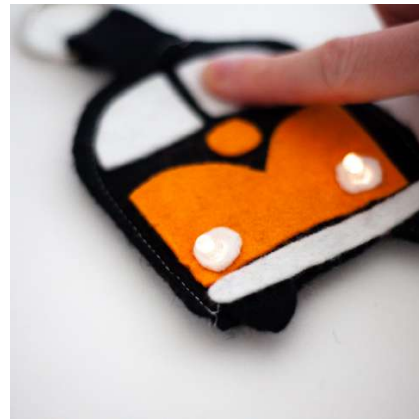


Light Stitches



E- Textiles Project Resources Book

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Introduction

The contents of this book are intended to help you complete the projects listed on the Light Stitches website. This updated booklet has some of your favourites and some new ideas added for you and your students to try.

The projects are varied. They become unique projects by their inclusion of electronic LEDs and the use of conductive thread.

The kits include all the components needed to make a whole product and some of the felt is self adhesive so there is no need for extra stitching.

Light Stitches 'E-Textile Project Resources' is the first of our electronic/textiles project books using conductive thread and available electronic components. These will be based on simple circuits and more advanced sewing this will be particularly of use to those of you who have already attempted 'Light Stitches' projects before. Please see our website for the latest projects.

Check us out on Social Media [Pinterest](#) [YouTube](#) [Facebook](#) [Instagram](#) and [Twitter](#)

We hope you find all the information and resources useful. If you have any problems, please do not hesitate to contact us.

Contact details are sales@lightstitches.co.uk

Conductive Thread

The mixed properties of electronics and textiles was unheard of until a few years ago. With technology moving as fast as it has in recent years, the possibilities of clothing and accessories with visual and audio effects by the use of flashing lights and sensors has now been made much easier in a domestic situation with the availability of conductive thread.

Conductive thread is similar in properties to ordinary sewing thread but, it also has the ability to conduct a small amount of voltage through it. It can do this as it has metal incorporated into it (usually silver, nickel, tin or copper) with a core of normally cotton or polyester. The thread is not insulated and therefore attaching it to a metal component within a circuit in place of the usual wires means the circuit is much more flexible allowing you to maintain many of the original properties of the material such as drape and feel. As it is a thread it also allows you to sew by hand or machine and even embroider designs into textiles. Its resistance properties are 4Ω per 100mm.



When using by machine it is not necessary for the second thread to be conductive thread too just the spool for the side of the design you wish to have the circuit on.

LED's and Battery Holders

LED's

There are many types of LED's from basic non flashing to flashing two prong 5mm lights.



Orange LED lights



Adafruit sequin lights

There are many types of sewable lights including Teknikio star and heart LED's, Adafruit sequin lights and our own sewable lights available in many colours including blue, white and orange.



Teknikio heart LED

The Chibi circuit stickers by Chibtronics can be sewn into your e-textile project or used in other crafts such as card making, copper tape is used in making a circuit.

In this book I have used all the types of lights stocked at Light Stitches so you can choose the best lights for your projects.



Chibi light card

Battery Holders

Again there are many different types of battery holders depending on your project you can decide what is needed for your project.

We use a small battery holder in conjunction with our soft switch for our smaller projects. These use CR1220 batteries.



CR1220 battery holder

With the soft switch projects we use the larger battery holder. These use C2032 batteries.



CR2032 battery holder

Battery holders also come with switches. These use C2032 batteries.



CR2032 battery holder with switch

How the circuit works

This shows one of the simplest circuits. When the battery is inserted the LED's light up. Resistors are used within circuits to protect components from damage, as LED's can be destroyed by voltages over 3 volts. For this reason, a 3 volt cell battery is used, therefore the LED is safe from damage and can be sewn directly into textile projects. Voltages over this amount will require resistors to protect the LED's from damage.

Schematic drawing of circuit

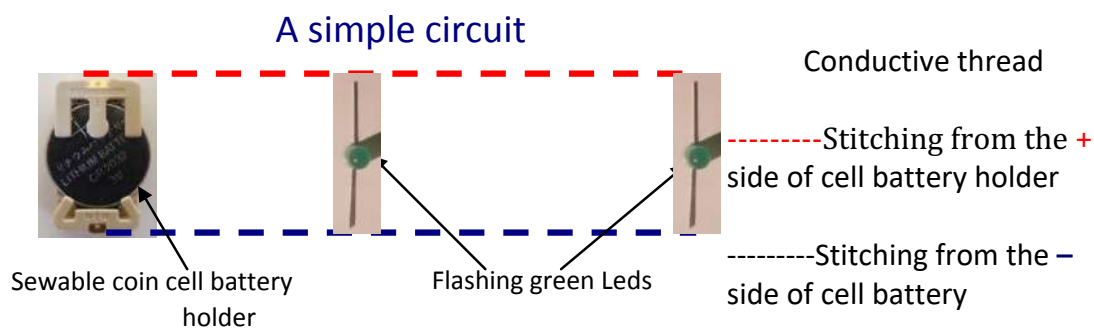


Diagram 1

Diagram 2

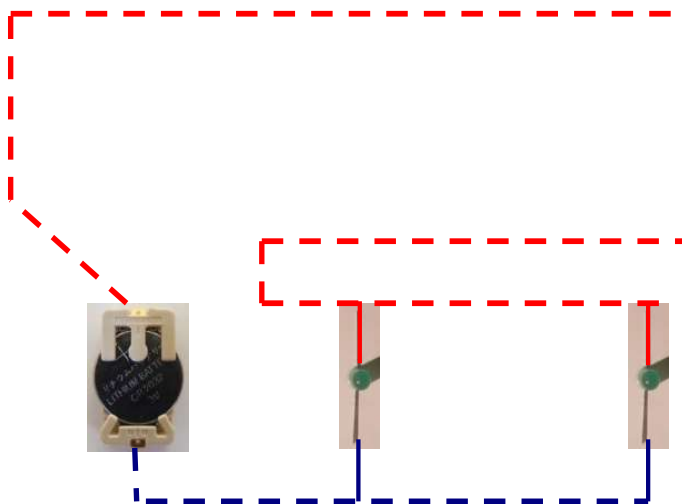


Diagram 1 is exactly the same circuit as diagram 2

You will notice the red conductive thread track ----- in the diagram to the left has been extended, the need to extend your stitching can be to avoid an obstacle or to move the battery away from a unsuitable area or basically to stop a short circuit by the overlapping of the + ----- conductive thread with the - ----- conductive thread track. Generally to reach a specific area.

