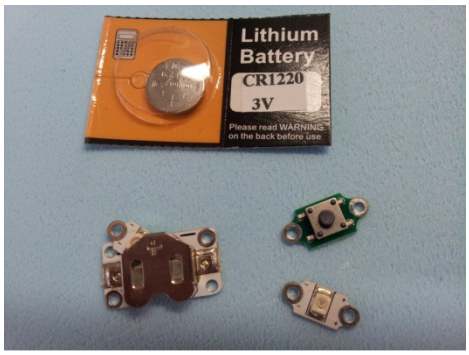
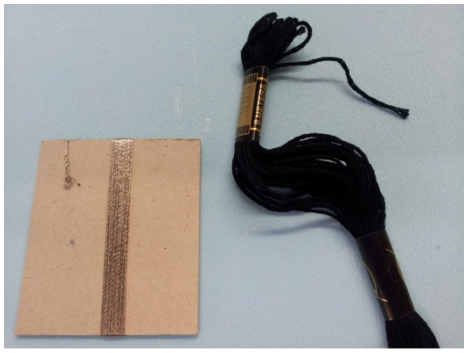
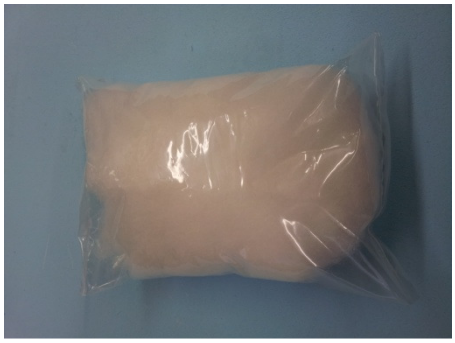
Alameede 1.1.7.6 „Põhikooli ja gümnaasiumi riiklikele õppekavadele vastav üldharidus“. Projekt „Tehnoloogiaõpetuse õpetajate täienduskoolitus”, moodul A5

22.10.2013, Tallinna 21.Kool

Timo Tiusanen


Lithium
Battery
CR1220
3V
Please read WARNING
on the back before use





ELECTRO
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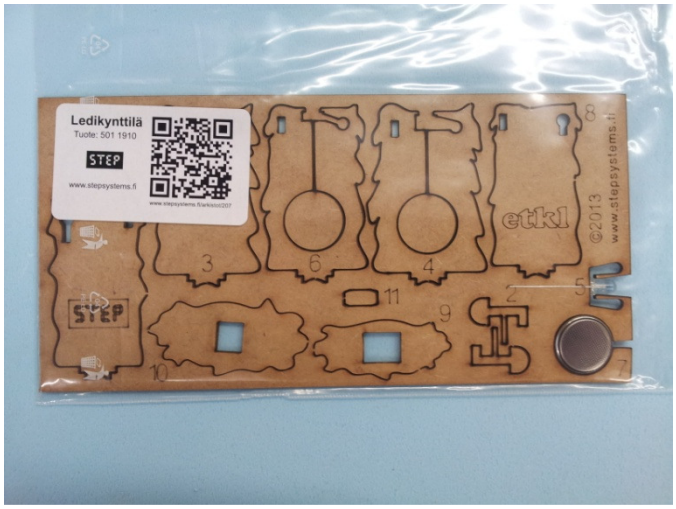
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How to make the 'Electro-Fashion Cat'

About the cat

The 'Electro-Fashion Cat' is an ideal introduction to e-textiles. It should be possible for someone with basic sewing skills to make it successfully by following these instructions. When complete the cats eyes will light up when the right ear (as shown above) is squeezed.

Tools list

In order to make your cat you will need the following:

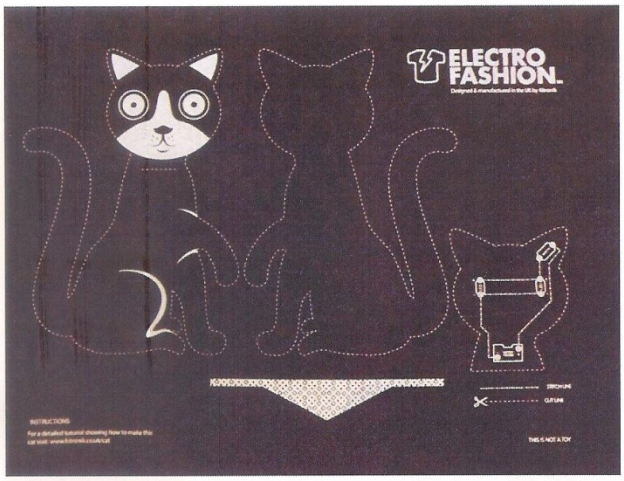
- A pair of scissors.
- A needle for embroidery thread.
- Pins to secure felt when sewing.

Caution!

