

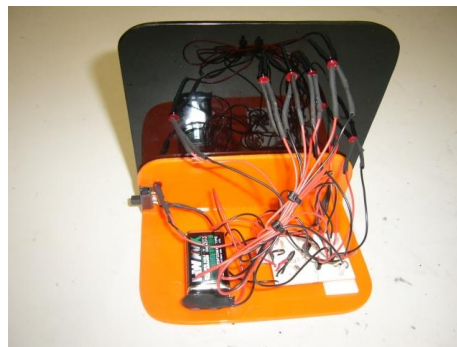
GCSE ELECTRONIC PRODUCTS

Year 10

Term One

Flashing Night Light

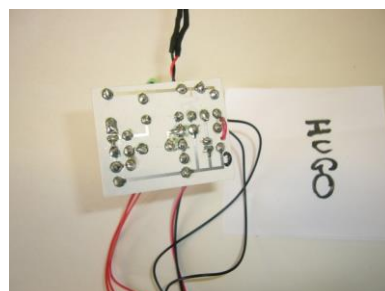
- Printed Circuit Board Design CAD development work.
- Product casing CAD development work.
- Introduction to Transistors, resistors, light dependent resistors, light emitting diodes, voltage dividers, voltage divider calculations, power supplies, strain relief, use of pcb pillars, use of heat shrink, ,safe use of pcb drills.
- Correct and safe soldering skills, use of sanders to finish acrylic edges, use of line bender to shape acrylic, use of buffers to polish acrylic, use of solvents to join acrylic.
- Research collection, writing specifications, design drawing, evaluations.



Term Two

Egg Timer

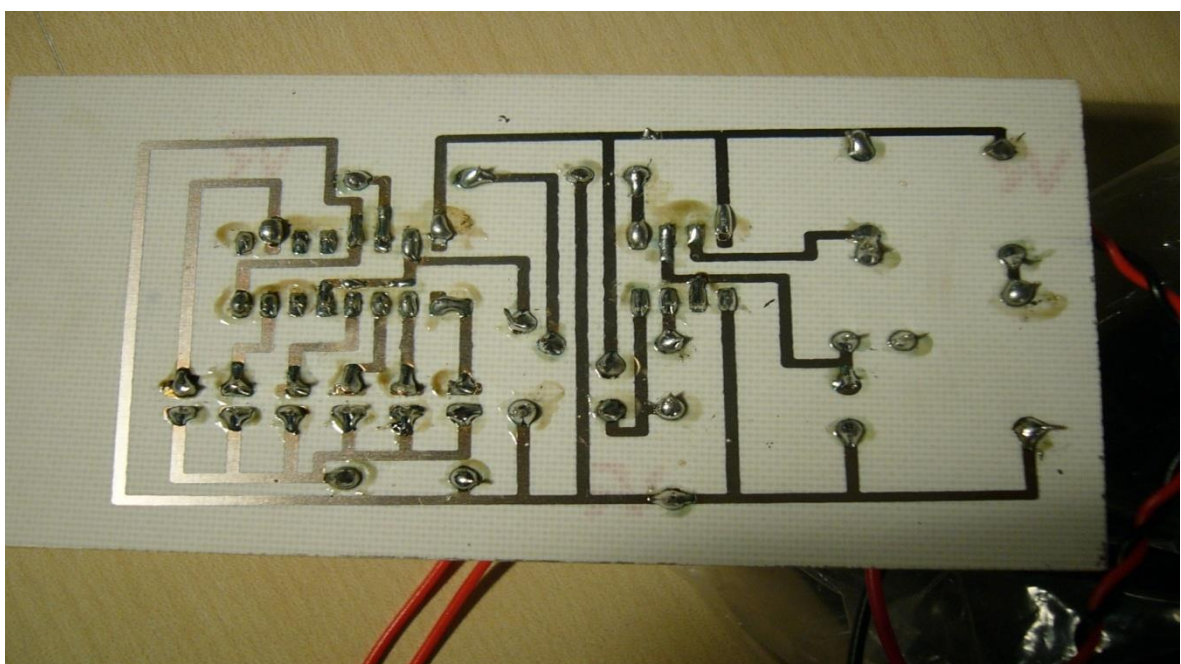
- More advanced Printed Circuit Board Design and CAD development work.
- Product casing CAD development work to make a 3-D Casing.
- Transistors as Darlington Pairs, variable resistors, switch types and use of DPDT to perform multiple functions, skilled soldering of DPDT switches.
- Use of capacitors, light emitting diodes, RC timing networks, RC timing calculations.
- Use of heat shrink, safe use of pcb drills, correct and safe soldering skills, use of sanders to finish acrylic edges, use of buffers to polish acrylic, use of solvents to join acrylic, use of drills and taps to cut screw threads to secure base on casings.
- Research collection, writing specifications, design drawing, evaluations.



Term Three

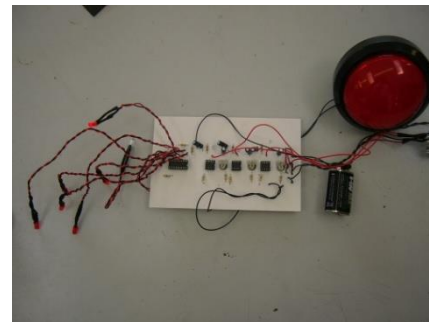
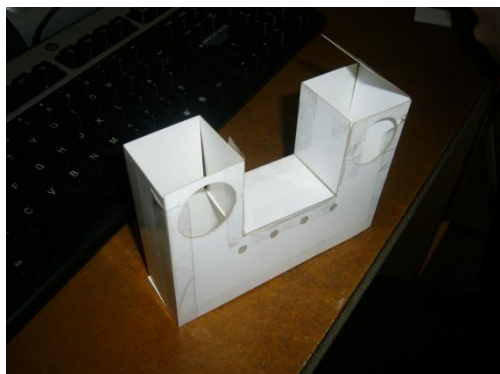
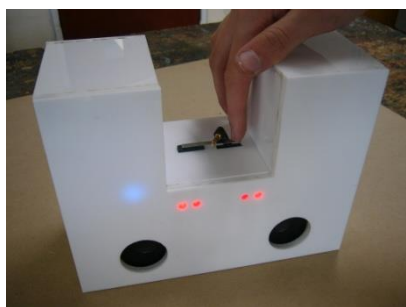
Electronic Dice

- Introduction to microchips, IC pin outs, use of IC sockets.
- Advanced Printed Circuit Board development work using IC's and components as bridges.
- CAD for casing development using laser plywood, specific IC work including the 555 Astable, 555 monostable, 4026 7 Segment display driver, 4017 decade counter, 741 Op Amp, Relays.
- Advanced soldering of circuits with IC's



Year 11 – Major Project (60% of GCSE final grade)

Chosen from a range of project areas supplied by AQA pupils to research and then design and make a complete electronic product. Developing both the circuit board and the casing using test circuits and modelling. The record of the product development to be kept in the form of a Design Folder.



In order to support pupil progress – encourage attendance at after school and lunchtime support sessions. Encourage use of revision guide. Useful websites include AQA, Technologiststudent, GCSE Bitesize.