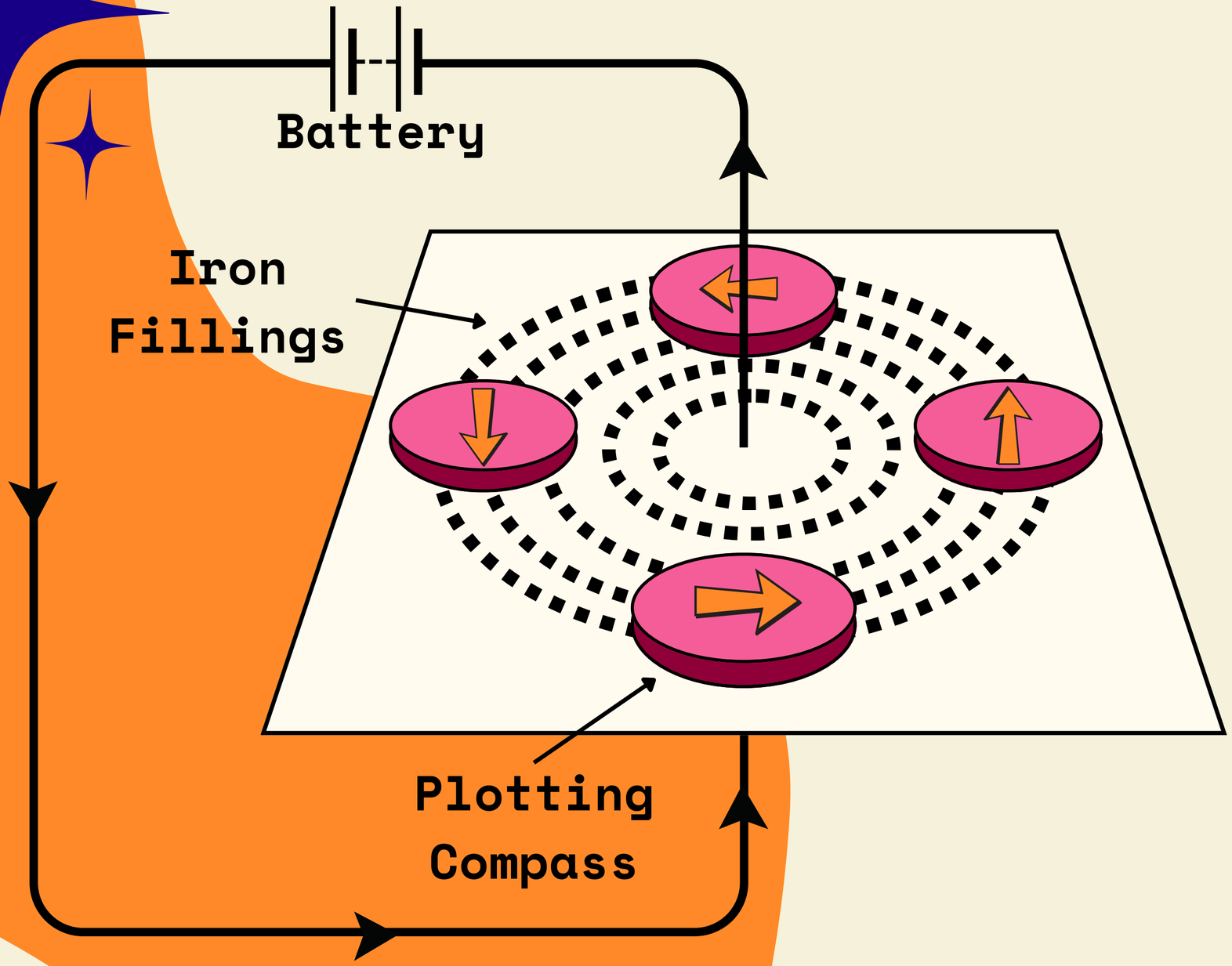