A simple circuit

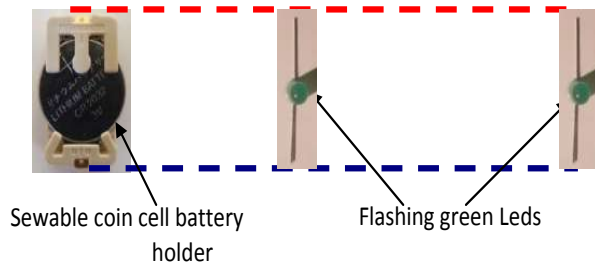


Diagram 3

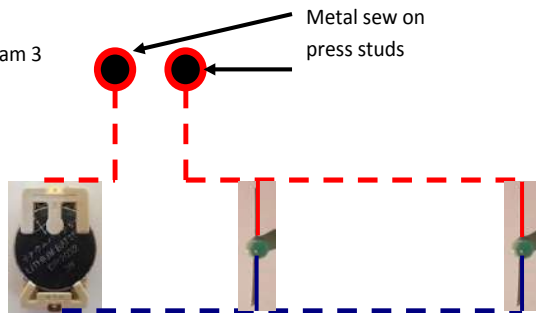
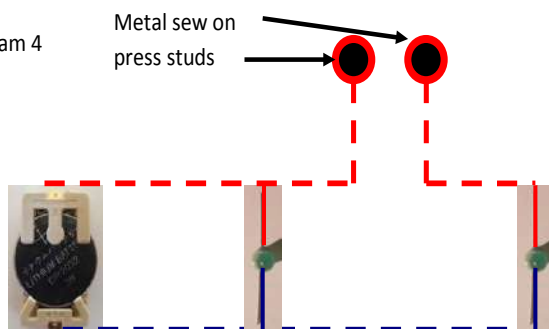


Diagram 4



Returning to diagram 1

If a switch needs to be added to your textile project, there are a number of ways in which this can be achieved.

A switch is a component which breaks and then reconnects a circuit. A sew on press stud can be made into a switch: for example when both parts of the press stud are sewn on with Light Stitches conductive thread and the press stud is fastened, the circuit is made and when unfastened the circuit is broken.

This same principle can be used with zips and conductive Velcro.

How to add a switch to break the circuit.

As shown in diagram 3 the + **conductive thread track** is broken before both Leds which disconnects both.

When the press studs are disconnected both Leds will turn off and when press studs are connected both Leds will simultaneously flash.

How to add a switch to break part of the circuit.

As shown in diagram 4 the + **conductive thread track** is broken after the first led, which disconnects only one Led. The first Led will continuously flash, as that part the circuit has not been broken.

When the press stud is connected both LED's will simultaneously flash, and when disconnected only the first Led will continue to flash.

Diagram 2

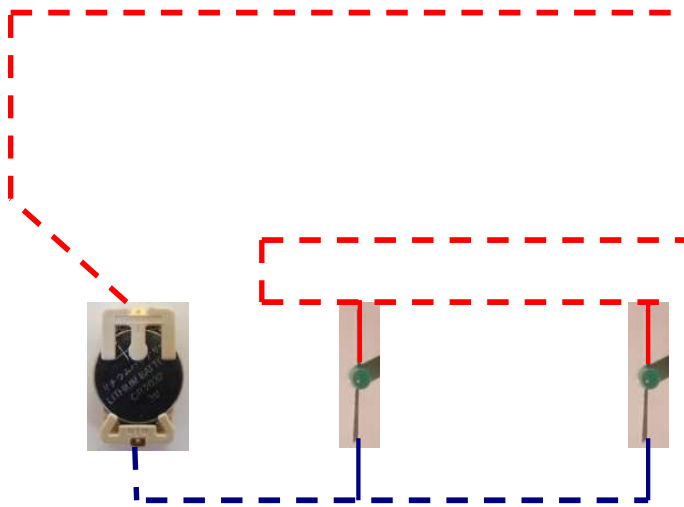
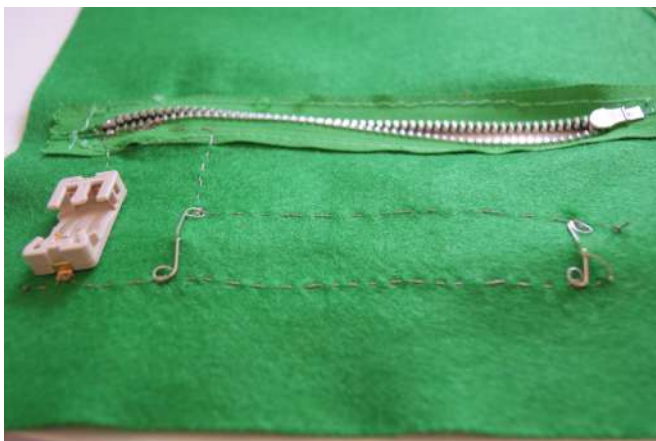
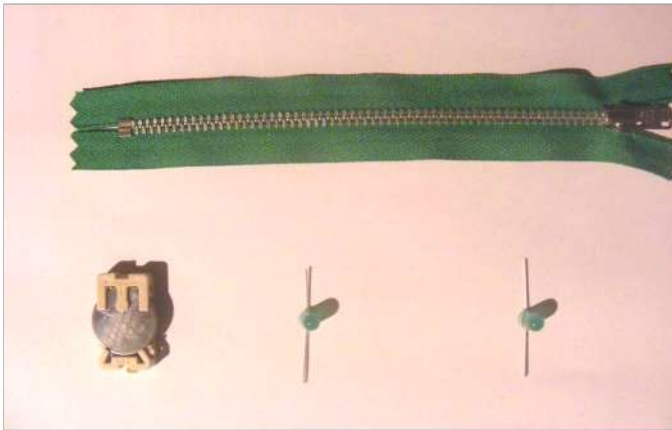


Diagram 2A



Returning to Diagram 2

You will notice the red conductive thread track ----- in the diagram to the left has been extended, Lets presume this is to accommodate a zip.

A metal zip can easily be made into a switch to turn on the leds (activate) or turn off the Leds (deactivate) By connecting Light Stitches conductive thread directly on opposing sides of the metal zip, the circuit has a switch attached.

When the zip is open the circuit will be broke and the LED's will turn off.

Alternatively, when the zip is closed the circuit is complete and the LED's will be turned on and flash simultaneously.

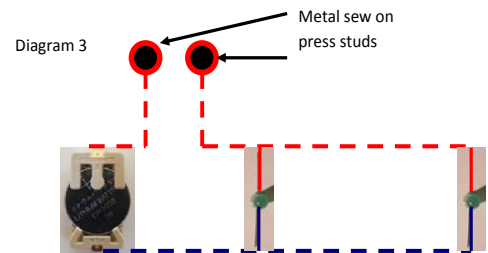
Diagram 2A shows the circuit avoiding the obstacle (zip) and the switch to operate the LED's. As the metal zip is closed the circuit would not be broken and the LED's will be turned on.

This picture shows the circuit working within the flower pencil case project.

Please remember Light Stitches conductive thread can be used to make various switches with sew on press studs, zips and conductive Velcro, all using the same circuit.

Attaching electronics using various Textile materials for switches

A metal sew on press stud can be used as a switch as shown in Diagram 3.



The metal press stud in the open position breaks the + - - - - track, turning the circuit off. (switching off LED's)

When the metal press stud is fastened the track is connected, turning the circuit on (turning on LED's)



Conductive Hoop & Loop (Velcro™) can be used as a switch, it works in exactly the same way as the press stud.

