

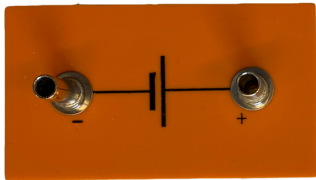
ELECTRIC CIRCUIT

1

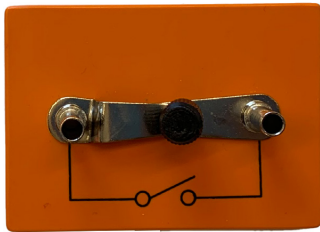
When you learn the drawing codes for the electric components you can make an electric circuit using the model chart. The chart shows you in which order to combine the different parts together.

Try and make your own electric circuit following the instructions in the cards 2 and 3. While doing this, you might also learn what open and closed circuit mean.

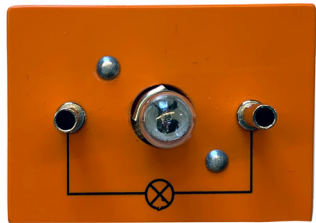
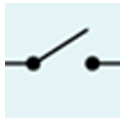
Components in the bag:



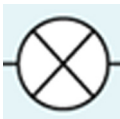
= BATTERY /
POWER SOURCE =



= SWITCH =



= LAMP =



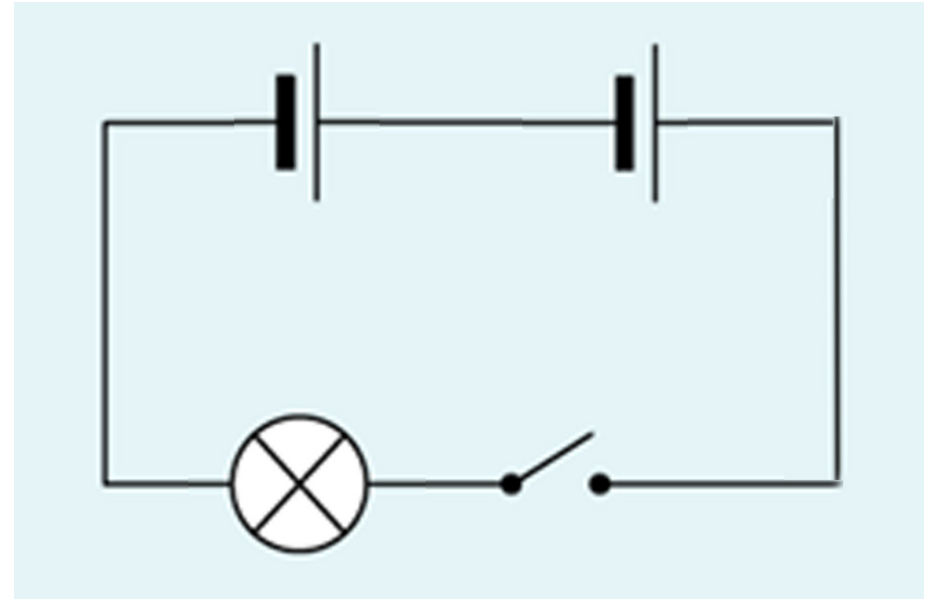
= CABLE =



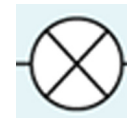
BUILDING THE ELECTRIC CIRCUIT, A

2

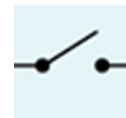
Try and build the electric connection shown in the model chart below. You can find all the components needed in the bag. In case this is too difficult you can find a photograph of the connection in card 3.



= BATTERY /
POWER SOURCE



= LAMP



= SWITCH



= CABLE

BUILDING THE ELECTRIC CIRCUIT, B

3

Try and build the electric connection shown in the photograph below. You can find all the components needed in the bag.



You can test the functionality of the electric circuit by pressing the switch which should light up the lamp.

Pay attention to the batteries, that those are well in place and in right direction. You can get new batteries from the information desk, if needed.

OPTICAL MORSE CODE (applied exercise 1)

4

The lamp will light up when you press the switch. Try signalling your own name using the Morse code. You can also try to signal some other word that your friend tries to guess.