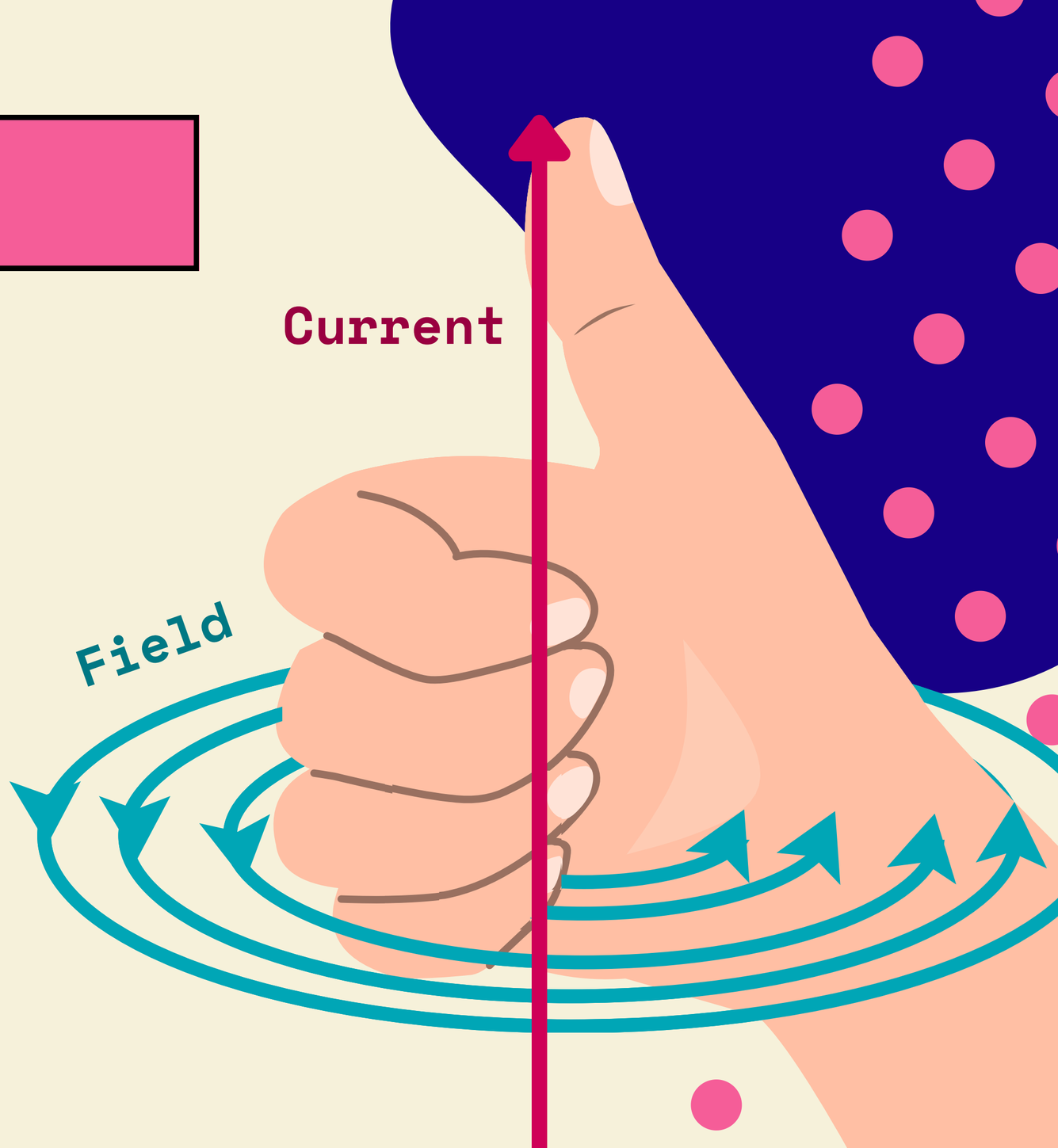


