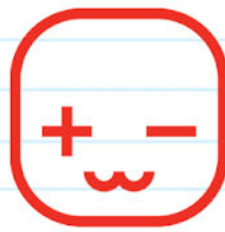


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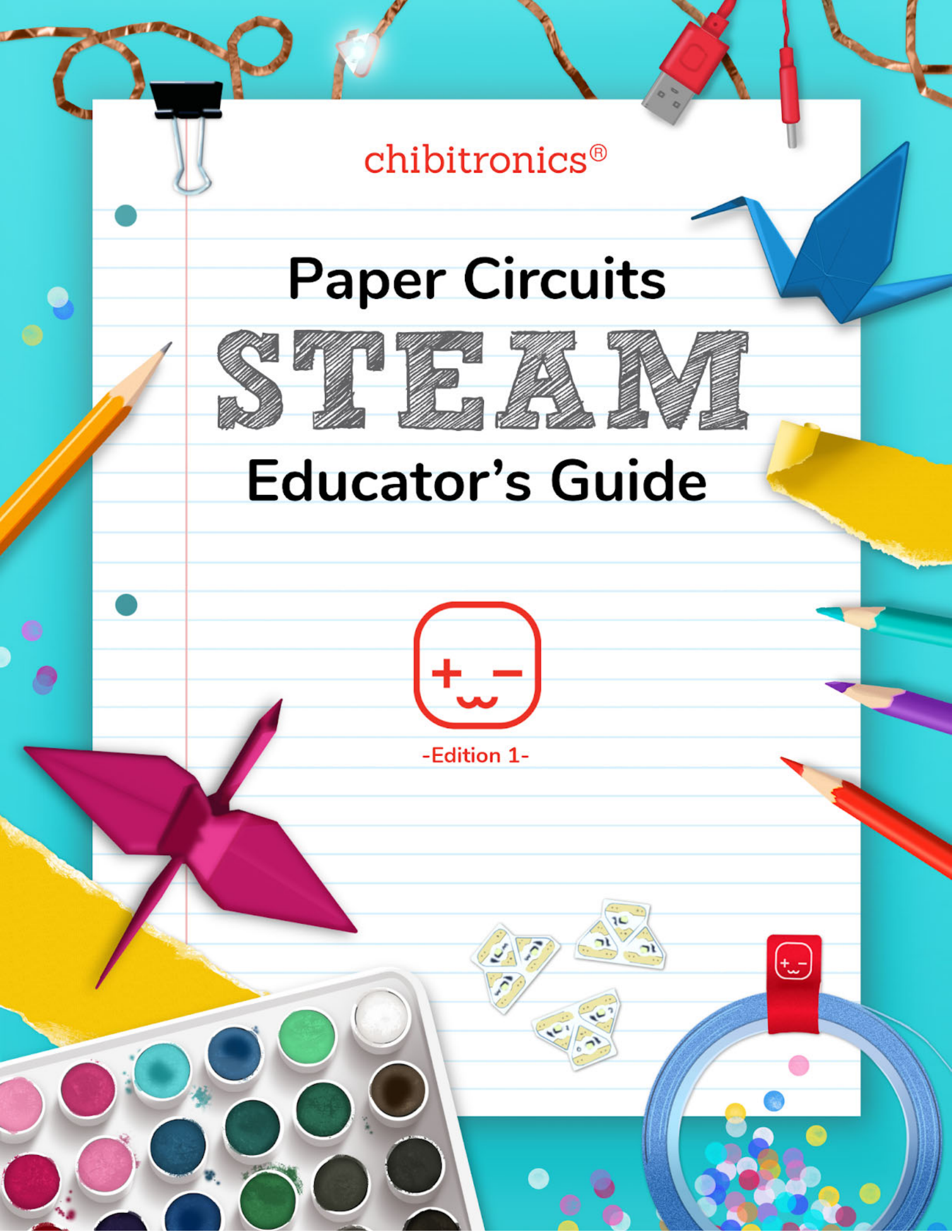
# Paper Circuits

# STEAM

## Educator's Guide



-Edition 1-



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# Welcome to this Guide!

**Dear Teacher,**

We write to you as the mentor to young learners that you are... as well as a creative learner yourself! Thanks for joining us to explore and share the magical world of STEAM (Science, Technology, Engineering, and Math, blended with Art) through paper circuits.

Paper circuits use friendly art activities and familiar craft materials to introduce new and challenging (but powerful!) concepts like circuits and code.

We believe that the most effective way to learn and teach paper circuits is to put yourself in your students' shoes, play around and make circuit art of your own. On this journey you will encounter both "aha" moments and "huh?" moments, and it will take courage to dive into the unknown. But we assure you it's worth it!

Here's a secret: this journey isn't really about electronics or code, or even papercraft. **It's about creativity, curiosity, self-expression, and being willing to make mistakes along the way** to your own light bulb moments:



*"I love the light bulb moment for students or teachers in workshops, especially when they are or were like me — intimidated and then empowered. It makes me feel smart and powerful and accomplished and successful when I make the light light up. In fact, that is my FAVORITE part of every workshop - when people exclaim 'Oh! I did it!' I think doing this work is very empowering for girls and those not as confident about science."*

-Molly Adams, high school English teacher

Welcome to this adventure and happy making!

**-The Chibitronics Team**

## How to Use this Guide

This guide begins with an overview and history of paper circuits, as well as an introduction to materials and techniques, suggested learning standards, and elaboration upon the *why* behind teaching with paper circuitry.

Next, Part 1 (*Circuit Sticker Sketchbook*) and Part 2 (*Love to Code*) present lesson sequences that can be used in the classroom. Be sure to also check out the featured artists, educators, and projects throughout the guide!

Finally, templates, assessment tools, and additional resources may be found in the appendices.



Each lesson includes a teacher preparation section, which comes with the recommendation to craft the circuits yourself. The circuits you build will give you insights about how to support your students' paper circuit explorations, while serving as class demos that you might reuse in future lessons.

In order to help you make decisions about setup, materials, and pacing that will support all of your students, we recommend trying at least one circuit in each of the units you plan to teach as part of your preparation; you know your students and context best. We've provided guidelines to help you get started, but you can feel free to color outside the lines!