The Conductive hoop & loop (Velcro™) in the open position breaks the + - - - - - track, turning the circuit off. (switching off LED's)

When the Velcro is fastened the track is connected, turning the circuit on (turning on Leds)

Camper Van Key Ring Kit



Kit Contents

- Easy-sew Battery holder
- Coin cell Battery
- 2 white LEDs
- Conductive Thread
- Soft Switch felt pad
- Metal key ring
- Black Felt
- Orange and white self adhesive felt
- Assembly instructions and template
- (Class packs for 30 students are available)



You will also need:

- Needle
- Long Pointed Pliers
- Scissors
- Sewing Machine (or can be hand sewn)

Assembly Instructions

1. Cut out the templates and use them to cut out shapes from the relevant colour felt. Either draw around the templates or pin on to felt to cut out. The camper van shape should be cut out on a double layer of black felt so you have 2 camper van shapes to use as front and back. Picture A.



Picture A

2. Taking one of the black van shapes to use as the front, stick on the orange bonnet, badge and white windows – use template. Picture B.



Picture B

3. Push the LEDs through the white felt lights and from the front to the back of van. Sticking the felt lights onto the felt as you go. Picture C.



Picture C

4. Make sure the positive leg (longest) is pointing up and negative leg is pointing down. Picture D.



Picture D

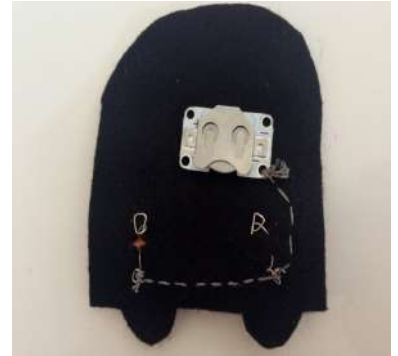
E- Textiles Project Resources

5. Use the pliers to bend each LED leg round into a loop. Picture E.



Picture E

6. Knot one end of the conductive thread onto the negative hole on the battery holder. Make sure the knot is pulled very tight. Place the battery holder (with coin) in position as shown in the picture F.



Picture F

7. Sew the battery holder in place sewing through the hole and felt. Stitch a running stitch (not to be seen on the front of fabric) down to the negative leg of the right LED first.

Sew the conductive thread around the LED leg and felt making sure it is knotted before stitching to the next negative LED.

Sew a couple of stitches beyond the last LED leg and then knot tightly. Cut thread. Picture G.



Picture G

8. Knot conductive thread to the positive hole on the battery holder. Stitch as shown in the picture up to where the soft switch is going to be placed (in the window), ending with a longer stitch that will be seen under the hole of the felt pad. Knot and cut thread.
9. Stick the soft switch in place over the conductive thread. Sew the conductive thread to lay over the top of the Soft Switch and then running stitch to the positive legs of the LEDs. Sew each LED leg as before finishing with a knot. You should find that when the soft pad is pressed it acts as a switch to turn the van lights on. Picture H.



Picture H

E- Textiles Project Resources

10. Attach the other black felt van shape to cover the components and become the back of the camper van. Add the key ring tag to the top of the van ready to sew into place. Using a sewing machine (or hand sew), stitch around the shape, just inside the border. Picture D.
11. Attach metal key ring and stick on white self-adhesive felt bumper. Picture I.

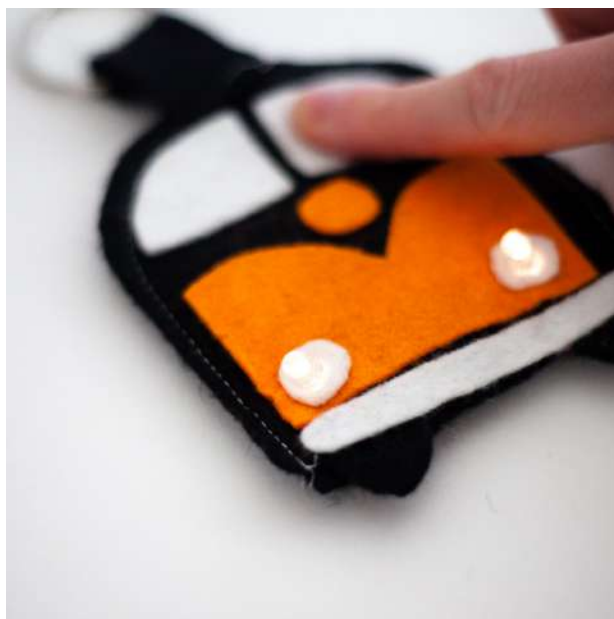


Picture I

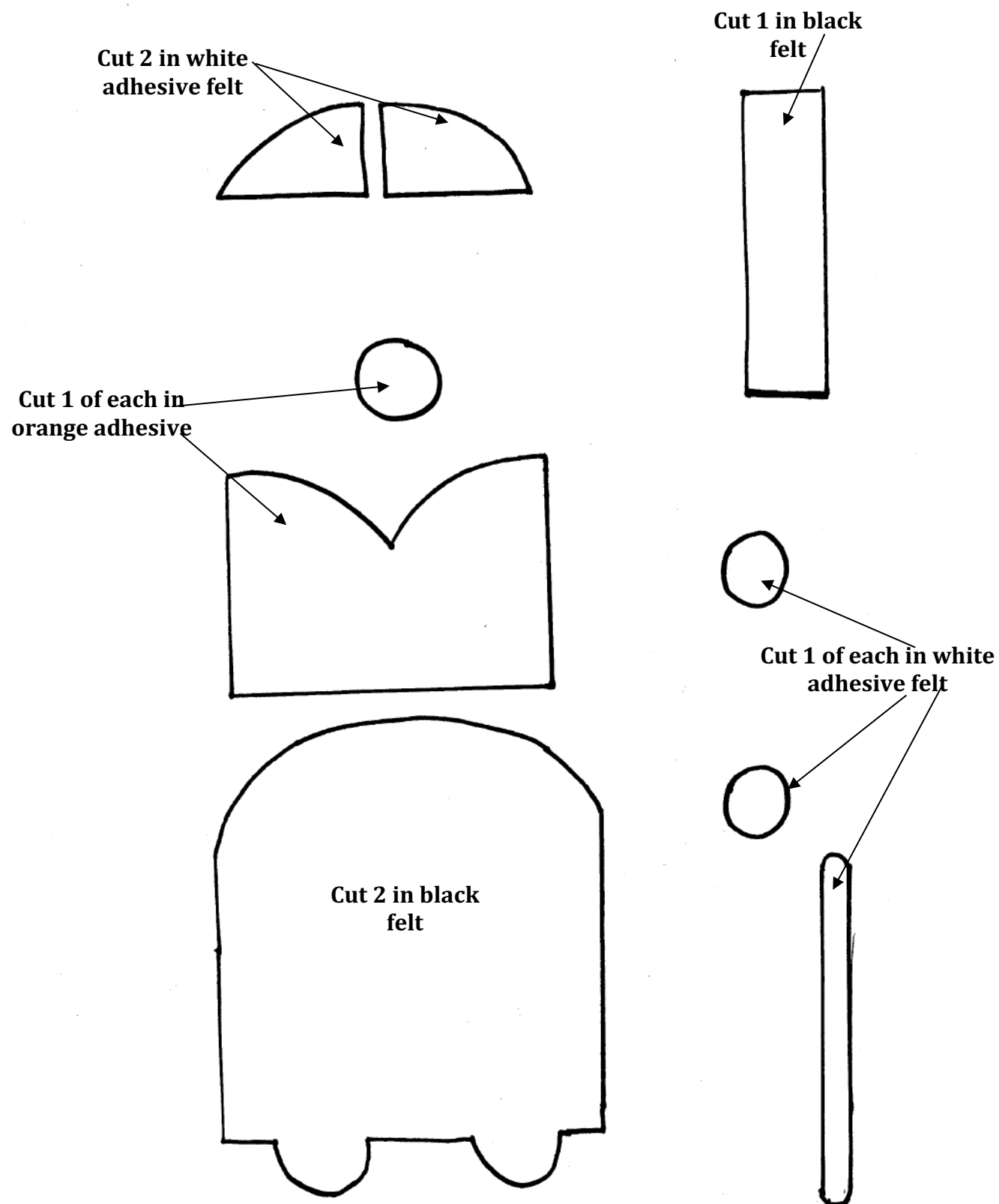
Troubleshooting – If the LED is not working

