

Long Term Plan Year 11 Motor Vehicle Engineering 2022

Half term	Unit title	Key knowledge/ Content to learn and retain	Essential skills to acquire (subject & generic)	Link to subject ethos and driver (rename)	Anticipated misconceptions	Links to previous KS	Links to future KS	Opportunity for stretch for high prior attainers	SMSC & British Values	Cultural Capital	Career Link
HT1	Cooling systems	Header tanks, radiators and pressure caps, heater matrix and temperature control systems, expansion tanks hoses, clips and pipes, thermostats, impellers, ventilation systems	Measuring devices, reading data, checking volume, reading manufacturers settings, testing compression	Real Life, Real Skills Driving into the Future	Use of compression leakage kits, reading hydrometer data, inspecting thermostats, cooling system components	Health & Safety Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM02.1 LVM02.2	Calculating antifreeze ratios, measuring volume and capacities	*sense of enjoyment and fascination in learning about themselves, others and the world around them	*Differences between vehicles that are in climates of extreme cold weather	https://www.autocity.camart.co.uk/world-of-work
HT2	Fuel systems	Petrol & diesel systems, single and multi-point systems, Direct and indirect injection systems, injectors and injector types, sensors operation, hydrocarbon fuels	Measuring devices, reading data, checking volume, reading manufacturers settings, testing compression (wet & dry)	Real Life, Real Skills Driving into the Future	Use of fuel compression kits, diesel vacuum kits, inspecting injectors, fuel system components	Health & Safety Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM02.1 LVM02.3	Calculating compression ratios and cubic capacity, measuring fuel volatility	*understanding of the consequences of their actions	*Awareness of environmental impact of petrol & diesel fuels	https://www.autocity.camart.co.uk/world-of-work
HT3	Electronic system	Amplifiers, triggering systems, inductive pick-ups, hall	Measuring devices, reading data,	Real Life, Real Skills	Use of multimeters, measuring	Health & Safety	Unit ref: GA102 GA3	Measuring inductive wavelengths,	*use of imagination and creativity	*Introduction of new technologies	https://www.autocity.camart.co.uk

		generators, pulse generators, control units	checking levels, reading manufacturers settings,	Driving into the Future	data from scan tools, electronic system components	Tools, Equipment & Materials	GA4 LVM03		in their learning	that have developed in the marketing of hybrid & electric vehicles	uk/world-of-work
HT4	Ignition systems	Dwell angle, dwell time and dwell variations, advance and retard of ignition timing, closed and open loop systems, integrated ignition, injection systems, sensors	Measuring devices, reading data, checking volume, reading manufacturers settings, testing compression	Real Life, Real Skills Driving into the Future	Use of measuring devices, ignition system components, starting and charging devices	Health & Safety Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM02.3	Gapping and adjusting distributors	*willingness to participate in a variety of social settings, cooperating well with others and being able to resolve conflicts effectively	*Development of new technologies that help towards sustainability & the environment	https://www.autocity.camart.co.uk/world-of-work
HT5	Exhaust system	Silencers, catalytic converters, air filtration, diesel particulate filter (DPF), Lambda sensors	Measuring devices, reading data, checking volume, reading manufacturers settings, testing compression	Real Life, Real Skills Driving into the Future	Use of exhaust extraction equipment, measuring gas analysers, identification of exhaust components	Health & Safety Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM02.3	Analysing gas pollutants, measuring oxygen content on Lambda sensors	*willingness to reflect on their experiences	*the impact of exhaust gases on the environment and methods of reducing through MOT inspections	https://www.autocity.camart.co.uk/world-of-work
HT6	Synoptic report summative assessment	Interval servicing, full service, cambelt service & serpentine service, customer servicing, dealership franchises & independent businesses	Reading data measurement, volume, pressures, reading manufacturers specifications,	Real Life, Real Skills Driving into the Future	Knowing how to write a detail synoptic report based on servicing a vehicle	Health & Safety Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 L2LVMS LVM02.1 LVM02.2 LVM02.3 LVM03 LVM04		*ability to recognise the difference between right and wrong and their readiness to apply this understanding in their own lives	*the importance and safety of owning a roadworthy vehicle	https://www.autocity.camart.co.uk/world-of-work

