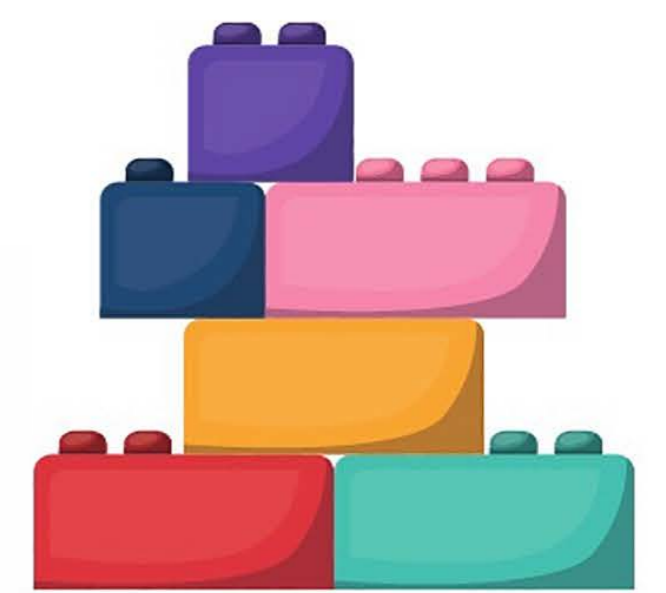# TECHNOLOGIES IN STEM EDUCATION

PROJECTS INVOLVING CODING, ICT, BIG DATA, AI, VR, NETWORK SECURITY

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UNLOCKING IMAGINATIONS AND DEVELOPING COMPUTATIONAL THINKING SKILLS THROUGH PRIMARY SCIENCE!

To prepare students for the future, educators must design science lessons that embed digital technologies in new and innovative ways. This project used Bee-Bots, ScratchJr, LegoWeDo and BBC Micro: bits to create collaborative STEM learning experiences for students from junior infants to sixth class (6 - 13 years old). Lessons in this project can be localised into different curricula throughout the world.

The <u>first stage</u> of this project incorporated Bee-Bots into science lessons with infant classes (4 - 6 years old). This project demonstrated how primary science can be enhanced by introducing concepts of computational thinking through the context of play.

The <u>second stage</u> integrated ScratchJr into science lessons with 1st/2nd class (6 - 9 years old). Students created streets based on their local town and programmed pathways on their iPads.

The <u>third stage</u> of this project integrates LegoWeDo into science lessons wiith 3rd/4th class (6 - 9 years old). Students created and programmed cars with motors and lego using the engineering design process.

