

# Bromley Beacon Academy Knowledge Organiser

## Key words

- PPE – Personal Protective Equipment
  - Behaviour contract – something you sign
  - Absorbent Granules – Something to soak up oil
- Fire Hazard- A potentially source of fire
  - Safety goggles – Eye protection
- Steel toe cap boots – Feet protection
- Barrier Cream – Pre work cream
- Side cutters – a tool to cut & strip wire
- Combination spanner – Open end and ring end spanner combined

## Motor Vehicle maintenance & repair, level 1

City & Guilds 3902-11

### Unit 1, Health & Safety

Unit 1 of this course will teach you about a wide range of health and safety aspects. You will learn how to keep yourself and others safe whilst in the workshop, how to report dangers and how to use a variety of tools we have in the workshop.



# Safetymatters



Overalls



Steel Toe Cap

# BROMLEY



BEACON ACADEMY

# Bromley Beacon Academy Knowledge Organiser

## Key words

- PPE – Personal Protective Equipment
- Spark plug– Ignites your fuel & air mixture
- High tension lead – Connects the HT cap to the coil
- Coil – Converts low voltage to high voltage
- Feeler gauge – a tool used to measure thin gaps
- Torque wrench - a tool used to tighten items to a specific measurement
  - Safety goggles – Eye protection
- Side cutters – a tool to cut & strip wire
- Spark plug socket – a socket used for removing spark plugs

## Motor Vehicle maintenance & repair, level 1

### City & Guilds 3902-11

### Unit 2, Vehicle Ignition systems

Unit 004

Within this unit you will how the 'ignition system' on a motorbike works, the importance of spark plug gap and how to diagnose the running of an engine from the condition of the spark plug. Along with this you will learn a wide range of names and purposes of electrical components.



Spark plug



Feeler Gauge



Torque Wrench

# Bromley Beacon Academy Knowledge Organiser

## Key words

- PPE – Personal protective Equipment
- Gearbox – Provides various gear ratios to alter speed and RPM
- Chain – a series of links connected to provide drive between two gears
- Split link – A link that can be separated to remove a chain
- Sprocket – A gear that is often found driving a chain
- Clutch – A clutch connects and disconnects power from the engine to allow gear changes
- Torque wrench - a tool used to tighten items to a specific measurement

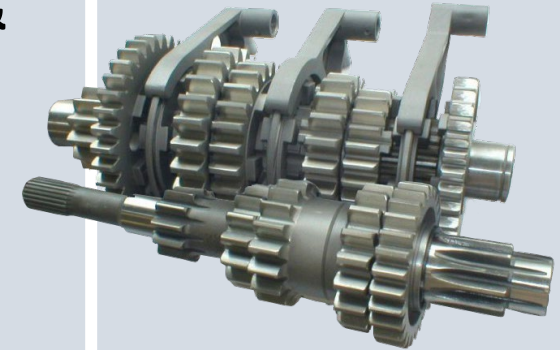
## Motor Vehicle maintenance & repair, level 1

### City & Guilds 3902-11

### Unit 3, Transmission systems

Unit 007

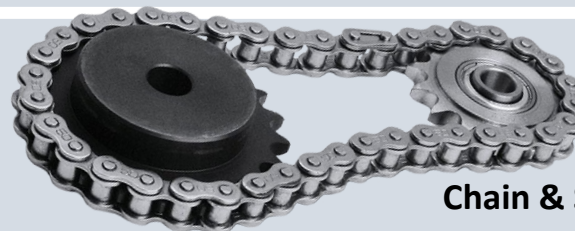
Within this unit you develop a deeper understanding of the workings of a 'Transmission system' and how a variety of parts work together to move your vehicle. You will also learn how to remove, inspect and install a range of transmission components.



Gear box



Ball Bearing



Chain & Sprockets

# Bromley Beacon Academy Knowledge Organiser

## Key words

- PPE – Personal protective Equipment
- Gearbox – Provides various gear ratios to alter speed and RPM
- Cam Chain – a chain used to drive the crankshaft and camshaft

Piston – A piston keeps the piston rings in place and creates compression within an engine

Camshaft – Has lobes that are used to open and close valves

Crankshaft – Turns rotational movement into reciprocal movement

TDC – top dead centre

BDC – Bottom dead centre

## Motor Vehicle maintenance & repair, level 1

### City & Guilds 3902-11

#### Unit 4, Lubrication systems

Unit 101

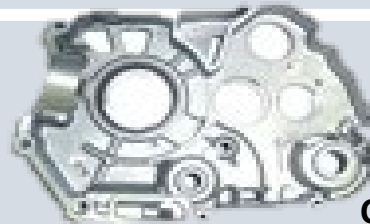
Vehicle lubrication systems covers a wide range of engine components Within this unit you develop a deeper understanding of the workings of a 'Transmission system' and how a variety of parts work together to move your vehicle. You will also learn how