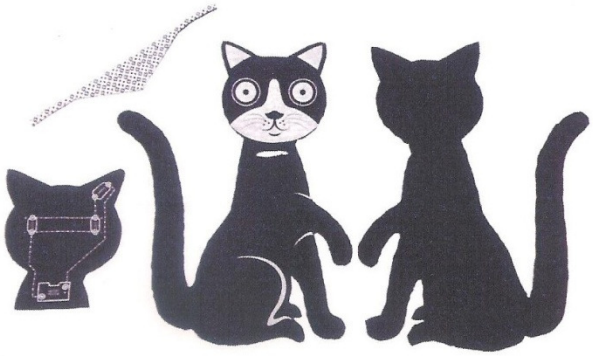
Once made please remember that this is not a toy and is not suitable for small children to play with.

Step by step guide to making your 'Electro-Fashion Cat'

Step 1

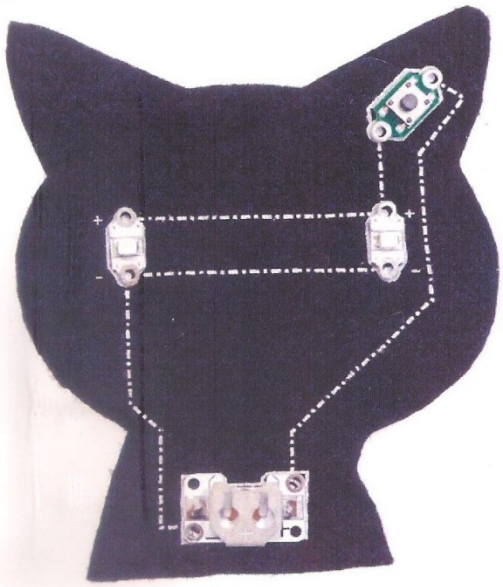


Start by cutting the four cat parts out of the piece of felt. The dotted lines indicate where you need to cut, as indicated in the bottom right hand corner of the felt. Try to cut just inside the dotted lines so that these markings aren't visible on the cut out pieces.



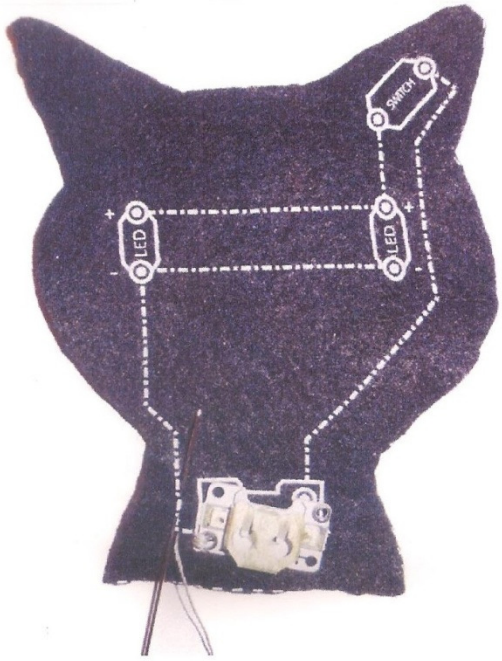
Once complete you should have four parts that look like those shown to the left.

Step 2



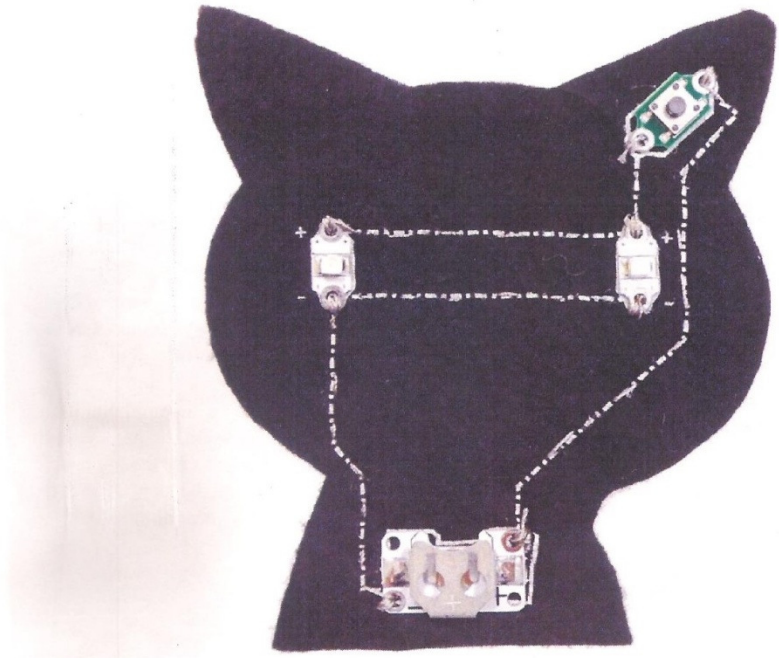
Now it is time to sew the electronic parts on to the piece of felt shown to the left. It is important to ensure that the coin cell holder and LEDs are in the correct orientation otherwise the circuit might not work.

Take the four electronic parts and place them on the felt as shown in the picture. Make sure that you remember to line up the plus and minus marks on the parts with the same markings on the felt (the switch in the ear can be mounted either way around).



It is now time to start sewing the parts into place. Start with the battery holder as shown in the picture to the left. Take a piece of the (silver) conductive thread and securely sew the bottom left connecting pad to the felt.