- Check the battery is in the correct way round
- Check that the stitching does not cross over itself anywhere
- Check that there are no loose threads causing a short circuit
- Check that the correct ends of the thread have been attached to the correct ends of the LED (positive end of battery through to positive leg of LED and same for negative

You will see that when the soft pad is pressed in the camper van window, it acts as a switch to turn the van lights on.



Camper Van Template



Heart Shaped Purse

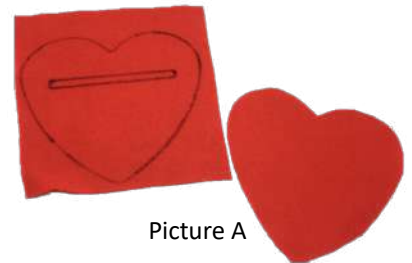
Kit Contents

- Red felt
- Self-adhesive felt light pink
- Self-adhesive felt white
- 2m conductive thread
- 1 red metal zip
- 1 battery holder with switch
- 1 Teknikio easy sew LED
- 1 CR2032 Coin cell battery
- Heart shaped templates

You will also need a fabric marker pen (or the like) and the usual basic sewing equipment, i.e. needle, scissors, thread, etc.)

Assembly instructions

1. Using the largest template draw 2 large hearts on the red felt using a fabric marker pen. Picture A.
2. In one of the hearts draw the rectangle which makes the slot for your zip use the template.
3. Cut out two large hearts and cut out the rectangle from one heart.
4. Place the zip underneath the heart with the slot so that the zip lock foot and the teeth can be seen clearly then pin and tack into position. Picture B.
5. Using a sewing machine on normal straight stitch, sew from A-B, then from C-D then from E-F and then G---H. This forms a box around the zip, holding it firmly in place. Picture C.



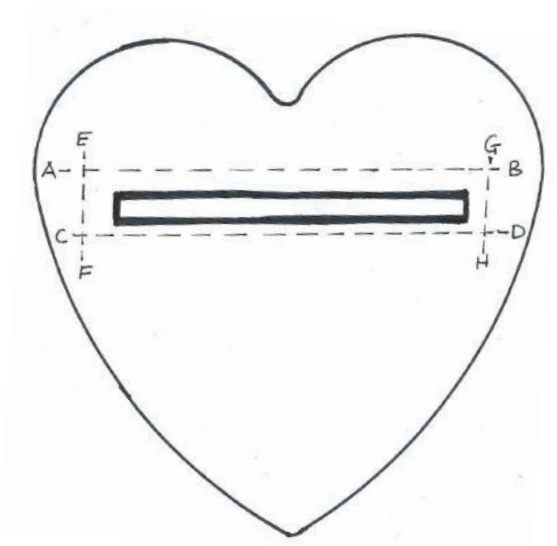
Picture A



Picture B



Picture C



E- Textiles Project Resources

6. Place the hearts right sides together, with the zip open and pin, then tack together around the outside edge. Use a 1cm seam allowance stitch around the heart. Picture D.
7. Finish off all the machine threads by snipping close to the stitching. Snip the curves, and then trim the 1cm seam down close to the stitching to reduce bulk. Turn purse right side out through zip.
8. Using the template draw and cut out 1 middle sized heart from the bright pink self-adhesive felt. Peel off the backing and place in the middle of the whole red heart.
9. Using the template, draw and cut out 1 small heart. Attach as shown. Picture E.
10. Place the Teknikio heart LED in the middle. You'll notice that there is positive and a negative shown on the heart LED. Picture F.



Picture D

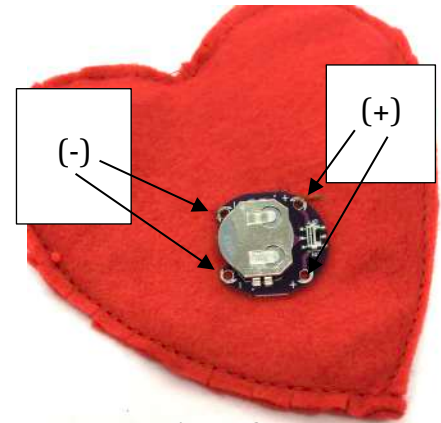


Picture E



Picture F

11. Now use the conductive thread and sew the negative side of the LED. Turn purse inside out through zip then place the battery holder on the back of the LED. Position the battery holder as shown. Sew through a hole on the negative (-) side of the battery holder. Secure with a knot. Picture G.

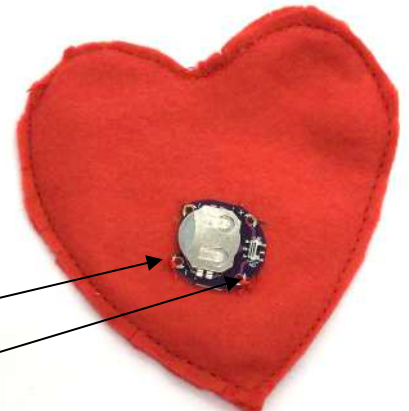


Picture G

12. Repeat on the (+) side of both the LED and the battery holder. Make sure each stitch is secure. Secure with a knot.

13. Secure the other two holes on the battery holder with red thread. Add the battery to make sure the LED works. Picture H.

Red thread sewn in holes to secure battery holder.



Picture H

14. Now cut a small piece of felt as a cover for the battery holder. Hand sew in place but only sew two sides otherwise you will not be able to switch on the LED or change the battery. Picture I.



Picture I



The completed purse



Christmas Reindeer with a Chibi Light (Chibitronics)

A Christmas reindeer using a Chibi light circuit sticker from Chibitronics. These LED's can be used in paper circuit or in sewing. All achieve great results.