- = short press
- = long press

Remember to take a short pause between each letter.

A .-
B -...
C -.-.
D -..
E .
F ..-.
G --.
H
I ..
J .-.-
K -.-
L .-..
M --
N -.
O ---

P .-.-.
Q --.-
R .-.
S ...
T -
U ..-
V ...-
W .--
X -.-.
Y -.-.-
Z --..
Å .-.-.-
Ä .-.-
Ö ---.

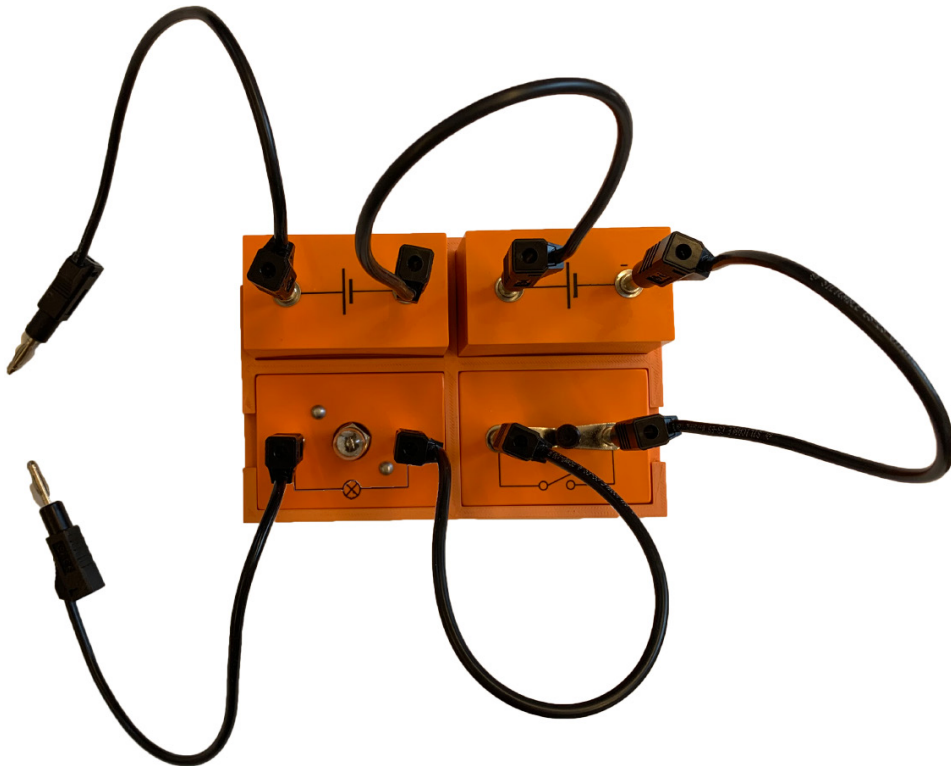
CONDUCTOR AND INSULATOR (applied exercise 2)

5

Modify the circuit by unplugging the the other end of the cable inbetween the lamp and the battery. Add one more cable as shown in the image, leaving the other ends of the cables unplugged.

You can find materials you can test for electrical conductivity in the bag. Take one piece of material at a time. Put it between the open ends of the cables and press the switch.

Which materials make the lamp light up? Why does that happen? You can find more information in the next card.



CONDUCTOR AND INSULATOR (theory)

6

Materials that conduct electricity have low electrical resistance and are called conductors. Correspondingly, materials that conduct electricity poorly or not at all are called insulators. Materials that fall somewhere between the two are called semiconductors.

Aluminium foil:

Conductor. Metals conduct electricity.

Copper wire:

Conductor. Metals conduct electricity.

Fishing line:

Insulator / semiconductor. Depends on what materials have been used and how thick the line is.

Eraser:

Insulator. Rubber or latex never conducts electricity.

Rubber band:

Insulator. Rubber or latex never conducts electricity.

Graphite:

Semiconductor. Depends on which alloying materials have been used and how thick the graphite is. paksua grafiitti on.

Iron wire:

Conductor. Metals conduct electricity.