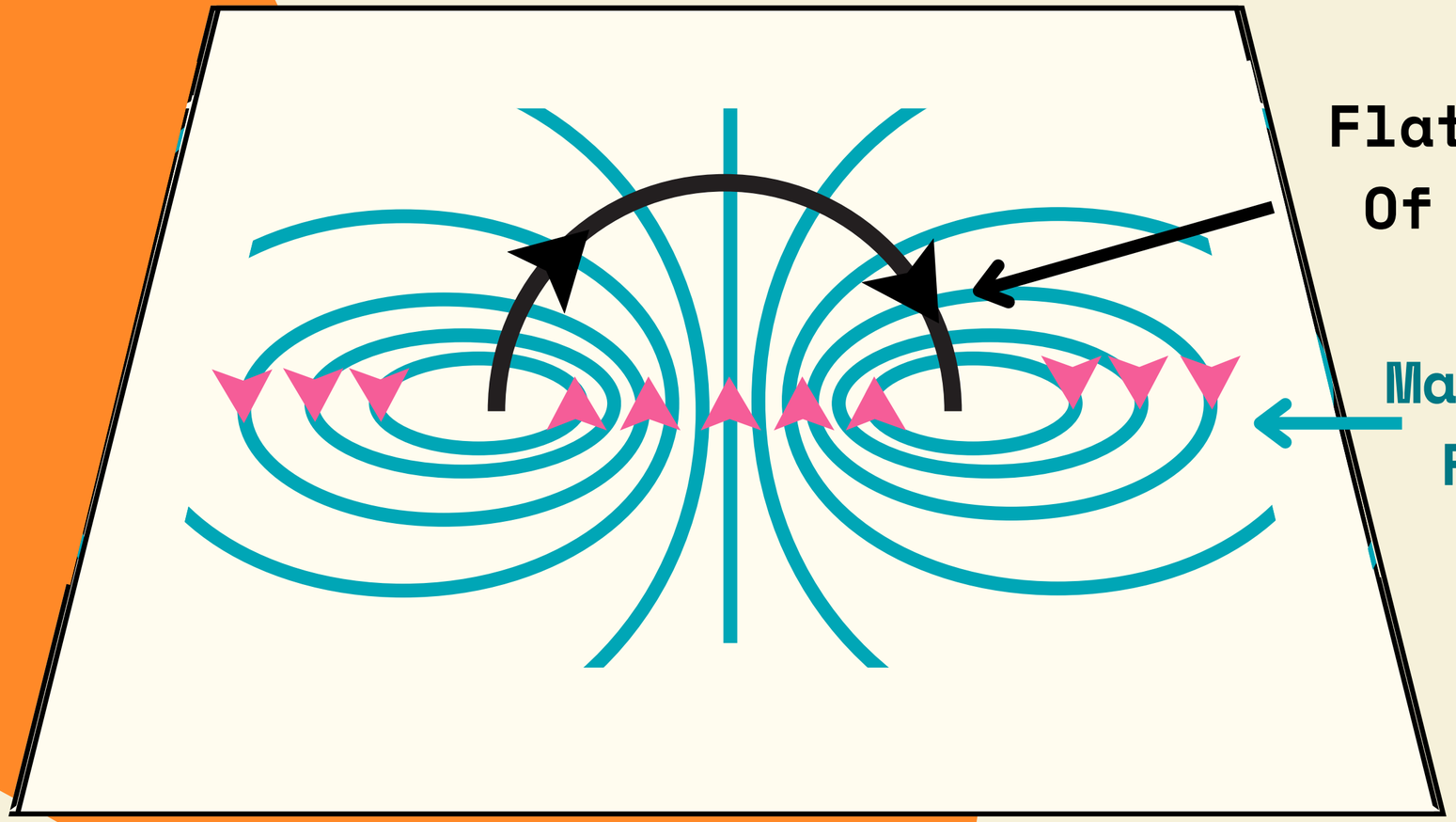

The shape and direction of the magnetic field around the current carrying wire can be seen using iron fillings and plotting compasses. Changing the direction of the current, changes the direction of the magneting field.

