

# How to run a STEAM workshop with Bare Conductive

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Bare Conductive kits are perfect for exploring a range of topics; from creating circuits with our Electric Paint, basic coding with the Touch Board, to making light-up cards - there is an activity to suit every group. In this document, we will cover the basics of how to run a workshop with helpful tips and tricks, so you can focus on the fun stuff.

This document will cover:

1. Deciding on a theme
2. Choosing the right product for your group
3. Creating a workshop plan





# 1. Deciding on a theme

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The Touch Board, Electric Paint and Printed Sensors can be combined in a number of ways to explore different ideas – popular themes include:

- Electricity and circuits
- Sensors and alarms
- Music/Audio
- Interactive surfaces
- Coding

The list of workshop possibilities is endless, however to get you started, here are a few cool ideas of how you can integrate STEAM into a variety of different subjects using Bare Conductive products:

Subject area	Workshop Theme	Description	Age group
<b>Science</b>	Exploring circuits	Create series and parallel circuits using Electric Paint and some simple components	8 - 16
	Conductivity	Explore the principles of conductivity with Electric Paint	8 - 16
	Resistance	Investigate what factors can affect resistance	11 - 19
	Change and current	Explore charge and current, describing how Electric Paint is able to conduct electricity	11 - 19
<b>Music &amp; Drama</b>	Electric Paint Orchestra	Use the Touch Board with MIDI and printed sensors to create instruments that make up an orchestra	8 - 19
	Touch DJ Deck	MP3 sounds to the Touch Board electrodes, triggering with printed sensors	13 - 19
	Touch Boom-box	Create a cardboard Boom-box and trigger MP3 tracks with Electric Paint buttons	13 - 19
	Sound effects panel and props	Use the Touch Board to build a sound effect panel for your next show or bring your props to life with sound	13 - 19
	DIY instrument	Use the Touch Board and MIDI to build an instrument out of unusual materials	13 - 19



Subject area	Workshop Theme	Description	Age group
<b>Art &amp; Design Technology</b>	Light up / 3D cards or interactive paintings and sculptures	Create novelty, 3D or pop up cards that light up, using electric paint and LEDs Make you picture (or sculpture) say a thousand words with Touch Board and Printed Sensors and or Electric Paint	8 - 19
	Lamp design	Design and build a working lamp using Electric Paint and the Light Up Board (alternatively use our Electric Paint Lamp Kit)	11 - 19
<b>Electronics, IT &amp; Gaming</b>	Alarms	Detect an intruder with Touch Board and Printed Sensors or Electric Paint	8 - 16
	Touch Game Controller	Redesign your game controller with Touch Board and Electric Paint	11 - 19
	Interactive board games	Bring board games to life with sound or light, using Touch Board, LEDs and Electric paint	11 - 19
	Coding basics	Learn the basics of coding with Touch Board and Arduino	14 - 19
<b>Languages</b>	Talking items	Using Touch Board and Electric Paint, you can learn the names of items by touching them	11 - 15
<b>Humanities</b>	Touch talk time-lines	Create a time-line that talks, using Touch Board and Electric Paint or Printed Sensors	11 - 19
	Interactive maps	Make maps interactive with Touch Board and Electric Paint or Printed Sensors	11 - 19
<b>Sports Science</b>	Technology in sports	Explore how technology can be used to improve sports using Touch Board	13 - 19
	Beep test sensors	Use Touch Board and Printed Sensors to create touch pads that alert when tapped during the beep test	13 - 19
	Monitoring wellness	Investigate how wellness can be monitored using Touch Board Workshop Pack and Printed Sensors	15 - 19
<b>Home Economics</b>	Interactive wearables	Add light and sound to fabrics, using Touch Board, Electric Paint or conductive thread and Chibitronics LEDs	15 - 19



## 2. Choosing the product for your group

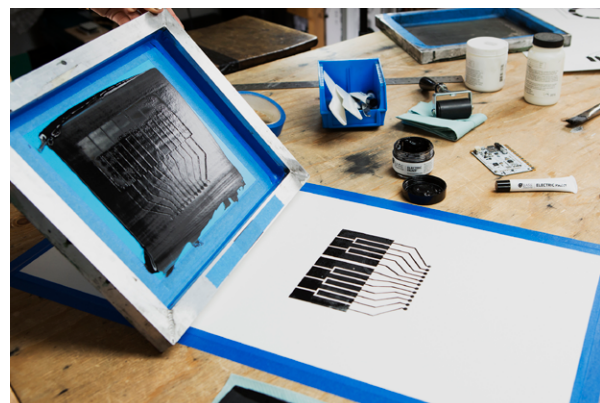
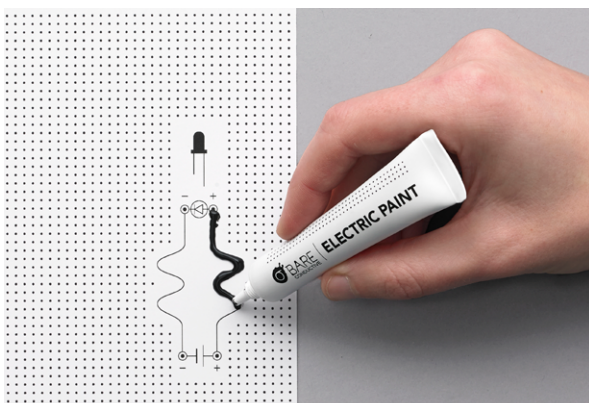
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### Electric Paint

