Unit 3 Physics – Section 3.7

What happens when a current carrying conductor is placed in a magnetic field?	When a conductor carrying an electric current is placed in a magnetic field, it may experience a force.
What rule allows you to find out which direction a wire will move?	Fleming's Left Hand Motor Rule (we drive motor cars on the left).
How do you hold your fingers in Fleming's Left Hand Rule?	Mutually at right angles
What does your thumb represent in Fleming's Left Hand Rule?	thuMb - Movement
What does your first finger represent in Fleming's Left Hand Rule?	First finger - Field
What does your second finger represent in Fleming's Left Hand Rule?	seCond finger - Current
How must the current carrying wire be placed so that it experiences a maximum force?	It must be perpendicular to the force to get maximum effect - the conductor will not experience a force if it is parallel to the magnetic field. At other angles it is somewhere in between.
How can you increase the size of the force experienced by a wire placed in a magnetic field?	By - increasing the strength of the magnetic field - increasing the size of the current.
How can you reverse the direction of movement of a current carrying wire in a magnetic field?	The direction of the force is reversed if either the direction of the current or the direction of the magnetic field is reversed – so you must switch the battery connections round or turn the magnet round
How does a motor work?	A coil of wire current carrying wire placed between the poles of a fixed magnet rotates because of the motor effect. (You don't have to know how the commutator works).
How can you tell which way the coil will rotate?	Use FLHR on each side of the coil – or determine which pole each face of the coil will be and then remember that opposites attract and like poles repel.
How does a loudspeaker work?	The electrical signal is an alternating current through the coil. That makes the faces of the coil switch between being N and S poles. A fixed magnet causes the coil to vibrate as the coil faces are repelled and attracted in turn. The coil is attached to a cone and that causes manual vibrations – sound!