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| **Session 3: Sticking Together** | | | | | |
| Science curriculum area: **Everyday materials** | | | **Everyday Materials:**  i. distinguish between an object and the material from which it is made (1EM)  ii. identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock (1EM)  iii. describe the simple physical properties of a variety of everyday materials (1EM)  iv. compare and group together a variety of everyday materials on the basis of their simple physical properties (1EM)  v. identify and compare the suitability of a variety of everyday materials, including wood,  metal, plastic, glass, brick, rock, paper and cardboard for particular uses (2EM) | | |
| Working Scientifically | | | i. asking simple questions and recognising that they can be answered in different ways  ii. observing closely, using simple equipment  iii. identifying and classifying  iv. using their observations and ideas to suggest answers to questions | | |
| Teaching Objectives | | | * Explore a variety of different magnets and objects (both magnetic and non-magnetic). * Create games in the classroom using the magnets, such as a fishing game, magnetic maps (magnet under a piece of paper and a paperclip), moving magnets without touching them, strength test with different magnets. * Consider questions such as: does everything made of metal stick to a magnet? (Yr1). * Discuss the properties of metal objects and usefulness of magnets (Yr2). | | |
| Key Vocabulary: magnetic, non-magnetic, metal, materials, properties | | | | | |
| Resources  Magnets, metal objects attracted to magnets, jars (one for each pair), paper clips, string, and ideas on magnetic games. | | | | Weblinks  <https://www.youtube.com/watch?v=DR9w4koW2EA> - *video about north and south poles, including the Earth as a magnet. Good as information for teachers, but very able may be able to access some of the information.* | |
| Before the session: Have magnets available on the tables as the chn come in, together with magnetic objects.  Whole class: Ask the chn to go to their tables and spend some time exploring the magnets and magnetic objects. Listen to what they say to each other and the questions that are generated by their exploration. Write comments down as you hear them, together with the names of the children who made them, so that you can read them out to everyone later in the session. Then bring the chn together, share the quotations you wrote down during your observations and ask them to discuss with each other what they know about magnets. Ask the chn to get into pairs, each with a magnet, and go on a magnet investigation around the classroom. Say: *What can you find that is magnetic?* Ask them to consider the question: *Does everything made of metal stick to a magnet?* They may want to write down what they find or share with the class, in mini plenaries, as they explore. | | | | | |
| Year 1 Teacher/adult to work with this group.  Show this group the resource containing ideas for magnetic games and ask them to consider a game they would like to make with the magnets - simple fishing game, a magnetic maze or map (magnet under a piece of paper and a paperclip) or a strength test with different magnets (how many paper clips can your magnet hold? Make available to them various craft materials to spark their imagination. | | | | | Year 2 Show this group a jar of water. Drop a paper clip into the jar. Challenge the chn with this question: *How can you get the paper clip out of the jar without spilling the water or getting your hands wet?* Ask the chn to get into pairs and give each pair a magnet and a jar with water with a paper clip already inside it. Give them time in their pairs to have a go at getting the paper clip out. You may want to make string available to the chn in case they decide to tie their magnet onto the string and lower it into the jar. When a pair is successful, ask them to try and keep their solution quiet so they don't spoil the challenge for the others. Invite them to move onto making magnet games. |
| Plenary | Allow time for the chn to have a go at the different magnet games and to share with each other what they have created. Discuss the properties of metal objects and why some metals stick to magnets. Ask the chn to think about the following: *Why do some metals stick to magnets and other metals don't?* Value their ideas and theories. Tell chn that only a few metals are magnetic, such as iron, nickel, cobalt and steel and some lesser-known metals. Gold, aluminium, silver and copper are not magnetic. (Teacher information: magnetic materials are usually not magnetised but can become magnetised, which means that they have the ability to attract other magnetic materials. Even when not magnetised, the material will still be attracted to a magnet. One way of magnetising a material is to put it near a magnet – you can demonstrate this with a steel paperclip)Ask the Yr2s *Why are magnets useful? Can you think of a time when you would need a magnet?* | | | | |
| Outcomes | | Children will:   * Explore a variety of different magnets and objects * Consider questions such as: does everything made of metal stick to a magnet? (Yr1) * Discuss the properties of metal objects and usefulness of magnets (Yr2) | | | |