Currents *create* magnetic fields

- Straight wire carrying current I generates a field B at a distance r:

Magnitude

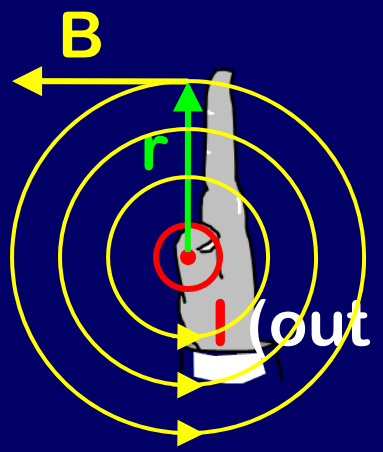
$$B = \frac{\mu_0 I}{2\pi r}$$

$\mu_0 = 4\pi \times 10^{-7} Tm/A$

"Permeability of free space"
(similar to ε_0 for electricity)

- "Right-hand rule 2":
  - Thumb of right hand along **I**
  - Fingers of right hand along **r**
  - Out-of-palm points along **B**

Direction



B field circles wire

Note: there are different versions of RHR