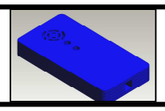


Curriculum Framework Task

Support Centre Name
East Midlands DD&T Centre
Lincolnshire EiSS support at Ideas In2 Action Design Consultancy Metheringham

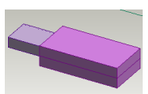
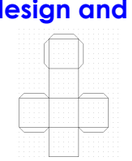
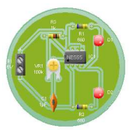
Activity title
Integrated EiSS CAD/CAM Project – USB powered homework timer

School Details
William Farr CoE School
Welton
Lincolnshire

Teaching team for this project
Ben Price (Head of Dept)
John Clarke (D&T Technician)
Mike Grimsley (ECT/Graphics)

- **Starting Points**

Students will already have initial experience of using PCB Wizard, Techsoft 2D design and ProDesktop.

- **Project Summary**

This project is about designing and making a homework timer that after a preset period of time alerts the student that s/he has been working long enough by playing a tune and displaying an array of LEDs.
Aimed at the last project in KS3 before making their KS4 options

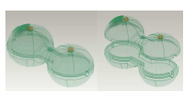
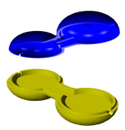
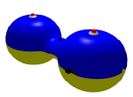
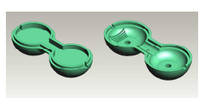
- **Knowledge, Skill and Understanding**

At Key Stage 3 pupils have two, one hour lessons where they rotate through Electronics, Food, Graphics, Resistant Materials and Textiles.
AT KS4 D&T is optional and students have the choice of Systems and Control Technology with Electronics, Food Technology, Graphic Products, Resistant Materials Technology and Textiles Technology. Pupils have two, **one hour lessons one week, and three the next. At A-Level students opt for Product Design (3D), Systems and Control with Electronics, Art Textiles and Art Graphic Design.**

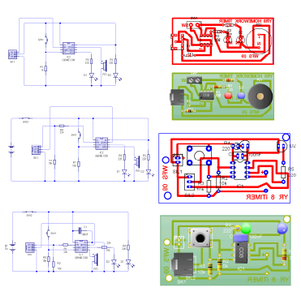
- **Activity context**

This context of this activity has developed as a feasibility case-study which evolved from the East Midlands Integrated EiSS CAD/CAM project. The teaching team wished to replace one of the existing KS3 projects with one that had wider opportunities to develop student designs and make capability into holistic product design.

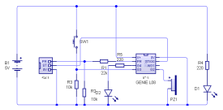
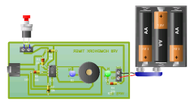
- **Use of digital tools**

Building on their previous experience students model their circuit and develop their product housing

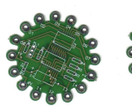


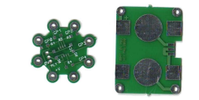
- **Stimulus that engages the pupils**

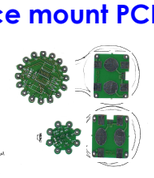
The on-screen simulation to describe possible outcomes

Exploring the use of 3D printing for the product housing

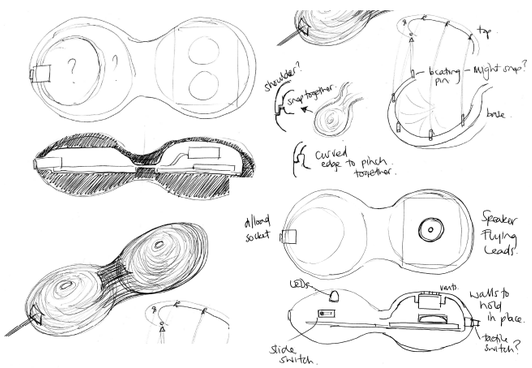


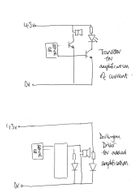



Exploring the possibility of surface mount PCB



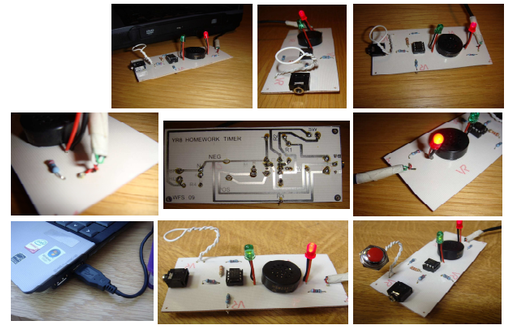

- **Use of Traditional Design tools**





At the start of the project students are encouraged to explore their design ideas using traditional ideas sketching that builds on their previous knowledge and understanding learnt earlier in KS3.

- **Creativity**

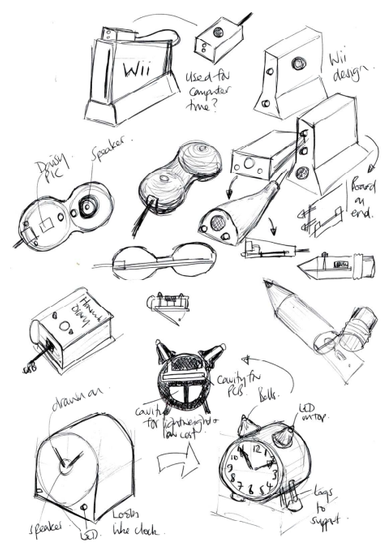


Some of the outcomes from the first group of students at this time the 3D printer was not available for the project case.

Constrained by the shape of the PCB !!!!

We can now solve this!!!

- **Design Decisions**



The students are encouraged to be open and free with their thinking. They are taught t0 annotate their design sketches and to engage in discussion with their teacher as to the route their product development will take