

Step up to BTEC L3 Engineering

This is a menu of tasks to help you get ready to study Engineering at BTEC Level 3. Try to choose a 'balanced diet' of activities each week to ensure variety in your learning. Keep your completed work organised in a folder so that you can submit your transition work during your first Engineering lesson.



Short Video Clips (less than 10 minutes)

Each of these clips offers context for the course. Write down any key details they reveal or inferences you can make from them. List questions the clips raise that you would like to understand more about?

Engineers Academy: Engineering Principles

[Engineering Principles Sample Assessment \(Issue 1\) - YouTube](#)



Introduction to 2D Design

[Introduction to 2D Design - YouTube](#)



Classification of engineering materials

[Types of engineering materials, Classification of Engineering Materials, Types of materials, #Metals - YouTube](#)



Longer Video Clips, Films or Documentaries

These videos will get you thinking even more about engineering issues. Select one video, record the key points of context or information that you found significant, alongside 5 subsequent questions that the video has spawned.

Understanding metals

[Understanding Metals - YouTube](#)



Inside Aston Martin production

[Inside Aston Martin Production in England - YouTube](#)



Project Triumph TE-1

[Project Triumph TE-1 | Electric Prototype Completes Final Testing | Full Film - YouTube](#)



Programmes and Podcasts

There is a huge array of engineering design podcasts and programmes available. If you do not have a podcast app, or cannot sign in to BBC Sounds, this would be your first thing to remedy. Below are a few stretching and informative programmes for you to enjoy. Make notes on ½ page of A4 about what you have learnt about the topic of each programme and which opinions you agree with and why.

The Life Scientific

[What's the future for generative AI? - The Turing Lectures with Mike Wooldridge - YouTube](#)



Wow! How did they do that?

[BBC Radio 4 - Wow! How Did They Do That?, Episode 1](#)



Grand Designs

[Grand Designs - Series 21: Episode 6 | Channel 4](#)



Questions to Consider

The questions below are designed to get you thinking more broadly about some of the underlying issues within the course we study in Year 12. Choose a question and try discussing it with somebody else. Then write 500 words exploring different possible responses and explaining your own opinions.

Why do engineers need communication skills?

How can we inspire the next generation of female engineers?

How do you build tunnels and bridges underwater?



Debate

Task: Read the linked page regarding the collapse of the Baltimore Bridge and complete the activities below.

[Baltimore Key Bridge: how a domino effect brought it down in seconds \(theconversation.com\)](https://theconversation.com/baltimore-key-bridge-how-a-domino-effect-brought-it-down-in-seconds-121111)



Summarise the article and explain your response to the questions:

Why did the bridge collapse?

How did the bridge collapse?

Do bridge structures need modernising?



Books and Other Longer Reads

These books are excellent introductions to the themes we study in Engineering. They are available to buy and download as e-books.

The Ethical Engineer
Robert McGinn

**Computer modelling in
Aerospace Industry**
Iftikhar B. Abbasov

**Engineering Mathematics through
Applications**
Kuldeep Singh

