

## STEAM Recipe

<b>Theme</b>	<b>Magnetism</b>
<b>Target Age Group</b>	10-11 years
<b>Duration of Activity</b>	60 minutes
<b>Resources/Materials Needed (exact details required)</b>	(per person) 2d-cell batteries Bolts Insulated wire Alligator clips Paper clips and pins A3 paper Iron filings Instruction plan (steps + research questions)
<b>STEAM Components</b>	Science, technology, engineering, art, mathematics

<b>WHY</b>	<b>Goals/Objectives/Targets/Aims</b>	-Exploring how magnets work through creation and experimentation. - Discover how magnets work (good or bad). - Create art using magnets.
<b>HOW</b>	<b>Method/Activities (i.e step by step instructions for teacher)</b>	PART 1: intro: 12 min 1. Question: <b>What do we use magnets for?</b> 2. Background information about Christian Oersted (relation between electricity and magnets). 3. Divide into groups and give each group a question to look up: <ul style="list-style-type: none"> <li>• Where are magnets used for in fashion?</li> <li>• Where are magnets used for in factories?</li> <li>• Where do you use a magnet at home?</li> <li>• ....</li> </ul> PART 2: Construction Electromagnet. 15 min 1. Give a demonstration 2. Children make an electromagnet by using the instruction plan.



STRATEGIC PARTNERSHIP

AGENTS OF CHANGE IN EDUCATION

		<p>PART 3: Experimental phase 15 min</p> <table border="1" data-bbox="719 434 1497 595"> <thead> <tr> <th>No. of coils</th> <th>guess</th> <th>result</th> </tr> </thead> <tbody> <tr> <td>10</td> <td></td> <td></td> </tr> <tr> <td>15</td> <td></td> <td></td> </tr> <tr> <td>...</td> <td></td> <td></td> </tr> </tbody> </table> <p>Questions:</p> <ul style="list-style-type: none"> <li>• What will happen when you add more coils?</li> <li>• What happens if you use thicker/thinner wire?</li> <li>• What happens if you wrap the wire twice, will it still work?</li> <li>• ...</li> </ul> <p>PART 4: Magnet painting 8 min</p> <p>Spread iron filings on the A3 sheet and hold the magnet underneath the sheet and see what happens...</p>	No. of coils	guess	result	10			15			...		
No. of coils	guess	result												
10														
15														
...														
<p><b><i>DID IT WORK</i></b></p>	<p><b>Reflection/Evaluation (where applicable)</b></p>	<p>Reflection talk: 5 min</p> <ul style="list-style-type: none"> <li>• How did the hypothesis match up with the results?</li> <li>• Was it easy/hard to make the electromagnet? Explain.</li> <li>• What surprised you? What didn't?</li> </ul> <p>Clean up: 5 min</p>												