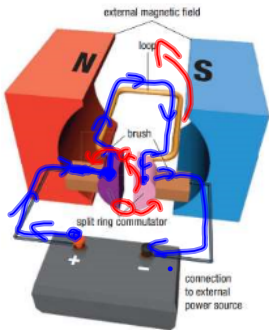
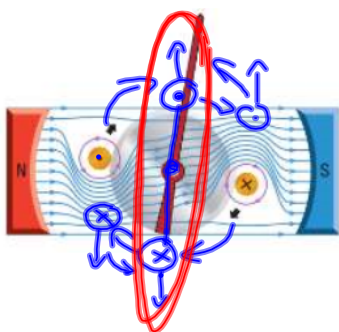


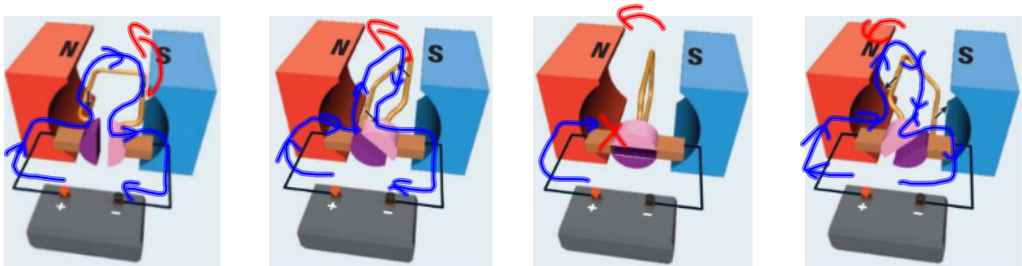
SPH3U 12.6 The Direct Current Motor

1. Split ring commutator

Continuous motion:	it would be cool to build something that could spin continuously with a current (a motor!)
galvanometer	Spring stops it from moving too far. even if it could move more, the forces would stop when the coil is vertical (see below).

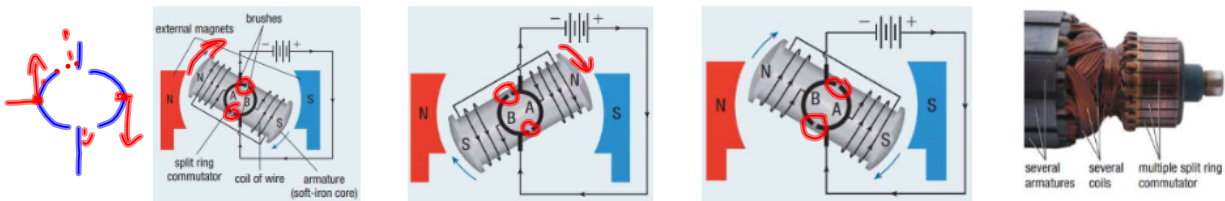


Split ring commutator:	coil is connected to the battery by "brushes" touching a "split ring commutator". when the coil is vertical, the connection breaks, then reconnects to the other side to keep going!
------------------------	--



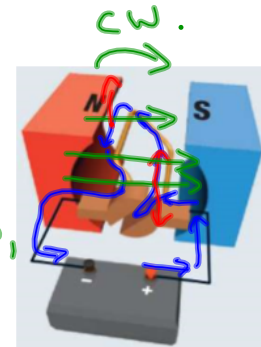
2. Modern DC motors

Armature DC motor:	2 improvements to increase the magnetic field: ① more loops. ② iron core (armature).
Modern DC motors:	have several coils and several splits, for 2 reasons: ① motor is <u>never</u> in the "incomplete circuit" state (it can always start up). ② maximizes force by using optimal contacts.



In which direction will the following loop rotate? What is the purpose of the split ring commutator?

∴ it is rotating clockwise (CW).
[other direction is counter-clockwise, CCW].



Purpose: ① prevents motor from getting locked in the vertical position.
② changes the direction of the current so that the motor keeps spinning in the same direction.

Homework: page 571: #1-3