It is important that when the conductive thread is used to connect to any of the parts this is done securely with a tight connection. Loose connections can result in an unreliable circuit. The connections must be made using multiple tight stitches.



Once you are happy sewing with the conductive thread it is time to sew all of the parts in place. This needs to be done in three stages.

1. Continue sewing from the battery holder up to and securing the 'minus' connection point on the left hand LED part, then on to the 'minus' connection on the right hand LED part. Once complete secure the thread and cut away any excess.

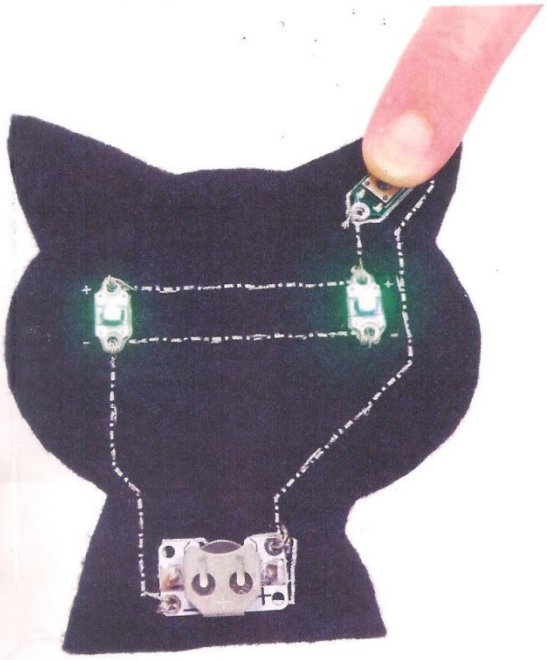
2. With a new piece of conductive thread start at the 'positive' connection on the left LED part, sew across to right LED and then up to the switch, connecting securely to each connection point. Once complete secure the thread and cut away any excess.

3. Last of all, use another new length of conductive thread to connect from the other connection point on the switch back down to the battery holder, connecting securely to each connection point. Once complete secure the thread and cut away any excess.

Note: It is import that no 'excess' thread from the three stages listed above are allowed to touch each other as this will stop the circuit working.

These sewing paths will match the markings printed on the felt.

Step 3



It is important to make sure the circuit works before it is sewn into the cat. This is because once it is sewn into place it will be difficult to correct any faults.

Take the battery included in the kit and insert it into the battery holder. **Make sure the '+' marked on the top of the battery lines up with the '+' marked on the top of the battery holder** (the '+' sign on the battery should be facing upwards).

Now when you press the switch the two LEDs should light up.

Fault finding

If the circuit does not work check the following:

- Make sure the battery is in the correct way around.
- Make sure the LEDs and battery holder are the correct way around.
- The connections between the thread and the pads are tight.
- That there are no shorts (touching pieces) between the three pieces of conductive thread used to connect the individual sections of the circuit.

Step 4

Now that you have a working circuit it is time to assemble and stuff the cat.

Start by placing the piece of felt with the circuit on top of the back piece of the cat.

Then lay the front piece of the cat on top of these two pieces making sure the slot for the battery is lined up with the battery holder.

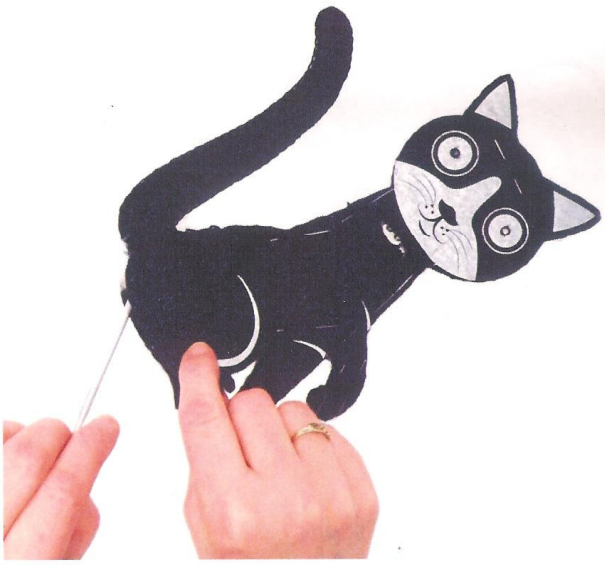
Once you are happy pin the three pieces in place.

Before you start sewing you will need to cut a small hole in the centre of each eye so that the LEDs can be seen.

You may need to adjust your pinning after doing this to ensure the LEDs line up with the holes.

Step 5

Start by using the thread provided to sew around the outline of the tail.



Now take a section of the wadding and push evenly into the tail, using something like a pencil or crocheting needle.

Continue sewing around the head of the cat, adding the wadding as you go.

When adding the wadding to the head section it is important that it is added behind the piece of felt with the circuit on.

Continue until you have used all the wadding and sewn all the way around the cat.

Use the scarf to cover the battery hole in the neck of the cat.

Congratulations you have now completed your e-textiles cat!