Kit Contents

- Battery holder with switch
- CR2032 coin cell Battery
- 1 white Chibi light (a LED can be used instead)
- Conductive Thread
- Teddy Bear brown felt
- Red self-adhesive felt
- Green ribbon
- Stuffing
- Assembly instructions and template
- (Class packs for 30 students are available)



You will also need:

- Needle
- Scissors
- Sewing Machine (or can be hand sewn)



Assembly Instructions:

1. Cut out the templates and use them to cut out shapes from the relevant coloured felt. Either draw around the templates or pin on to felt in order to cut out. The reindeer shapes should be cut out on a double layer of teddy bear brown felt so you have 2 pieces to use as front (A), middle (B) and back (C) a separate template. Cut the nose in red adhesive felt. Picture A.



Picture A

2. Taking one of the reindeer shapes to use as the front stick on the Chibi Light (leave the nose until last)



Light (leave the nose until last)



Picture B

3. On your battery pouch felt (C) sew your battery holder with the conductive thread as shown with a small (-) in the picture. Knot one end of the conductive thread onto the negative hole on the battery holder sew through several times and make sure it is secure. Make sure the knot is pulled firm.



Picture C

4. Sew through the fabric without sewing through and stitch as shown in the picture to the base of the pouch. Picture C.
5. Turn over the pouch and use the conductive thread to sew through both reindeer pieces. Sew the conductive thread through the back of reindeer piece (A) work up to the chibi light (mark the spot to sew through makes it easier) and sew through the negative (-) part of the light the of the light. Sew a few stitches past the light and secure the thread. Picture D
6. Repeat the same process on the positive (+) battery side. Sew the conductive thread through the back of reindeer piece (A) work up to the LED light and sew through the positive (+) leg of the light. Sew a few stitches past the light and secure the thread.



Picture D

7. You now should have the 3 pieces together. Switch on you light to make sure it works. If it does not work check your stitches are secure and your battery is in correctly before you sew and complete your reindeer. Picture E.
8. Sew through the felt to secure the pieces together (take care where the conductive thread is). Fold and sew the ribbon to create a loop to hang up.
9. Leave a space for stuffing. Stuff lightly position and stick on the adhesive eyes. Picture F.
10. Make a small hole in the centre of the nose to allow the Chibi light to shine through and then position and stick on the nose. Picture G.
11. Your completed reindeer. Picture H.



Picture E



Picture F

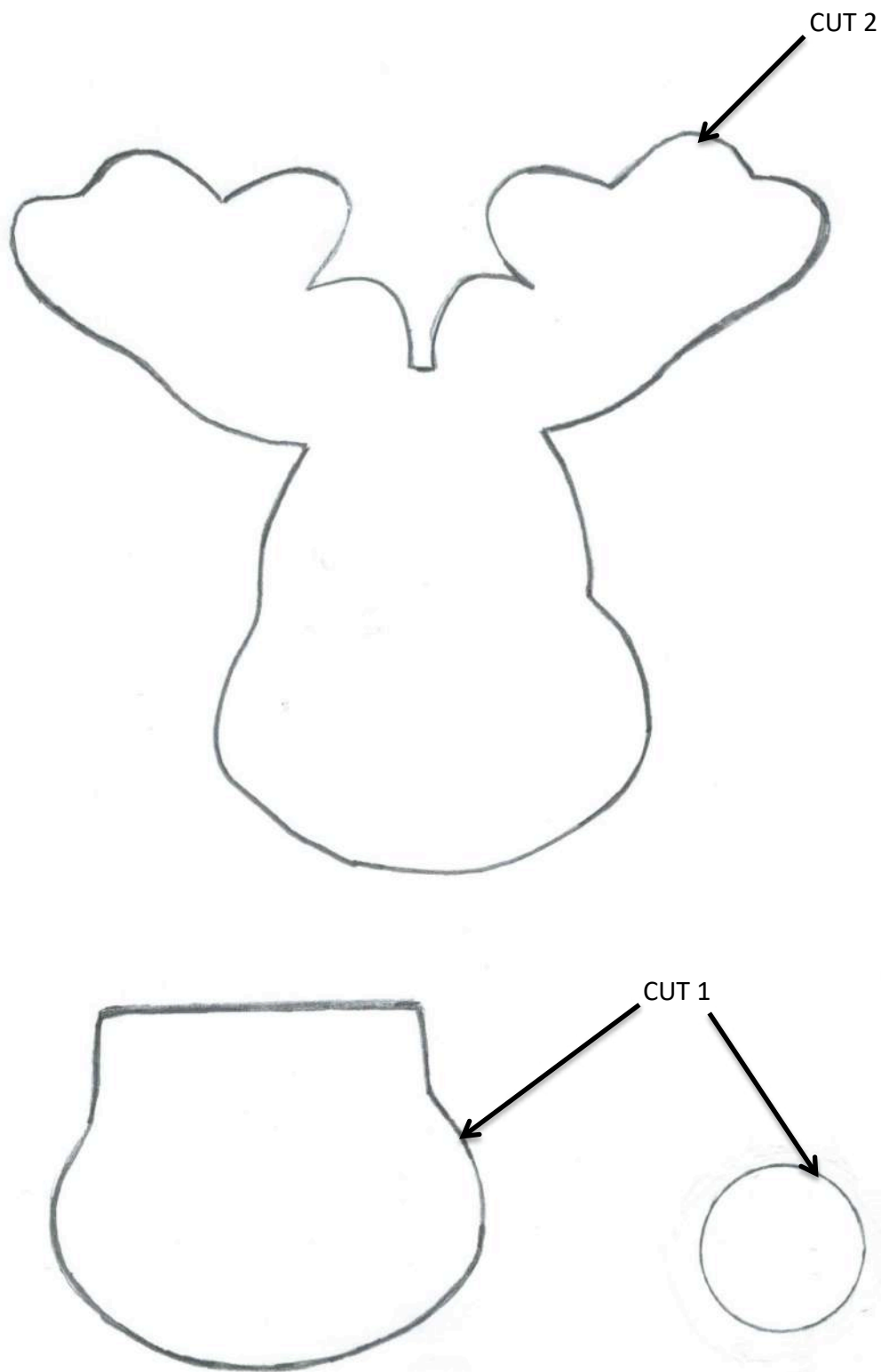


Picture G



Picture H

Template for the Reindeer



Flower Pencil Case

Kit contents

- Green felt
- Self-adhesive light green felt
- Self-adhesive yellow felt
- Self-adhesive orange felt
- 2m of Light Stitches conductive thread
- 1 green metal zip
- 1 CR2032 coin cell holder
- 2 green flashing LED's
- 1 CR2032 Coin cell battery



You will also need a darning needle to create a hole through the felt, a pair of long nosed pliers, a fabric marker pen and the usual basic sewing equipment needle, scissors & thread.

1. Using a fabric marker pen centre the green felt, mark, then cut out 10cmx 15cm rectangle as shown, to insert metal zip. Picture A.
2. Place the zip underneath the slot so that the zip lock foot and the teeth can be seen clearly. Pin and then tack into position.
3. Using a sewing machine on normal straight stitch, sew from A-B, then from C-D then from E-F and then G-H. This forms a box around the zip, holding it firmly in place. Picture B
4. Turn material over use a flower template draw and cut out the large sized flower from light green and orange adhesive backed felt.
5. Peel off the backing and place in position on dark green felt. Use a flower template and draw and cut out 1 small flower. Peel off the backing and place in the middle of the large sized flower.

