

# Stepping Forward: Engineering

Welcome to Land Based  
Engineering

**BISHOP BURTON**  

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*College*



# Introduction

Land based technology covers many different aspects with many different systems, with this in mind, the following task will introduce you to an engine system that is commonly used in the Land-based sector.

Within these tasks we want you to think about and recognise the key operating cycles and components of this type of engine, the four stroke.



The tractor in this image uses a four stroke engine. As does a Lawnmower! Strange to think something as big and powerful as the Fendt shown uses the same system of operation as a source of power as a regular grass cutter...

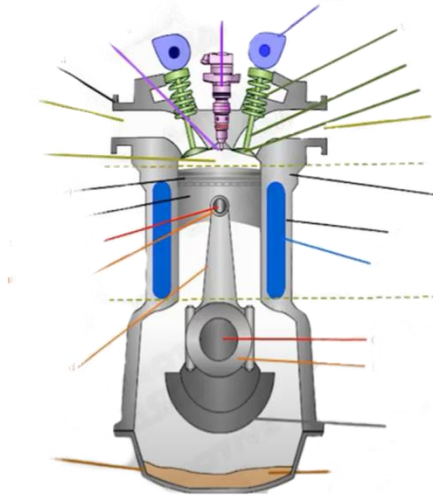
# Task 1

- In this task, we would like you to access the following links, watch the videos and then continue into the tasks...
- Please take notes while watching the first video, you may want to draw an outline similar of the picture on page 3 to make notes on or print the picture off?!
- [Video no 1](#)

# Questions

- Can you identify and mark on the picture (image1) the components found in a four stroke engine?
- What does TDC and BDC stand for?
- Can you identify the name of the components that allow air to enter the engine and exhaust gas to leave?
- Can you identify the pollutants and harmful gases that are released during the Exhaust stroke?
- Can you list the four operating actions (cycles) of a four stroke engine? (Clues below)
- I \_ \_ \_ \_ \_
- C \_ \_ \_ \_ \_ \_ \_ \_ \_ \_
- P \_ \_ \_ \_ \_
- E \_ \_ \_ \_ \_

# Image 1



# Task 2

- This following video will explain how engines are constructed to increase the number of cylinders to increase power output, the same operating system as in the first video is shown.
- Please watch and note the similarities between the two videos!
- [Video no 2](#)

# Questions

- How many cylinders does this engine have?
- How many valves per cylinder does it have?
- When the engine is operating and the pistons are moving up and down, what is the name of the component that links all the pistons together?



Well done for attempting these questions, We hope they give you a taste of things to come....