

Workshop 1, Exercise 3

Sew NeoPixel LEDs and Gemma

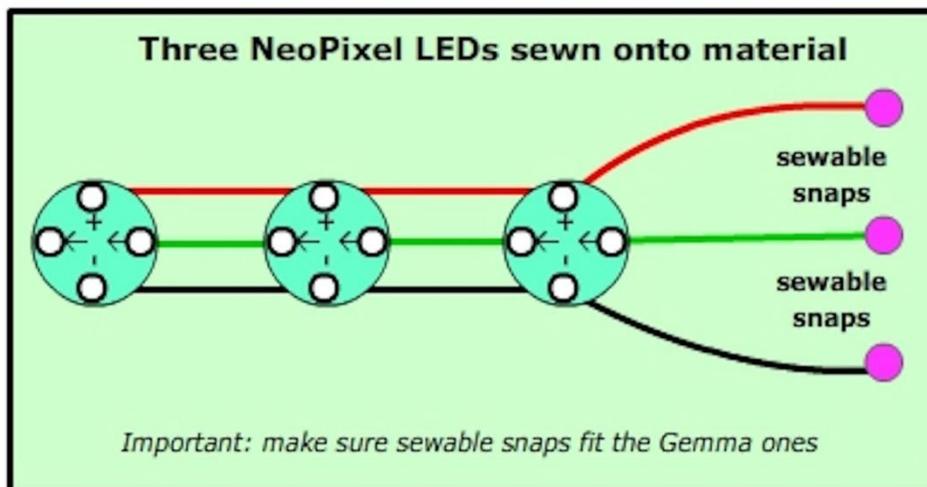
Note. Gemma, NeoPixels, Adafruit are trademarks of Adafruit Industries. Arduino is a trademark of Arduino and its partners. All rights acknowledged.

In this exercise you connect NeoPixels and Gemma using conductive thread and sewable snaps. There are two separate parts, which connect together. If there are two of you, do one task each. It is intended to provide you with your first experience of working with sewable electronics and conductive thread.

Task 1. Three NeoPixels linked to Sewable Snaps. Make sure you have:

- three sewable snaps (both parts)
- three NeoPixels
- a needle
- access to some ordinary thread and some conductive thread

Now look at the diagram. You should 'tack' each of the six parts in place with ordinary thread, and then make the joins shown using conductive thread. This is going to snap together with the Gemma on material you make in Task 2 below. We recommend you put the snap centres each 1 inch (2.4 cm) apart).



Test this using your Gemma and crocodile clips, or ask if anyone else has a sewn Gemma unit ready.

Note. The exercise shows how to use 'sewable snaps' because they will allow you to reuse Gemma when it is integrated into your future projects, for example within an electronic handbag. It also allows you to remove the Gemma/battery unit and store it safely between uses.

see over page for Task 2.

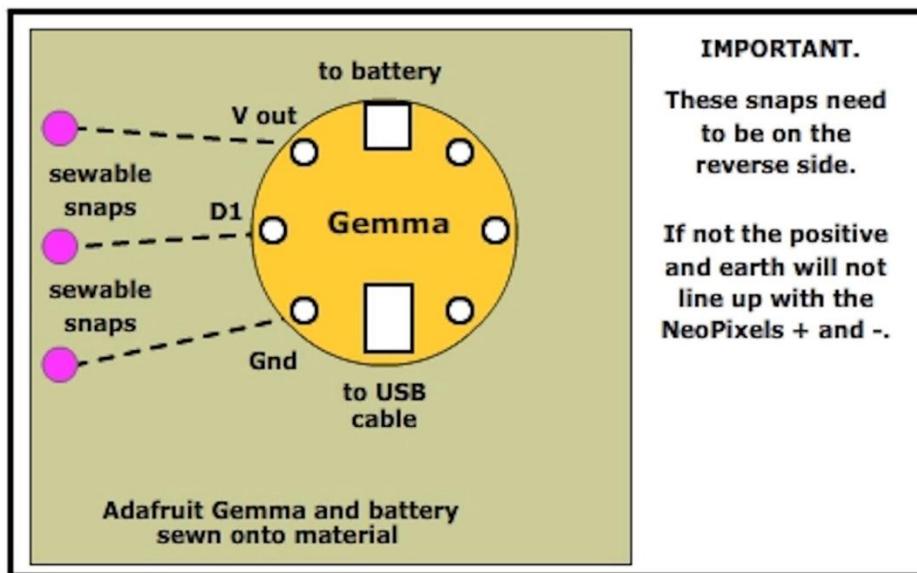
Task 2. A Gemma linked to Sewable Snaps. Make sure you have:

- three sewable snaps (the parts you have left over from Task 1)
- a Gemma

Now look at the diagram. You should 'tack' each of the four parts in place with ordinary thread, and then make the joins shown using conductive thread. Remember that this is going to snap together with the NeoPixel sewn unit you make in Task 1 above, so coordinate the spacing between the snaps.

IMPORTANT. Test that the snaps meet and that they are **ON THE CORRECT SIDES OF THE MATERIAL** so that the + and - line up before you go on to conductive thread.

This shows the Gemma on material.



Task 3. Connect the two parts. When both parts are ready, connect them together and switch on the power (using a battery or a USB cable). Do they work? If not, think how you can test the parts separately.

Well done. You now have the basic planning skills to make an electronic handbag, or other project of your choice. Start planning your personal project now.