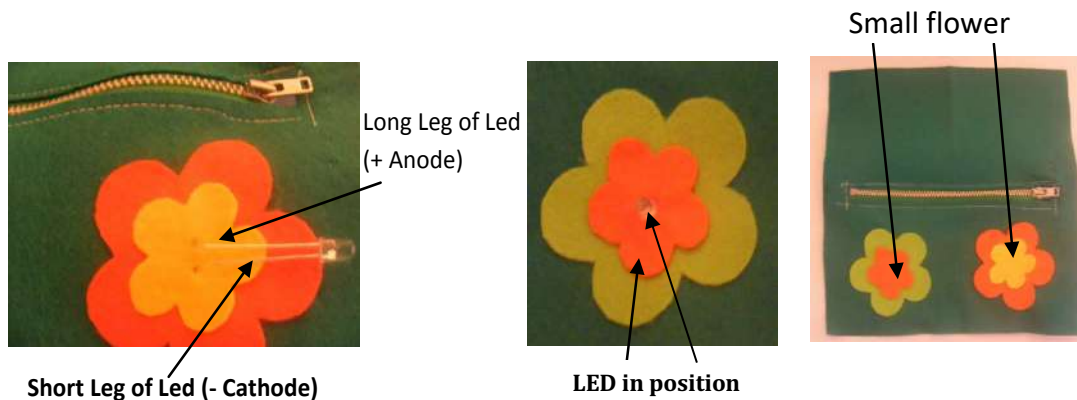


Picture A



Picture B

6. Attach as shown below. With a darning needle push a hole in middle so that the legs of the LED can be inserted through to the back of the flowers.



7. You'll notice that one leg of the LED is longer than the other; the long leg is the positive and the short the negative.
8. Turn flower pencil case over as shown. Then using a pair of long nose pliers, coil each leg round so that they lie flat as a coil against the felt repeat for both LED's. Picture C.



Picture C

9. Loop conductive thread through eyelet of coin cell battery holder, and secure with a couple of knots.

10. Using a small running stitch take your stitching up to the top layer of the teeth of the zip and starting at the very end use running stitches working in between the metal teeth (approximate 6 teeth), then turn around and take the running stitches in the gaps back to the end of the zip. Use the metal teeth as a guide to the size of your stitches and keep your stitches close to the teeth. When you reach the end of zip, fasten off as shown. Picture D.



Picture D

11. Starting approximately six teeth away from the end of the zip, use running stitches and work towards the end of the zip, working in between the metal teeth, then turn around and take the running stitches in the gaps back to the starting position. Using the remainder of the conductive thread loop around the LED coils to connect the LED's as shown above.
12. Loop conductive thread through the remaining eyelet of coin cell battery holder, (- **negative end of battery holder**) and secure with a couple of knots. Using a small running stitch take your stitching across from the coin cell holder and connect the remaining led by looping around the led coils fasten off.
13. Insert coin cell battery to check circuit. With the zip open, pin, then tack together around the outside edge. Using a 1cm seam allowance stitch around the pencil case.



Troubleshooting – If the LED is not working

- Check the battery is in the correct way round.
- Check that the stitching does not cross over itself anywhere
- Check that there are no loose threads causing a short circuit
- Check that the correct ends of the thread have been attached to the correct ends of the LED (positive end of battery through to positive leg of LED and same for negative)



Fox key Ring

Kit contents

- Battery holder
- Coin cell Battery
- 2 yellow LEDs
- Conductive Thread
- Soft Switch felt pad
- Metal key ring
- Brown Felt
- Black and white self-adhesive felt
- Assembly instructions and template



You will also need:

- Needle
- Long Pointed Pliers
- Scissors
- Sewing Machine (or can be hand sewn)

Assembly Instructions

1. Cut out the templates and use them to cut out shapes from the relevant coloured felt. Either draw around the templates or pin on to felt to cut out. Picture A.
2. The fox shape should be cut out on a double layer of brown felt so you have 2 fox shapes to use as front and back.
3. Taking one of the brown fox shapes to use as the front, stick on the, black nose and white face shapes. Picture B.
4. Push the LEDs through the brown felt and from the front to the back of the fox. Sticking the adhesive felt as you go.
5. Make sure the positive leg (longest) is pointing up and negative leg is pointing down. Picture C.



Picture A



Picture B



Picture C

6. Use the pliers to bend each LED leg round into a loop. Picture D.



Picture D

7. Knot one end of the conductive thread onto the negative hole on the battery holder. Make sure the knot is pulled very tight.

8. Place the battery holder (with coin) in position as shown in the picture.

- I. Sew the battery holder in place sewing through the hole and felt.
- II. Stitch a running stitch (not to be seen on the front of fabric) down to the negative leg of the right LED first.
- III. Sew the conductive thread around the LED leg and felt making sure it is knotted before stitching to the next negative LED.
- IV. Sew a couple of stitches beyond the last LED leg and then knot tightly. Cut thread. Picture E.



Picture E

9. Knot conductive thread to the positive hole on the battery holder. Stitch as shown in the picture up to where the soft switch is going to be placed (in the window), ending with a longer stitch that will be seen under the hole of the felt pad. Knot and cut thread.



Picture F

10. Stick the soft switch in place over the conductive thread. Sew the conductive thread to lay over the top of the Soft Switch and then running stitch to the positive legs of the LEDs. Sew each LED leg as before finishing with a knot. You should find that when the soft pad is pressed it acts as a switch to turn the fox's eyes on. Picture F.

11. Attach the other brown felt shape to cover the components and become the back of the fox. Add the key ring tag to the top of the fox ready to sew in place. Using a sewing machine (or hand sew), stitch around the shape, just inside the border. Picture G.



