

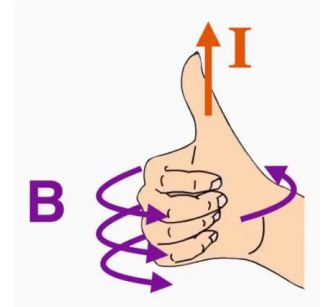
Phys 202- Right Hand Rule

The **right hand rule** is a tool used to help identify the direction of different fields and forces due to different objects.

Helpful Key: \otimes = into the page (away from you) \odot = coming out of the page (towards you)

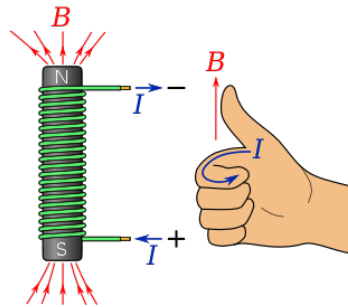
- **Right hand rule #1:**

	Moving Point Charge	Straight Wire
Thumb	Velocity (\mathbf{v})	Current (\mathbf{I})
Fingers curl	Magnetic field ($\vec{\mathbf{B}}$)	Magnetic field ($\vec{\mathbf{B}}$)
Notes:	*For a negative charge, the magnetic field will point in the opposite direction	



- **Right Hand Rule #2:**

	Loop of wire
Thumb	Magnetic field ($\vec{\mathbf{B}}$)
Fingers curl	Current (\mathbf{I})



- **Right Hand Rule #3:**

	Force on a Moving Charge	Force DUE to a wire	Electromagnetic (EM) Waves
Thumb	Force (\mathbf{F})	Current (\mathbf{I})	Direction of propagation
Pointer finger	Velocity (\mathbf{v})	Magnetic field ($\vec{\mathbf{B}}$)	Electric field ($\vec{\mathbf{E}}$)
Middle finger	Magnetic field ($\vec{\mathbf{B}}$)	Force (\mathbf{F})	Magnetic field ($\vec{\mathbf{B}}$)
Notes:	*B field will point in opposite direction for a negative charge		

To create the correct RHR #3 positioning, place hand like this first, then raise your middle finger so that it is parallel to both pointer finger and thumb. Then alter wrist placement so that your fingers are pointing in the direction of the two given vectors to find the direction of the 3rd vector.

