



Conductors and insulators

HOW TO CREATE YOUR ELEMENTS

Disclaimer: This activity contains manipulation of electricity, but our material recommendation below will be super safe.

STORAGE

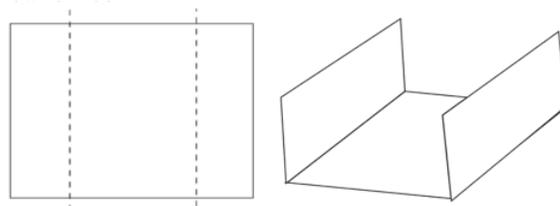
As the sequences require some material, we recommend storing the material in a shoebox. To protect the mini-lamps, we recommend to keep the box they were stored in, and placing it directly in the shoebox.

CRAFT THE ELEMENTS

A. The Electrical artist's book

If you want to put additional facts/elements in your story, feel free to adapt the text and/or the drawing regarding your pedagogical objectives.

1. Create the support of the "Artist's book", by folding a paper sheet as shown below:



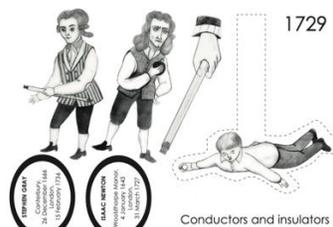
Recommendation: use A4 paper sheet at least 220gr and ivory-coloured.



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2. Print the figures on a paper sheet, (Annex “Cond. and insul. storytelling” p. 1). Then cut out the elements for step 4 (below)



Recommendation: use a paper sheet, the same size as the “Artist’s book” support described above, 220gr and colored paper (we used pastel pink).

3. Print the text on an A4 paper sheet, (Annex “Cond. and insul._storytelling” p. 2).



Aided by the sundial's son, a young scientist named Giovanni White, he uses a glass tube electrostatically charged by rubbing to attract small light particles with a cork rubbed attracts the leaves. He has discovered conductors, electricity flows from the tube to the cork, he added very long coils and also oil and hemp threads, very very long ones that could carry electricity really far.

Among his experiments was a very special one: the flying boy experiment! The tube was brought to the feet of a boy hanging through silk threads, and the boy attracted the leaves from one foot to the other without them having to touch. On Stephen's face was painted the happiest smile anyone has ever seen, thus proving that one can be happy while being electrified.

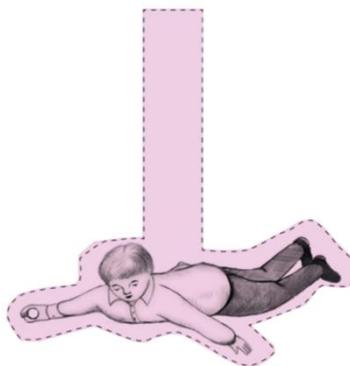


Recommendation: use a paper sheet, the same size as the “Artist’s book” support described above, and white.

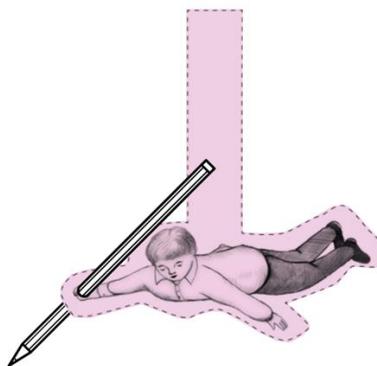
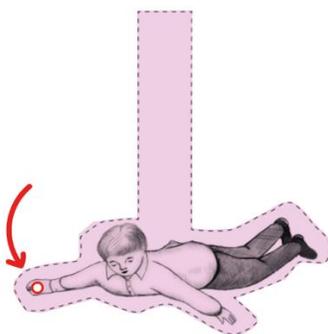
4. Finalize the “Artist’s book”, by gluing the elements printed in steps 2 and 3. You can reproduce the examples provided in the folder “some testing examples”.
 - a. Glue the figures and the frames with the names and dates on the 2 outer flaps



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- e. Use a round die cutter to make a hole in the hand through which you will insert the BIC pen.



- f. Cut or tear off small pieces of tissue paper, as if they were 2.5 cm leaves.

