

Micro:bit Step Counters

Nurturing Design and Technology at Great Abington Primary

Nestled a few miles outside Cambridge, Great Abington Primary School sits with one hundred and thirty-four pupils spread across five classes, including mixed-age groups and a Year 6 class, the school embraces diversity and individuality in its students. Notably, 20% of pupils receive the pupil premium grant, and a similar percentage are identified as having special educational needs and disabilities (SEND).



Design and Technology Curriculum

Approximately three years ago, Great Abington Primary School joined the Design & Technology Association. Recognising the need for a more structured approach to Design and Technology education, the school sought to revamp its curriculum to align with D&T principles. Collaborating closely with the D&T Association, the school undertook a comprehensive overhaul, redefining its D&T curriculum to offer a range of projects catering to students' varied interests and abilities.

A Paradigm Shift in D&T Education

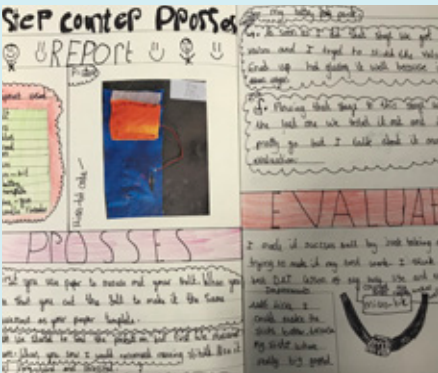
One of the unique challenges faced by Great Abington, owing to its mixed-age classes, is the inability to repeat projects annually. To address this, the school devised a two-year cycle for its mixed-age classes, ensuring a progression of skills and exposure to different project types. Each project is meticulously planned, with clear identification of 'Product, User, and Purpose', along with ample opportunities for Investigation, Focused Tasks, and Design, Make, and Evaluate Activities (DMEAs).

Central to the school's approach is the adoption of "Projects on a Page" methodology, aimed at bolstering teachers' knowledge and confidence in delivering D&T projects. This framework serves as a blueprint for more detailed medium-term planning, fostering consistency and coherence in D&T education.

Programming and Control

Identifying programming and control as a pivotal area for integration, Great Abington sought guidance from D&T Association Curriculum Consultant, Lol Conway. After careful deliberation, micro:bits emerged as the preferred platform over Crumble, primarily due to its suitability for the school's context and the availability of free kits from the BBC.

In the capable hands of a mixed Year 4 and Year 5 class, the journey into the realm of micro:bits began. With twenty Year 5s and nine Year 4s, the class embarked on an ambitious project combining textiles with programming and control: crafting a micro:bit step counter with a fabric ankle strap. Despite initial apprehensions stemming from unfamiliarity with micro:bits, the project ignited a wave of excitement and curiosity among students and teachers.



Concept to Creation

The project unfolded through a series of meticulously planned stages, each fostering creativity and hands-on learning:

Investigation and Focused Tasks: Students delved into wearable technology, examining similar products such as step counters and fitness trackers. Drawing inspiration from renowned designer Gadi Amit, the class honed their programming skills using resources provided by the BBC. Through experimentation and iterative refinement, students fine-tuned their micro:bit coding to accurately track steps.

Sewing Skills and Planning: Building on prior knowledge from a textiles-based project, students refreshed their sewing skills, mastering techniques like threading needles and stitching.

Armed with design criteria and ankle measurements, students meticulously planned their fabric strap, exploring materials and fastening options.

With the support of additional adults, including PGCE students, the class immersed themselves in the making stage. From resizing paper templates to troubleshooting stiff Velcro, students navigated challenges with resilience and creativity.

The highlight? Testing their creations in the school hall, ensuring functionality and precision.

Evaluation and Reflection: Following the completion of their step counters, students evaluated their products against design criteria, documenting their design process and identifying areas for improvement.

Through this reflective exercise, students gained invaluable insights into the iterative nature of design and the importance of resilience in overcoming obstacles.

Looking Ahead

With plans to revisit the project in two years, the school aims to enhance student autonomy by incorporating more opportunities for choice within the project.

Moreover, the integration of micro:bits extends beyond D&T education, with plans to leverage its potential in computing and science curriculums.

Exciting initiatives such as the micro:bit Playground survey promise to further enrich students' learning experiences, fostering a culture of innovation and exploration.

Links



micro:bit
microbit.org



Projects on a Page
designtechnology.org.uk/
resource-shop/projects-
on-a-page-full-pack-of-
23-planners-two-new-
for-2023