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| <b>Topic: Forces and magnets</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Year 3<br>Age 7-8 | Title: What is the strongest magnet?                                                                                                 |
| <b>Working Scientifically</b><br><b>Plan:</b> Set up simple practical enquiries, comparative and fair tests                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   | <b>Conceptual Knowledge</b><br>Notice that some forces need contact between two objects, but magnetic objects can act at a distance. |
| <b>Assessment Focus</b> <ul style="list-style-type: none"> <li>• Can children decide on an approach to compare magnet strength?</li> <li>• Can children recognise and control variables where necessary?</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                                                                                                                                      |
| <b>Activity</b><br>Provide the children with a collection of magnets and other materials (e.g. card, fabric, tissue, thin wood, aluminium foil, paperclips) to explore. Ask them to find out whether the magnets are all equally strong (see below for differentiated approach).<br>As a class, discuss the different ways of testing the same thing, and talk about the advantages and disadvantages of each approach. Discuss why it is a good idea to try different ways of answering a question (-to get a more reliable answer).<br>Carry out the investigations and ask the children to report their findings verbally.                                                                                                             |                   |                                                                                                                                      |
| <b>Adapting the activity</b><br><b>Support:</b> Ask which magnet is the strongest. Ask, 'How do you know?' and use the response to help the children plan to systematically test each magnet.<br><b>Extension:</b> Challenge children to order the magnets from strongest to weakest. Challenge the children to find several different ways of comparing the strength of magnets and see if these result with the magnets in the same order of strength.                                                                                                                                                                                                                                                                                  |                   |                                                                                                                                      |
| <b>Key Questions</b> <ul style="list-style-type: none"> <li>• How can we find out which magnet is the strongest?</li> <li>• Did the magnets need to be touching to find out?</li> <li>• Can you now put the magnets in order from strongest to weakest?</li> <li>• Can you think of any other ways to test which is the strongest?</li> <li>• Which magnet was the strongest? Did you get the same results with every way you tested it?</li> </ul>                                                                                                                                                                                                                                                                                       |                   |                                                                                                                                      |
| <b>Assessment Indicators</b><br><br><b>Not yet met:</b> With support, can make suggestions about how to find which magnet is the strongest, <i>e.g. see how many paperclips the magnet will pick up.</i><br><br><b>Meeting:</b> Can decide on an approach to answer the question, and what observations/measurements need to be made, <i>e.g. hold each magnet above the paperclips and measure the distance the paperclips jump.</i><br><br><b>Exceeding:</b> Can compare different ways of answering the question and whether they lead to the same sequence of strength of magnets, <i>e.g. The order was different with when you measure the distance the paperclips jump because it is not very easy to know when this happened.</i> |                   |                                                                                                                                      |