

Preface

“Interdisciplinary projects in which the playful inclinations of children are leveraged to construct meaning.”

This was one of the many sentences I highlighted in my dog-eared copy of *Invent to Learn: Making, Tinkering, and Engineering* when I read it back in 2016, saying “Yes! Yes! Yes!” to myself all the way through. It is not an overstatement to say that this book and the constructionist learning theory heavily influenced the creation of the MakeCode product at Microsoft in 2017. We wanted to create not just another code editor, but a tool that could combine the magic of making with the power of code in ways that lent themselves to self-expression and creativity. So, it is truly a crowning moment for us to now be featured in the latest version of *The Invent to Learn Guide to the micro:bit!*

I first knew of Pauline as @4pip on Twitter and immediately started following her and her amazing project posts. Then at a Microsoft Educator conference in Singapore, I was walking through the poster sessions, and saw a lady at the end of the row with flashy neopixel light shoes and micro:bit bracelets on her arms... it was Pauline, the micro:bit Queen! One of the many things I admire about Pauline is her ability to make things simple and delightful! Learning computer science doesn't have to be typing commands in a console window, it can be creating a Unicorn Greeting Card or a Wearable Flower LED badge.

Peter was introduced to me by a Microsoft colleague saying, “You need to meet this crazy Dutch guy! He's doing incredible things with the micro:bit,” and sure enough, he was! I remember Peter showing me a video of his daughter who had attached a micro:bit to her field hockey stick and was using it to count the number of times she bounced her ball on the stick to automate her practice time. And since then, he's contributed many different projects to the MakeCode site including the ever-popular Milk Carton Robots.

Just as revolutionary as the Arduino was for democratizing physical computing in 2005, the micro:bit has brought it a step further and opened doors to classrooms and children around the world to play, tinker and make with hardware, electronics and code. And it's also opened doors to computing for many students who never saw themselves as technologists. The approach of combining a more holistic view of computer science—encompassing both hardware and software, and the pedagogy of “learning with your hands” has broadened the appeal of CS to many under-represented student populations. In a national survey in the UK, the BBC found a 70% increase in interest among girls to continue studying computing after having worked with the micro:bit. The popularity of the micro:bit is a testament to its ability to engage learners of all types—the micro:bit is now available in over 70 countries around the world with millions of students creating and coding with it every month from Sri Lanka to Uruguay.

The projects created by Pauline and Peter make *The Invent to Learn Guide to the micro:bit* an invaluable resource for educators, students, parents, or anyone who wants to learn more about the creative possibilities of the micro:bit.

Happy Making and Coding!

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