# RIGHT-HAND GRIP RULE

The thumb of your right hand in the direction of the current and your fingers will curl in the direction of the magnetic field

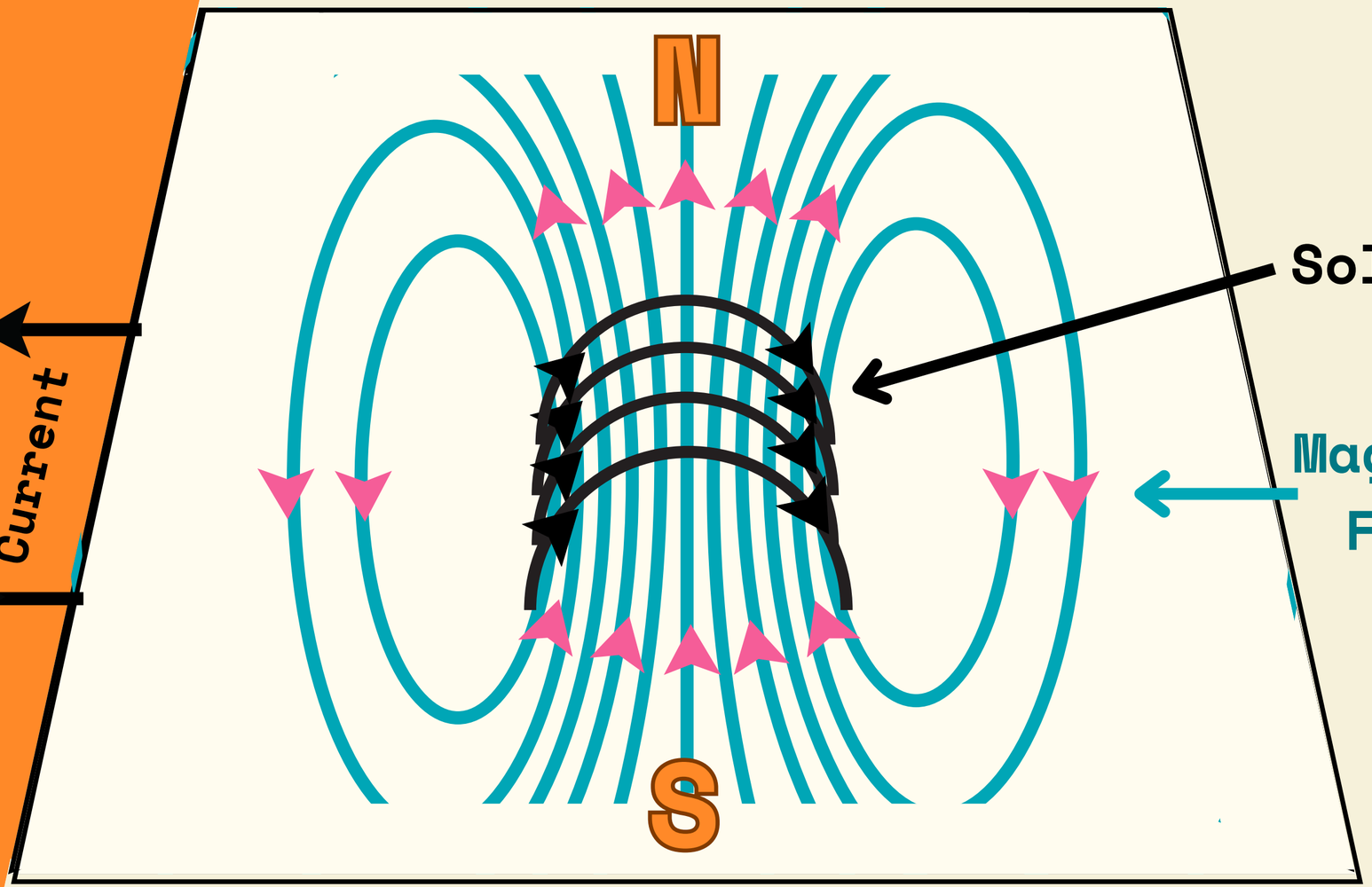


# COIL




If the wire is made into a flat single-turn coil (circular wire), the magnetic field around he wire changes shape

# SOLENOID




Adding more than one turn in a coil turns it into a solenoid.
The shape of the magnetic field around a solenoid is the same as a bar magnet.

