out what happens when they are put together. • Have a teacher-led discussion of the effect of magnets on each other. • Build up a word bank to describe the effect of magnets (key words – push/pull) leading to the use of more scientific language of attraction/repulsion. • Arrange activity to classify materials into magnetic and non-magnetic (worksheet 1). • Hold a short investigation to find out if magnets can attract through other materials (worksheet 2). <p>Homework</p> <p>Find out where magnets are used around the house or elsewhere. Bring in examples/pictures from magazines.</p> <p>Second lesson</p> <ul style="list-style-type: none"> • Investigate to find out which magnet, out of a range of magnets, is the strongest. • Have a teacher-led discussion of the homework exercise to identify how magnets are used in everyday life. 	<p>Investigation: Which magnet is the strongest?</p> <p>Some starting points for exploration:</p> <ul style="list-style-type: none"> • Preparing for tasks <ul style="list-style-type: none"> – How could we compare the strength of the different magnets? – What do you think would happen? – In discussion with pupils about how they might carry out the investigation provide examples of unfair/fair ways of carrying it out and encourage them to offer suggestions as to why they may be unfair/fair • Carrying out tasks <ul style="list-style-type: none"> – How many paper clips, in a chain, does each magnet lift? – How close does a paper clip have to be to the magnet before it is lifted? – Record the findings in a simple table indicating type of magnet and number of paper clips lifted or distance between paper clip and magnet. • Reviewing and reporting on tasks <ul style="list-style-type: none"> – Give a brief description (spoken) of what they did and found out. – Use the class results to arrange the magnets in order, from weakest to strongest.
<p>Assessment</p> <p>Among the techniques that may be used are:</p> <ul style="list-style-type: none"> • teacher observation during teacher–pupil discussion • teacher-designed tasks using pictures or diagrams of ideas about magnets and magnetism (<i>added to portfolio</i>). 		
<p>Resources</p> <p>A range of magnets (bar, horseshoe, wand, ceramic, circular), a range of materials to be tested (paper, Plasticine, drawing pins, types of stone, plastic materials, paper clips, pieces of wood, wool, juice cans, nails, screws, steel washers, copper pipe, etc.), paper towels, cloths, plastic sheets (lids of tubs), polystyrene sheet, plastic tubs/trays, tiles.</p>		
<p>Some additional activities</p> <ul style="list-style-type: none"> • Investigate the strength of the different parts of a bar magnet. • How can you lift a paper clip out of a tub of water without getting your fingers wet? • Find out, using a variety of resources, why a compass needle points to north. • Devise and make some games using magnets (e.g. race track, coin sorter). 		