The <u>fourth stage</u> explored the use of Micro: bit in science lessons with 5th/6th class (10 - 13 years olds). Using this beginner-friendly code editor, pupils designed and created programmes which were then displayed using LEDs on their micro:bits.
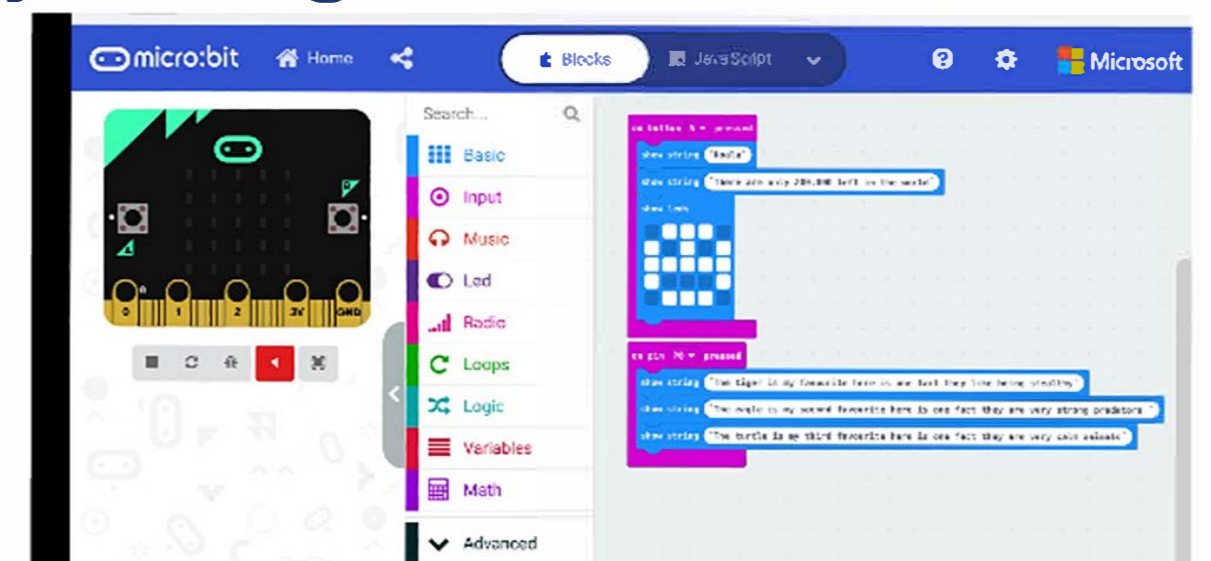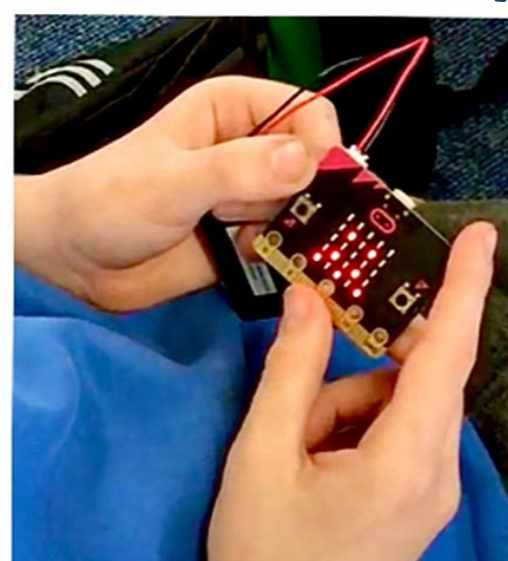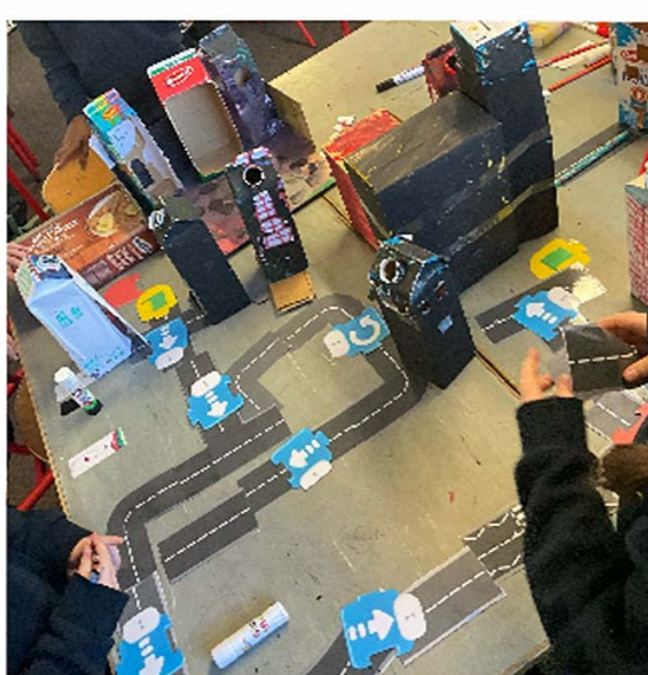
Through the meaningful use of digital tools, primary schools have the power to support and enhance children's computational thinking while fostering a lifelong passion for STEM education.