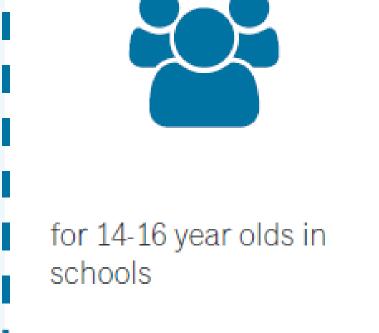
# BTEC Tech Award in Engineering

Your Key Stage 4 BTEC for schools

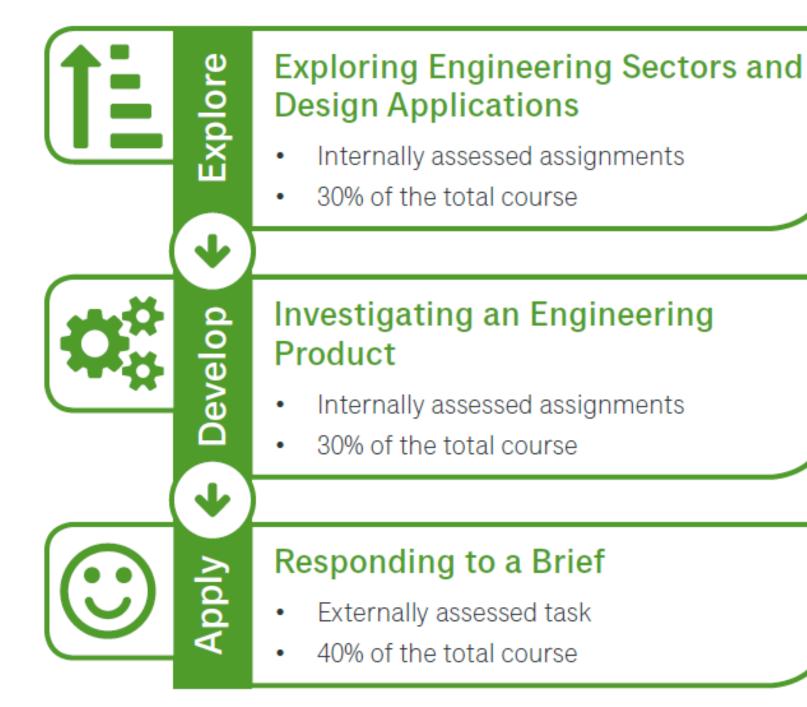


### BTEC Tech Awards have been specifically designed:





to give students a hands-on taste of the sector, and the skills and confidence to take their next steps



## Explore



### Component 1

### Exploring Engineering Sectors and Design Applications

Aim: get to know industry sectors and how they work together to solve real-life problems.

Assessment: internally assessed assignments

Weighting: 30% of total course

### During Component 1, your students will:

- explore the different sectors, products and interconnections within the industry
- investigate what various engineering organisations and functions do, in addition to potential career paths
- discover the engineering design and manufacture processes.

#### **Component 1A**

In this unit pupils are asked to independently investigate different products and corporations.

All work is to be recorded in a small portfolio that evidences their findings.

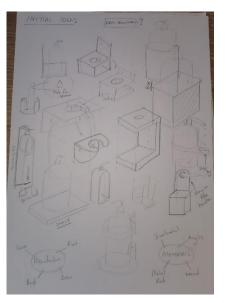
#### **Component 1B**

In this unit pupils are given a design problem by a client. They have to interview, research, design, develop, model and present their designs solution.

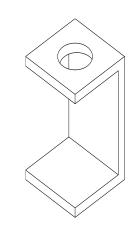
All work will be evidenced in a small portfolio that shows the pupils journey.

They will be sketching, modelling, learning 2D and 3D CAD techniques as well as recording all work in a written document.

#### **Component 1B: Example Work**





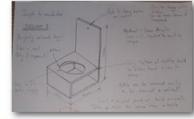


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Anylic ta a wlatively low cost material. Costing approximately (12 - 115 per 3mm sheet (1000mm x 600mm). This one sheet coads cut several of the to lidencast, however the thrat cost work has however to the final weights be set owingstand and threads. (The designs use a single pice on dreadpace script ((b) endergin 1) is us all adve fina close and accurate besetilation of the dragons when laser cutting. This will again large cost since by avvig on acrop materials.

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AREAS FOR DEVELOPMENT

Dimension: These are vital to me making a working product. I will have to model the design and check it against the battle.

Ranging hole: One hole may hold the product superbly, however there is the chance it could owing. Screws don want to be tightened too much as they may cause the acrylic to crade.

Connect: The client has raitely in mind and wan lift like naunded connectors all the 90 degree angles to avoid cutting. **Scaliny**: If the both topoles where partpring get the retaining wall will reset to be increased in height. **Scylic:** Although shyle wan't important to the client, the more minimalist and clean loaking I can keep the product

the better. Less convers and a deek shape keep the product cost down, and mean for a cleaner more hygienic product.

Durability: The product should easily do the job it is required, however should the load of the loads and pumping action be too much for the acrylic, I will need to think about shengthening the weak points effectively.

Summary 1 have critically analyzed design idea 1.1 already have some thoughts about possible developments. Some will de titlely need to be wanted on idmensions, others may need that and error test it likelite of relativise deal's.





### Component 2

### Investigating an Engineering Product

Aim: explore the types of materials, components and processes used to make products, then reproduce and test a product.

Assessment: internally assessed assignments

Weighting: 30% of total course

### During Component 2, your students will:

- learn why engineers choose certain materials and components to make products
- investigate how products are made
- identify best practice when it comes to safety and risk management
- develop research, observation, recording, interpretation and measuring skills
- put what they've learned into practice by safely planning, reproducing and testing an engineered product.

### **Component 2A**

In this unit pupils are asked to independently investigate different materials and processes. They do this by analysing a product (such as a bicycle brake) thoroughly.

All work is to be evidenced in a small portfolio that covers their findings.

#### **Component 2B**

In this unit pupils are given a small product to disassemble and rebuild.

They must record and describe all the component parts and keep a small portfolio evidencing their work.

#### **Component 2C**

In this unit pupils are asked to independently manufacture a component in the workshop.

They again must keep evidence of all work and create a plan of how to complete the task.

#### **Component 2C: Example Work**

	NUMBERING: COMPONENT 20					
	OSUCTION FLAMMING					
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# Apply



### **Component 3**

### Responding to an Engineering Brief

Aim: provide solutions to real-life problems by creating their own engineered product.

Assessment: externally assessed task, where students create an engineered product based on a brief.

Weighting: 40% of total course

To achieve this aim, your students will:

- build on what they've learned in Components 1 and 2
- identify the problem, develop a hypothesis and investigate possible solutions
- create a prototype that meets the brief
- record, analyse and evaluate data and outcomes, and reflect on how the product meets the brief.

### Where can my students progress to?



### **Career Opportunities**

Electronics Manufacturing Welding Agri-food Telecommunications Renewable energy Space Low carbon Automotive Bioscience Welding

The list really is endless

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Formula 4



CALL DUTY