Picture G

12. Attach metal key ring.
13. You will see that when the soft pad is pressed it acts as a switch to turn the lights on.



Fox Designed by Nessie for Light Stitches

FOX KEY RING

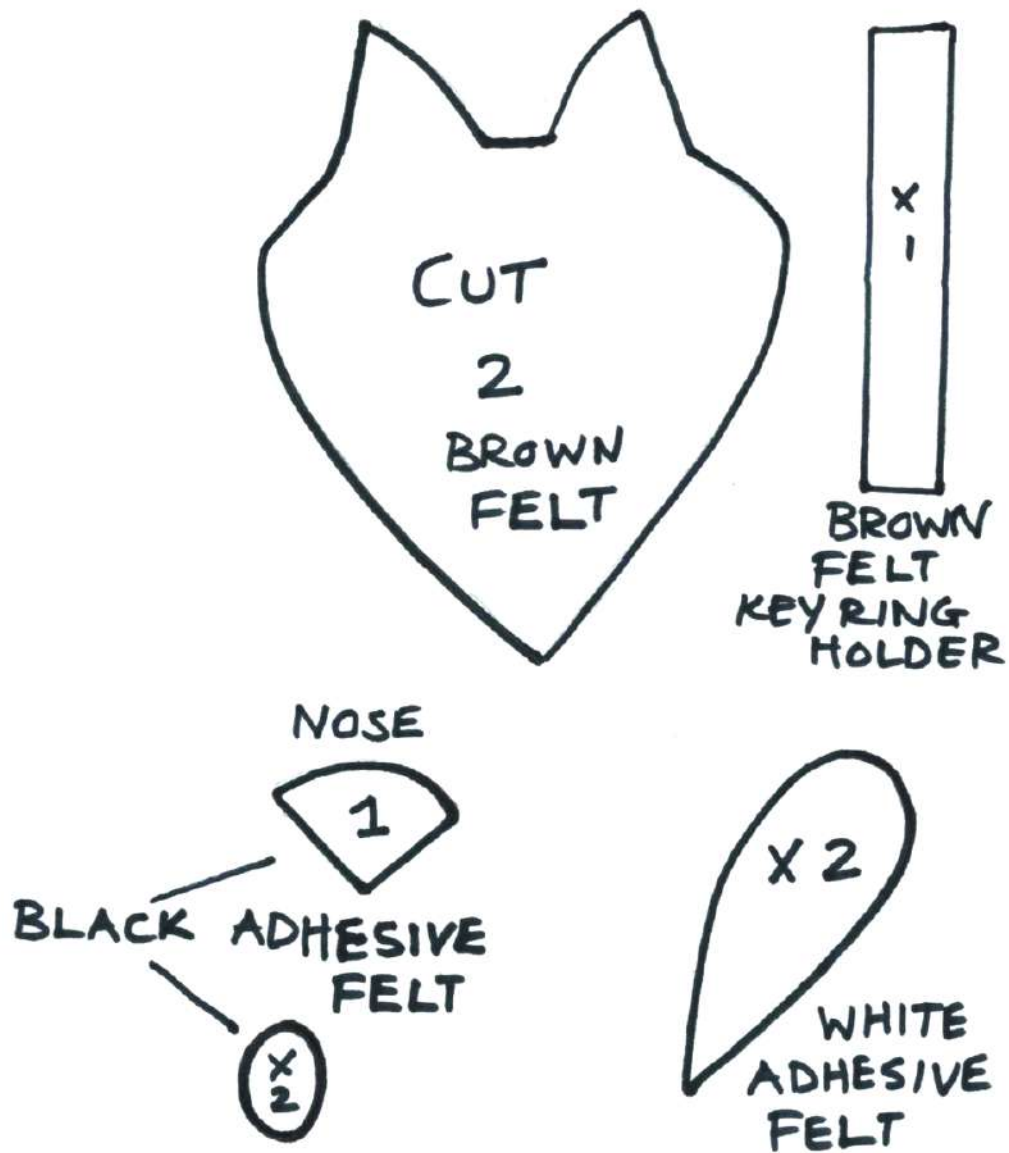
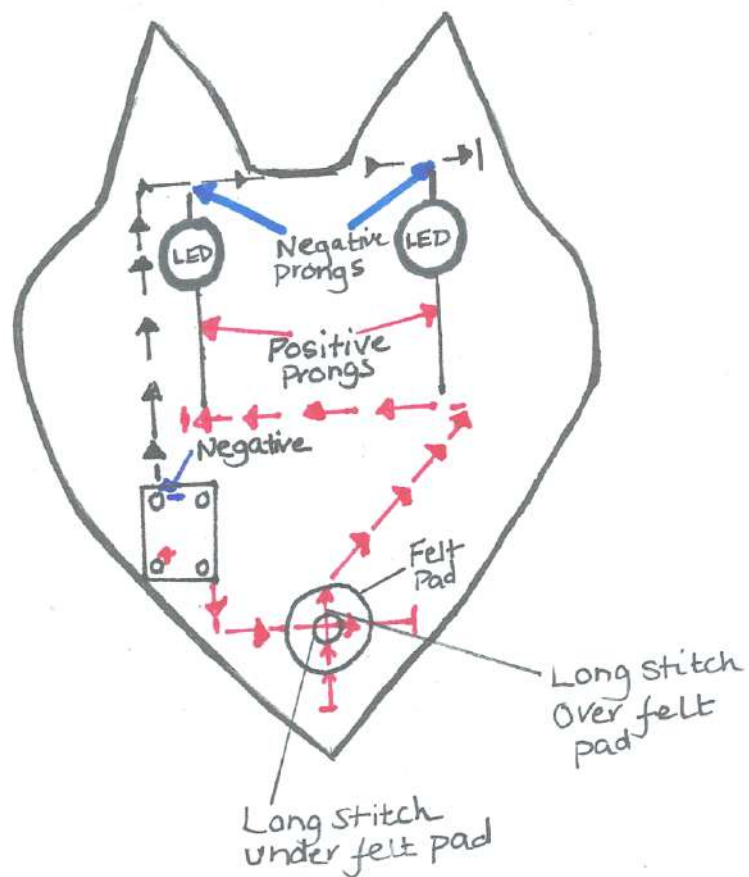


Diagram of the Circuit



Key

- → → → = Positive conductive thread stitching
→ → → → = Negative conductive thread stitching

Smart Phone Case

Kit Contents

- Sewable Battery Holder
- Coin cell battery
- 1 colour changing LED
- Conductive thread
- Metal press stud fastener
- Black felt
- Green and yellow self-adhesive felt

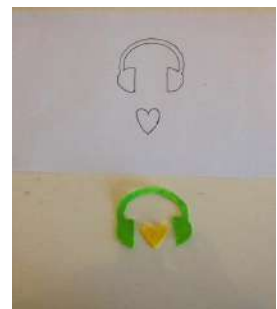


You will also need:

- Sewing needle
- Long pointed pliers
- Scissors
- Sewing machine for pouch border (or can be hand sewn)

Instructions

1. Cut out a design for the front of your pouch using the self-adhesive felt. We have used a simple template for a headphones design, but you can use your imagination to make whatever design you wish. Picture A.
2. Work out how the design will sit correctly on your black felt when the poppers would be joined together and then stick them on. We are using the LED on the heart, so before we stick it on, gently push the legs of the LED through the self-adhesive felt and stick onto the black felt, continuing to push through the material from the front to back. Picture B.



Picture A



Picture B



3. Turn your design over to show the inside of the pouch and where you will be creating your electronic circuit. You can mark where you will be folding it using tailors chalk. Bend each of the legs of the LED in opposite directions. The positive leg is the longest and should be on your right as you look at it. Picture C.



Picture C

4. Then using a pair of small pliers, bend each LED leg round into a loop. Picture D.



Picture D

5. Hand sew using conductive thread from the negative side of the Battery holder, to the negative leg of the LED. (Be careful so your running stitch is not to be seen on the front of the fabric). Secure tightly and cut thread. Picture E



Picture E

6. Then sew from the positive leg of the LED, to the open half of the press stud fastener below (which is on the outer design face) secure tightly and cut thread.

7. Sew from the positive side of the Battery holder to the male part of the press stud above, secure tightly and cut thread. Place the coin battery into the battery holder. Picture F.



Picture F

Picture F

8. Now when the felt is folded inwards and the press studs fastened, this will serve as the connection to make the light on your design turn on. Picture G.
9. Finish off by sewing up the sides with conventional thread using either a sewing machine or hand sew.
10. Completed smart phone case.