Workshops using Electric Paint are perfect short activities for younger children. The paint is conductive, which means that it conducts electricity when connected to a power source, like a battery. It is similar to other conductors, except that it has a relatively high resistance, so while you can't use it to replace wires, you can still create small circuits with it. So with only a few simple components, such as a battery and some LEDs, participants can design their own electric circuits and light-up cards.

Our Electric Paint is water soluble and non-toxic, it can be used just like normal paint; apply straight from the 10ml tube, or alternatively pick the 50ml jar for freehand drawing with a brush, stencilling with a sponge or screen-printing.

If Electric Paint isn't practical for your session or workshop, consider using our Printed Sensors. They are ready-to-use, pre-printed touch and distance sensors that can be cut and customized to suit your project.





## Touch Board

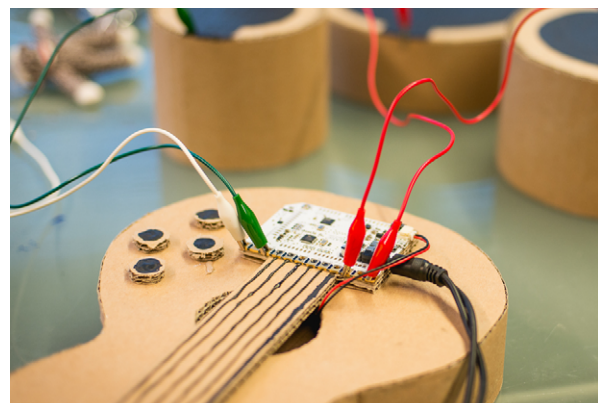
Touch Board projects tend to require more advanced skills, so are better suited to older children and teenagers. The Touch Board gives you the power to create capacitive sensors – turning touch into sound, light or another output, making any surface interactive. Outputs can be triggered through a variety of conductive materials, for example Electric Paint, which is activated by touch or proximity. This gives you the opportunity to be as creative as you like with the design of your sensors.

The Touch Board has a multitude of applications, for example, playing up to 12 MP3 tracks, easily uploaded to a microSD card, or using it as a MIDI instrument, turning any surface into a musical instrument – there is plenty to keep curious minds entertained.

The Touch Board is also a great opportunity to learn some coding basics, using the Arduino platform. With step-by-step guidance from our online tutorials and access to an extensive code library, even total beginners can get started coding.

If you are looking to use multiple Touch Boards for your activity, the Workshop Pack is a great place to start – it contains everything needed for five groups to create interactive projects.

Some other products that work well in interactive projects include [Chibitronics LED stickers](#) and [Micro:bit](#), a versatile, programmable micro-computer made for students.





## 4. Creating a workshop plan

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Regardless of group size, age or ability, a good workshop is made up of four fundamental parts that you should keep in mind –

### 1. Preparation

Prep as much as possible ahead of time, for example by making templates, cutting fiddly things out and bundling equipment on work surfaces.

### 2. Introduction

Provide project context and the plan for the session, describe aims and objectives, establish existing knowledge and explain key aspects of the activity.

### 3. Activity

Provide details and brief of what is expected in the activity. Facilitate and support hands-on exercise. Time yourself creating a demo, and assume participants will take double the time.

### 4. Review

Share work, reflect on achievement, review aims /objectives and check understanding.

By following this format, adjusting timings to suit the activity, you can be sure to achieve the aims of your workshop. Also, don't underestimate the importance of preparation; it really improves the chances of the session running smoothly.





## Workshop Hacks

Tips and tricks to remember to ensure your workshop runs smoothly!

Test all of the equipment, have a few spares where possible.

Allocate groups (preferably three people per group) and arrange seating.

Lay out correct equipment on workspaces to save time and pre-program Touch Boards where applicable (e.g. with MIDI instrument).

Practice sheets are useful for getting to grips with handling the Electric Paint tube. A few parallel lines printed onto paper are enough for participants to get an idea of how hard to squeeze for even distribution (this will improve drying time).

Create a demo version of the final outcome so participants know what they're creating.

For younger or less able children, templates that they can paint over are worth making in advance.

Level ladder sheets are a useful way to present a project's success criteria e.g. a basic project will include these features, an intermediate will include these features and an advanced project will include these features. Students can work down the ladder systematically, ticking off features and upgrading their project as much as possible in the time allocated.

Factor in hand washing if using Electric Paint. A few packs of baby wipes dotted around the room work well.

**For more tutorials or inspiration from community projects, head over to the MAKE or BLOG section of our website.**



**bareconductive.com**

Facilitated a great workshop or session? We would love to see!  
Share it with us by tagging @BareConductive or #BareConductive in your social media posts.