**Key Ideas for Investigation 4: Electromagnets**

* A **magnetic field** surrounds a wire through which electric current is flowing.
* The magnetic field produced by a current-carrying wire can cause magnetism in a piece of iron or steel.
* An **electromagnet** is made by sending electric current through an insulated wire wrapped around an iron core.
* The number of winds in an electromagnet coil affects the strength of the magnetism caused in the core.
* The amount of electric current flowing in an electromagnetic circuit affects the strength of the magnetism in the core (**more current = stronger magnetism.)**
* A **telegraph system** is an electromagnet-based technology used for long-distance communication.

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