

## Consolidation of the Ohm Law

## Answer sheet

1. The chain has a 12V source and a  $6\Omega$  resistance rheostat. How strong is the current in the chain? (2points)

$$I = \frac{U}{R}; \quad I = \frac{12V}{6\Omega} = 2A$$

- a. How long did the current flow, if 10C charge has flown? (2 points)

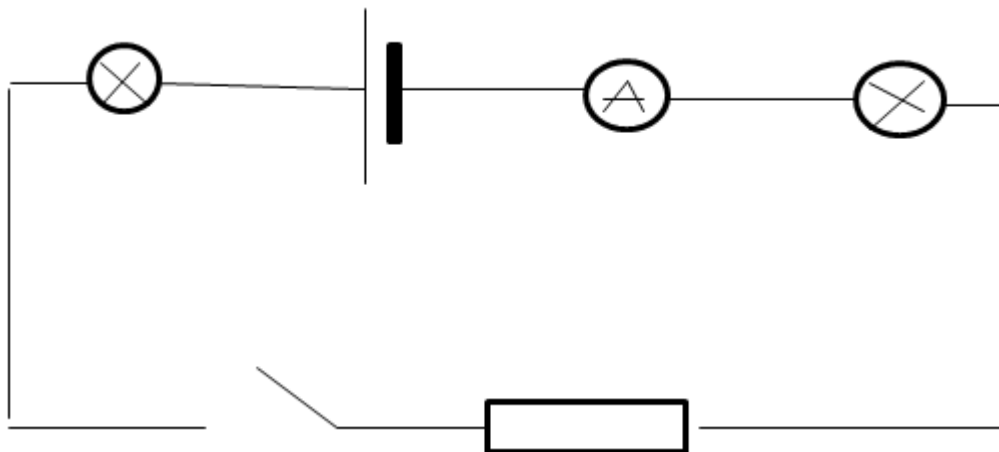
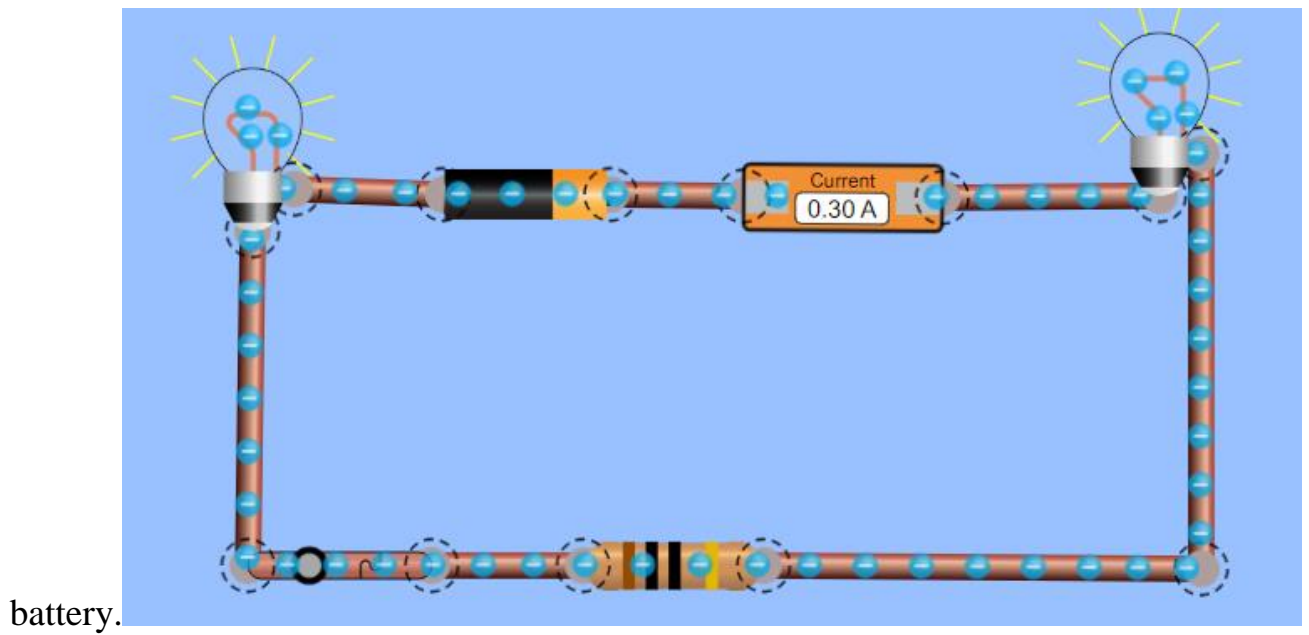
$$I = \frac{q}{t}, \quad t = \frac{q}{I}, \quad t = \frac{10C}{2A} = 5s$$

- b. What charge will flow in 30 seconds? (2points)

$$q = It, \quad q = 2A \cdot 30s = 60C$$



2. Join and draw the electric chain(*in your task sheets*) which consists of 1 resistor, 1 ammeter, 2 bulbs, 1 switch, 1



### ADDITIONAL TASK

3. Draw an electric chain according to scheme 1
- a. Count the electric voltage in the chain when the current is switched on. (2points)

$$U = I R, R = R_1 + R_2, U = 2A \cdot 6\Omega = 12 V$$

- b. What voltage will there be with the switch turned on if the ammeter shows the same? (2points)

When the switch is turned on via the II lamp, the current is not running, so

$$U = I R_2, U = 2A \cdot 3\Omega = 6V$$

- c. Join and check how this scheme works. Describe the result(with the switch on).  
(use <https://phet.colorado.edu>) (3points)