Picture G



Bracelet Kit

This project is for a LED bracelet kit just add your very own design.

Materials

- One sewable LED light
- 2 metres conductive thread
- CR1220 coin cell battery
- Sewable Battery Holder
- Felt/adhesive felt
- Metal press stud

Other items needed

- Thread or embroidery thread
- Needle/scissors

Instructions

1. Place the LED light on the felt. Make sure the negative end (-) points to the negative end of the battery holder. Sew down the metal press stud to the positive (+) end of the LED light and cut the conductive thread.
2. Sew the negative end of the circuit sticker to the negative end of the battery holder and cut the conductive thread.
3. Sew the positive end of the battery holder to the metal press stud and fasten off. Insert the battery and connect the press stud together it should light up. Decorate using thread and adhesive and non-adhesive felt. You could use hearts, flowers, clock design. For more ideas check our website or [Pinterest](#) board.



Junior Soft Switch Monster

The junior soft switch kit uses conductive thread, LED lights a battery and a soft switch to enable the light to switch on and off. This versatile kit can be used for many projects including the Light Stitches soft switch monster.

Kit contents

- Felt orange and blue
- Adhesive felt green, black and white
- 2 LED's
- Conductive thread
- CR1220 battery
- Felt pad
- Embroidery thread
- Needle and stuffing.
- Instructions and templates.
- As an alternative you could use a CR2032 battery (not supplied).



Assembly Instructions

1. Cut out the felt pieces and design your monster. Make two small holes in the eye area for the LED's to go through. Picture A.
2. Attach conductive thread to material make a knot. Allow approximately 15mm of smart thread as your first stitch. Make sure this first stitch is longer as this is where the CR1220 battery will sit. Stitch a running stitch to the desired position of the lights. Picture B.
3. You will notice the legs of the LED's are different lengths, the longest leg is the positive and the shortest leg is the negative. Make sure the positive leg (longest leg) of the light is on the left-hand side. Use pliers or scissors to bend each leg round into a loop. Picture C.
4. Stitch up to the positive (longest leg) sew conductive thread around long leg of LED and felt making sure it is tight. Repeat the process for the second LED light. Finish with a knot. Picture D.



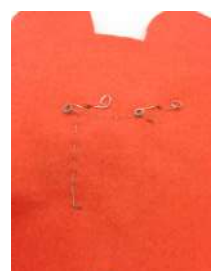
Picture A



Picture B



Picture C



Picture D

5. Make a knot and stitch up to the negative LED (shortest leg). Sew conductive thread around shortest leg of LED making sure each knot is tight before stitching to the next. Now stitch down to the battery position with a running stitch. Picture E.



Picture E

6. Place the + side of the battery on top of the 15mm long stitch, then place right hand thread on top of battery and press down. Lights will start flashing or light up. Picture F.



Picture F

7. Add the felt pad. Sew thread to lay over the top of the felt pad (soft switch) this will act as the stitch and sew a running stitch through the pad to secure it. Finishing with a knot. Picture G.



Picture G

8. Check the LED's are working before sewing up your monster. Add the arms first and then either use a running stitch or a stitch of your choice sew up your monster. Remember to leave a small gap for the stuffing. Picture H.



Picture H

9. Add the stuffing now sew up and complete your monster. Picture I.



Picture I

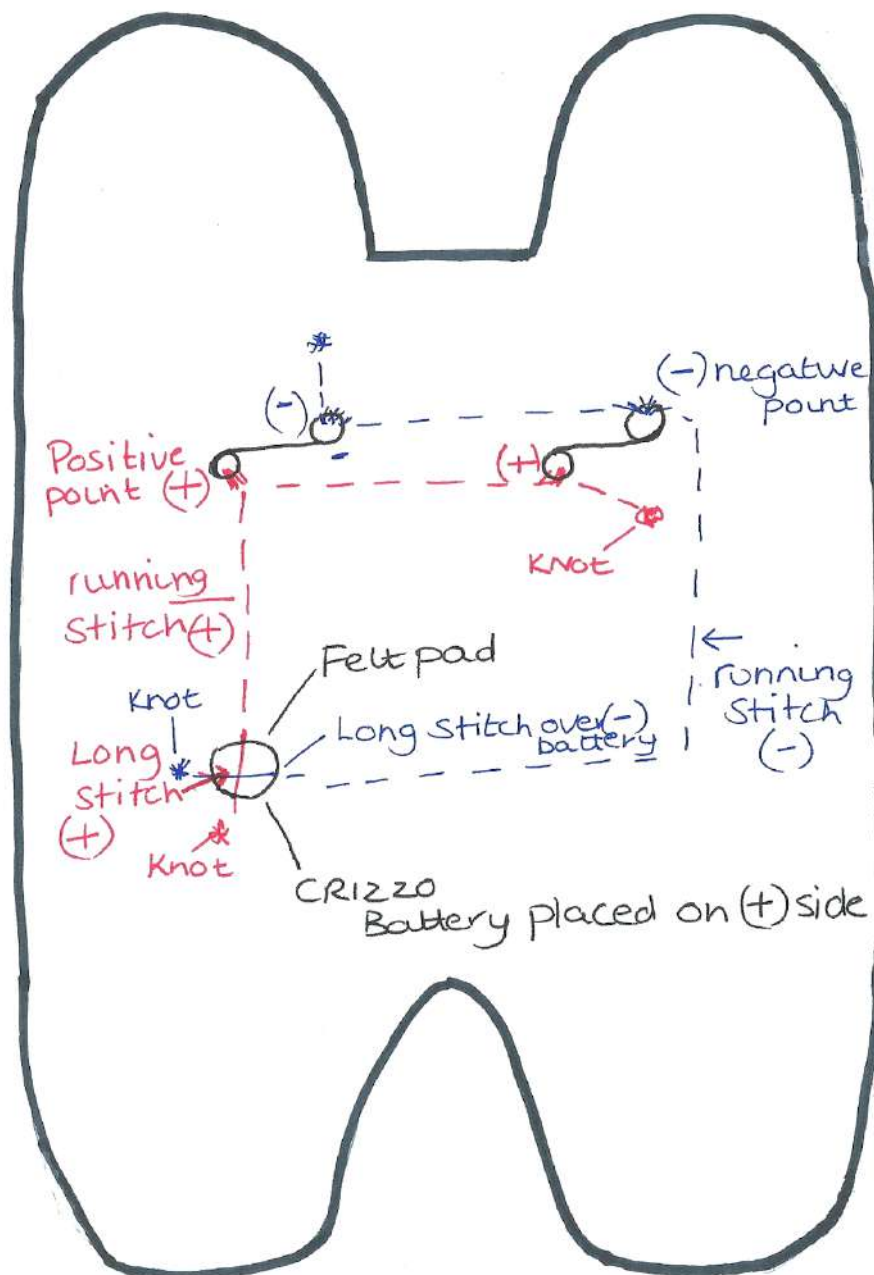
Completed monster – uses two multi coloured slow flashing LED's or two non-flashing orange LED's



Other Ideas – this idea uses one multi coloured slow flashing LED.



The Circuit



Monster Template

