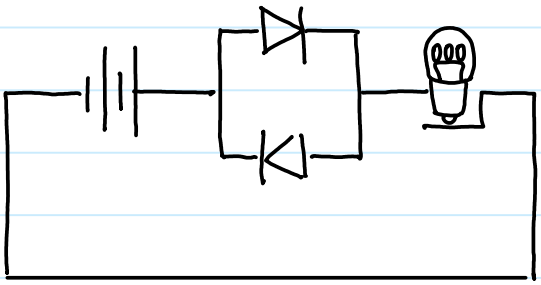
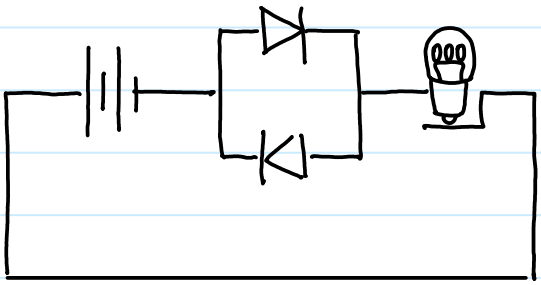
4) Faraday's Law

1) LIGHT EMITTING DIODE (VIDEO): 

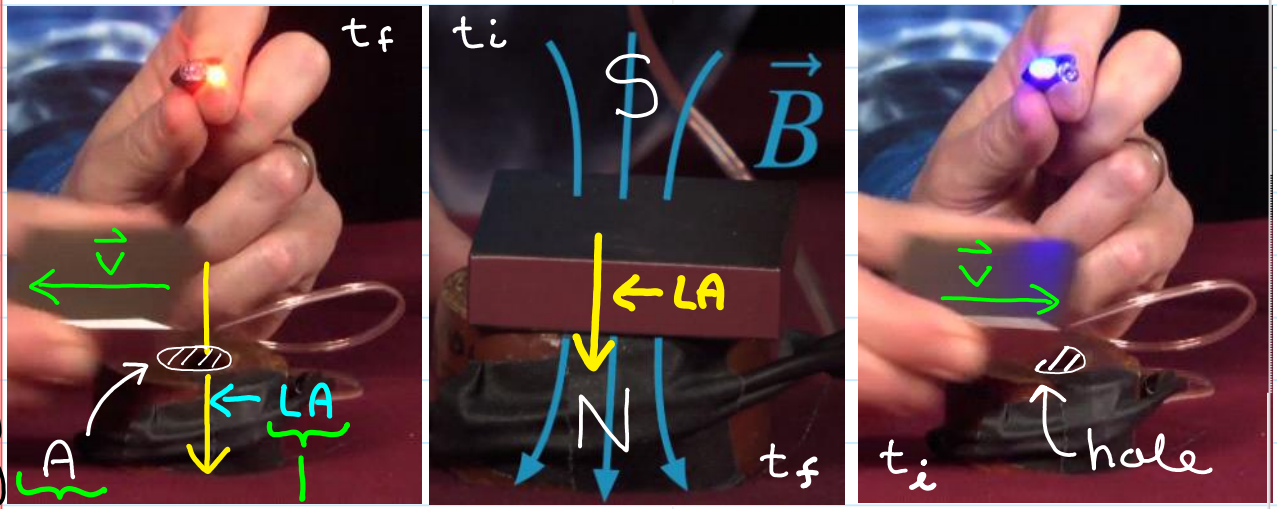
2) video: unlike a bulb, a light-emitting diode ( ) lets current flow just ...

3)
4) 

5)
6) 

7) INDUCED EMF (VIDEO)

8) video: instead of a battery, and EMF can be "induced" by a ...

9)
10)
11)
12)
13) 

14) review: the loop axis ( ) is perpendicular to the area ( ) of a conducting loop (or a coil of N loops)

5) Flux

1) More Induced EMF

2) Faraday's Law: $\mathcal{E} =$

3) magnetic flux: $\Phi =$ where θ is the angle between the loop axis and...

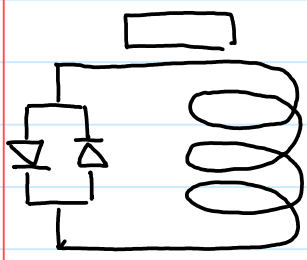
4) learn: induced EMF drives induced current, with direction given by...

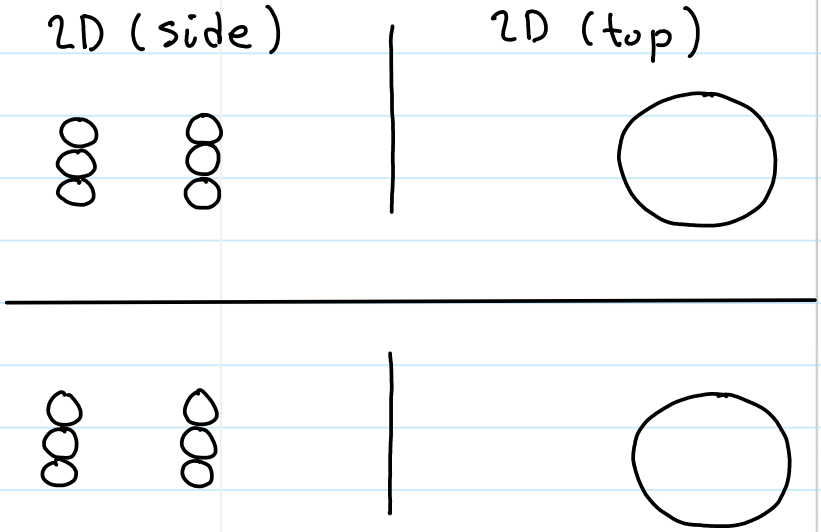
5) prepare (sketch, orange light)

6) 3D 2D (side) 2D (top)

7)

8)





10)

11)

12) solve (TB 25.1): (draw separate views for applied and induced $\vec{B}$ field ☐); note direction of $\vec{B}_A$ ☐; note change of $\vec{B}_A$ ☐; choose $\vec{B}_I$ to oppose change ☐; use right-hand to find induced current direction ☐