# MAGNETIC FIELD

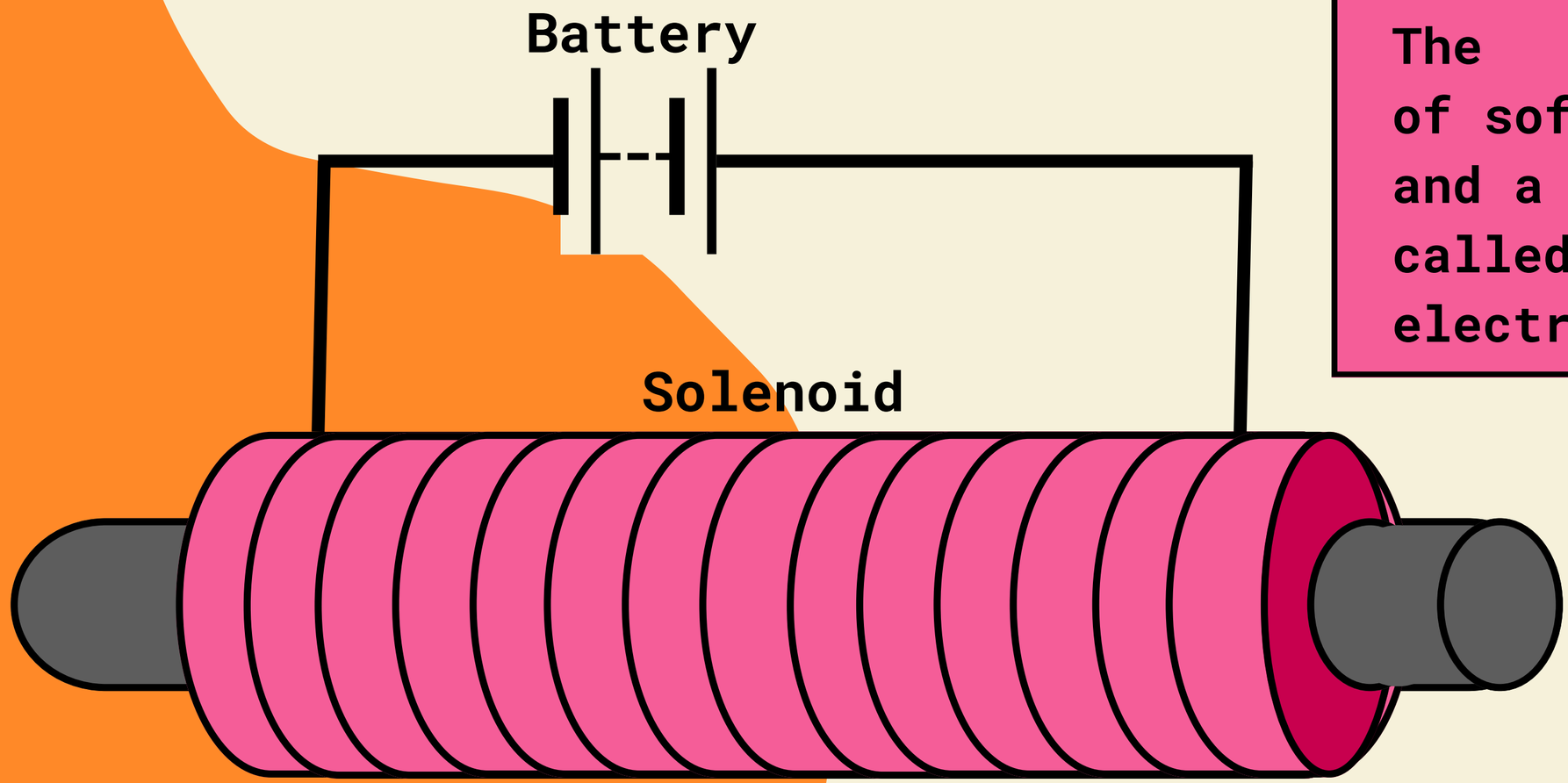
The strength of the magnetic field around a current-carrying wire can be increased by:

1. Increasing the current in the wire
2. Wrapping the wire into a coil or solenoid

The strength of the field around a solenoid can be increased by:

1. Increasing the current in the solenoid
2. Increasing the number of turns on the solenoid
3. Wrapping the solenoid around a magnetically soft core

# ELECTROMAGNET




The combination of soft iron core and a solenoid is called an electromagnet