Inductor and Inductance

Inductor (device):

- A wire that is wound into N turns of some shape and area.
- The current I flowing through the wire generates a magnetic field $\vec{B}$ in its vicinity.
- The magnetic field $\vec{B}$, in turn, produces a magnetic flux Φ_B through each turn.

Inductance (device property):

- Definition: $L = \dfrac{N\Phi_B}{I}$
- SI unit: 1H = 1Wb/A (one Henry)