Crank shaft



Piston



Crank Case

# Bromley Beacon Academy Knowledge Organiser

## Key words

- PPE – Personal protective Equipment
- Brakes – slows down and stops moving vehicles
- Brake hose – A hose connecting Master cylinder and Calliper together in a hydraulic system
- Hydraulic – a pressurised liquid moving in a confined space
- Calliper – Houses pistons and seals
  - Brake fluid – a fluid used in hydraulic systems.
- Reservoir – a container that holds fluid
  - Brake drum – a cylinder like shape that brake shoes press against
- DOT – Department of Transport
- Hydroscopic – The term used when brake fluid absorbs water becoming contaminated

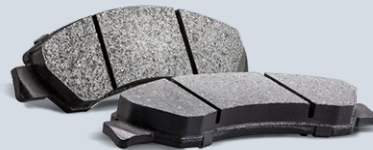
## Motor Vehicle maintenance & repair, level 1

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### Unit 5, Braking systems

Unit 106

Brakes are designed to progressively slow down and eventually stop a vehicle. They do this by using Friction. Sometimes friction is a disadvantage but if it did not exist many things we do would be impossible, such as walking! Within this unit you will learn about different type of braking systems, how they operate, the components that they are made up of and the



Brake pads



Master cylinder



Calliper



Brake hose

# Bromley Beacon Academy Knowledge Organiser

## Key words

- PPE – Personal protective Equipment
- Tyres – Inflates round a rim to form contact on the road
- Inner tube – A rubber tube that once inflated keeps the shape of a tyre. This can also be adjusted to different pressures.
- Hubs – The central part of a wheel that connects the vehicle to a rim
- Traction – The term used when describing a tyre's grip
- Diameter – A measurement used to read one size of a tyre
  - Pressure – How much a tyre or inner tube is inflated to
- Tyre Machine – A pneumatic tool used to change tyres
- Pneumatic – machines powered by air pressure.

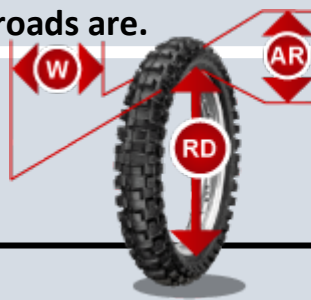
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### Unit 6, Wheels and Tyres

Unit 108

This unit covers a wide range of information around how tyres are made, the materials they are made up of, how to change a tyre and how to read a tyre size. You will also learn some very important legal information about how to ensure your tyres on your motorbike or car are kept within legal limits and what the minimum tread depth on UK roads are.



EXAMPLE:

WIDTH / ASPECT RATIO x RIM DIAMETER

110/90x19



Motorbike rims



Tyre Machine



Inner tube

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City & Guilds

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## Key words

- PPE – Personal protective Equipment
- Handle bars – A bar that connects to yokes. This allows rider to steer bike
  - Handle bar clamps – This connects the bars to the clamps
  - Triple clamps – Connects the fork to the chassis
  - Suspension – Designed to absorb bumps to give rider a smooth ride
  - Bearings – Reduces rotational friction between to parts
  - Spindle/Axle – Secures a wheel to the motorbike via forks and swing arm
  - Lithium Grease – Lubricating grease used to grease up bearings
  - Copper Grease – A copper based greased used as a anti seize grease to stop items seizing

## Motor Vehicle maintenance & repair, level 1

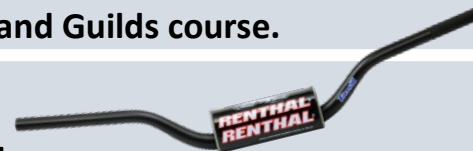
### City & Guilds 3902-11

#### Unit 7, Steering and Suspension

Unit 109

This unit covers a wide range of information around Steering and Suspension components. You will learn a wide range of names and purposes of each component. You will also be taught how to fault find, rebuild, repair and align a variety of Steering and suspension Components. This is also the last unit for your level 1 City and Guilds course.

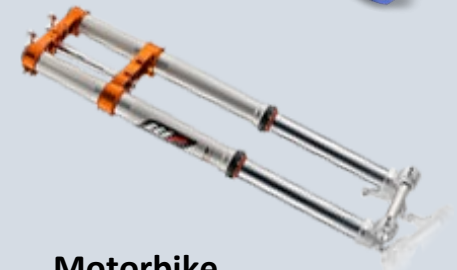
Handle bars



Motorbike suspension



Triple clamps/ Yokes



Motorbike forks