## What will I be studying?

Whilst this course is focused on preparing you for an apprenticeship as a vehicle technician, it also enables you to explore the many roles available within the automotive sector; parts advisors, service receptionist or valet for example.

You will be studying a range of units which will help you to gain skills that will be valuable to you in your career and when studying for professional qualifications. You will learn about engines and the four stroke cycle, about common tools and low carbon technologies used in cars today.  With the impending ban on the sale of internal combustion engine vehicles, you will also study vehicle electric systems to give you a good foundation to train on the more complex systems fitted to modern motor vehicles

There are a number of things you can be doing now and throughout the summer to prepare you for starting with us in September. The following tasks will be useful and hopefully interesting!

We have put together a short list of recommended YouTube clips along with some reading that can help you to develop an understanding of some subjects we may discuss when you join us at college. You don't have to watch or read everything, but we would like you to choose some and record what you learn on the learning log page.

The activities that you complete will be really beneficial in preparing you to start your course in Automotive Engineering and we would like you to bring this work with you when you come to meet us in September.

## Learning Log

Record here any relevant reading, viewing or tasks you are undertaking in order to show how you have been preparing for the Automotive Course (at least three rows).

| Date | Title | Summary of Contents | My Thoughts |
|---|---|---|---|
| | | | |
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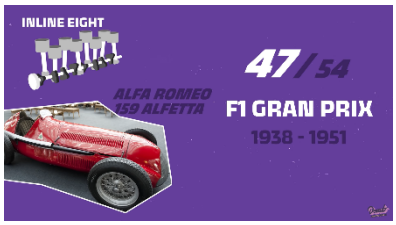
Name _____

## Web Links

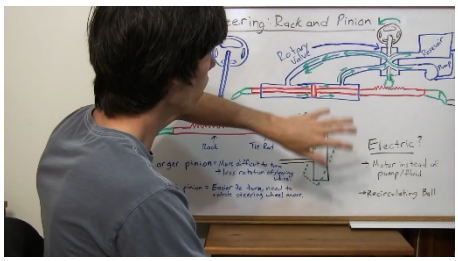
The following web links have been especially selected to help you with the first Units that you will be studying

[Engine Placement EXPLAINED]

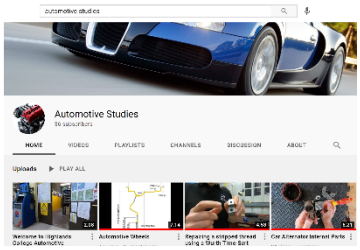

[Every Engine Layout Explained]

[The Ultimate Guide To Tyre Sidewalls]




[How Car Steering Works - Rack & Pinion]

[Highlands Automotive YouTube Channel]

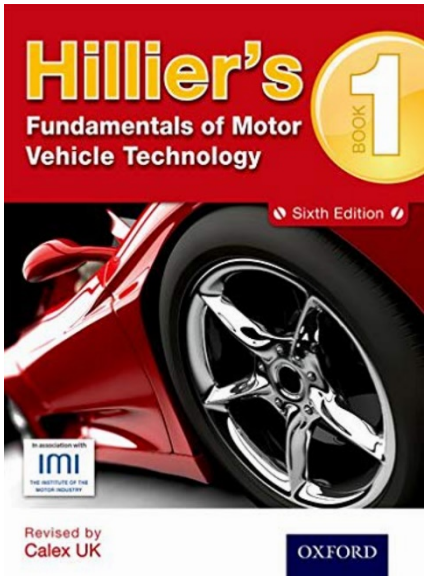



Name _____

## Books

These books will help you in your studies, please only purchase if you will use them, we do have copies within the Automotive Department


Principles of Light Vehicle Operations




Hillier's Fundamentals of Motor Vehicle Technology

Name _____

# The Four Stroke Cycle Quiz

Each question has a choice of three answers, select the correct answer for each question

| | Questions | 1st Choice | 2nd Choice | 3rd Choice |
|---|---|---|---|---|
| **1** | A four cylinder, four-stroke crankshaft rotates at 4000rpm. How many times does number 1 cylinder inlet valve open in one minute? | 1,000 | 2,000 | 4,000 |
| **2** | The main reason an engine requires positive crankcase ventilation is to | Reduce oil contamination | Reduce piston blow by | Increase crankcase air pressure |
| **3** | What is a common cause of low oil pressure? | Worn camshaft lobes | Worn oil control piston rings | Worn big end bearings |
| **4** | When valve clearances are greater than specified, the valve overlap period will be | Unaltered | Reduced | Increased |
| **5** | The area of a piston is 45 $cm^2$ and the stroke is 110 mm. If the clearance volume is 55 $cm^3$ the compression ratio would be | 10:1 | 6:1 | 8:1 |
| **6** | When does most engine wear in an internal combustion engine take place? | Maximum power | During warm up to working temperature | Idling |
| **7** | What sound would accompany a failed big end bearing on a running engine? | High pitched tapping sound coming from the top of the engine | Squeaking sound relative to camshaft speed | Heavy knocking sound relative to engine speed |
| **8** | When replacing the cylinder head on a CI engine the cylinder head gasket | Must never be reused | May be reused provided the head bolt torque is increased | Can be reused many times |

Name _____