Maxwell's Equations Rendered into English

Equation	What it means	A commonplace demonstration
$\frac{1}{m}\nabla \times \mathrm{B} = \mathrm{J} + e\frac{\partial \mathrm{E}}{\partial \mathrm{t}}$	The "curliness" ($\nabla\times$) of the magnetic field (B) is caused by the electrical current (J) A changing electric field acts much like a current	A current running through a wire sets up a magnetic field in a circle around the wire.
$\nabla \times \mathrm{E} = -\frac{\partial \mathrm{B}}{\partial \mathrm{t}}$	The "curliness" ($\nabla\times$) of the electrical field (E) is caused by a change in a magnetic field (B)	A moving magnet causes a current to flow in a wire
$\varepsilon\nabla\bullet=\rho$	The "spokiness" ($\nabla\bullet$) of the electrical field (E) is related to the charge density (ρ).	A charge creates an electrical field that radiates in all directions. Like charges attract; opposite charges repel
$\nabla\bullet\mathrm{B} = 0$	The divergence ($\nabla\bullet$) of the magnetic field (B) is always zero.	A magnetic field is a closed loop; if you cut a magnet in half, each half has a north and a south end; there is no such thing as a monopole magnet