With a woollen cloth, rub the pen for about 20 seconds. Bring the child with the pen close to the small leaves. (see examples in the folder “some testing examples”)



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POTENTIAL ISSUES

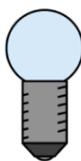
Test your cloth before the activity to make sure that the character can lift the leaves. If the leaves are too heavy, they will not be lifted: you may need to pick very small bits.

SEQUENCES

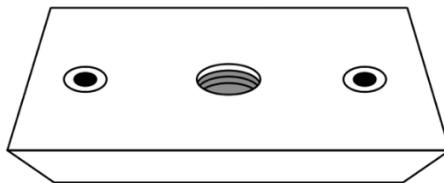
A. Prepare the equipment

With this material, the experience will be safe even if you are manipulating electricity.

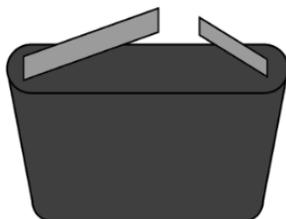
- 1 mini-lamp (better to have many of them, as it is a fragile element)



- **Optional:** a support for the mini-lamp and plug the wires



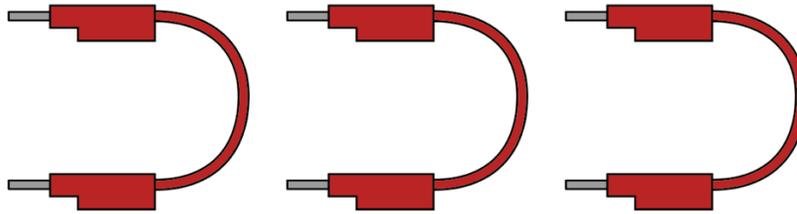
- 1 battery (flat, 4,5V)



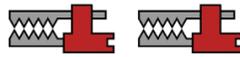
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- 3 wires



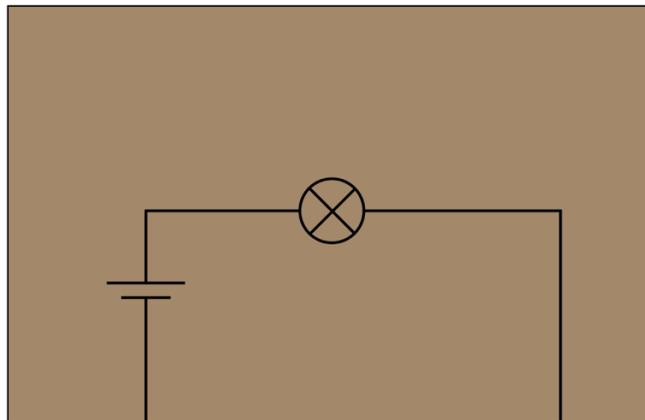
- 2 crocodile clips (to plug the wires on the battery)



- Prepare different types of material to test their conductivity, such as: iron, plastic, wood, paper, glass... and if you want to go a bit further: aluminium, water, water+salt...

B. Create your support

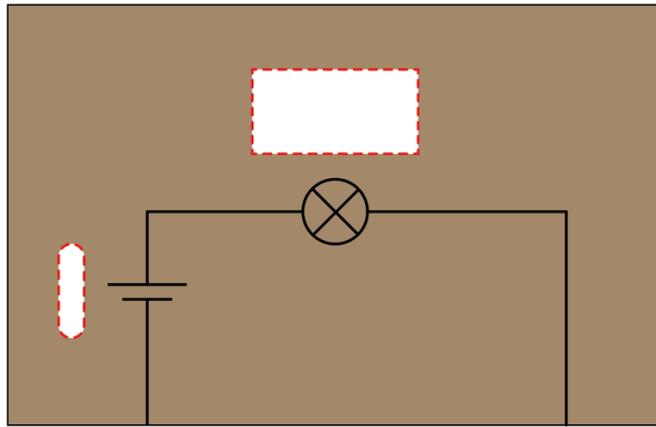
- On a paper cardboard, you can draw the circuit as below:



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- Then cut the place for the elements, in red on the picture below:



- Then you can place your elements and let the youngsters perform the activities described in the sequences!

