

# Long Term Plan Year 10 Motor Vehicle Engineering



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	Steering systems	Camber, caster, Ackermann's principle, wheel alignment, understeer & oversteer	Measuring angles Reading data Reading manufacturers settings Using tracking gauges	Real Life, Real Skills  Driving into the Future	Use of wheel alignment tracking gauges, steering systems components	Health & Safety  Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM04	Steering geometry tasks	*interest in investigating, and offering reasoned views about, moral and ethical issues	*reduction in understeer & oversteer when driving	<a href="https://wow.autocity.camart.co.uk/world-of-work">https://wow.autocity.camart.co.uk/world-of-work</a>
HT2	Suspension systems	Leaf, coil, damper, MacPherson, IFS & IRS, anti-roll bar, trailing arms, wishbones	Measuring angles Reading data Reading manufacturers settings Measuring ride height	Real Life, Real Skills  Driving into the Future	Use of spring compressor Suspension system components	Health & Safety  Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM04	Measuring vehicle ride height	*willingness to participate in a variety of social settings, cooperating well with others and being able to resolve conflicts effectively	*awareness of an increase in potholes and speed bumps in the community	<a href="https://wow.autocity.camart.co.uk/world-of-work">https://wow.autocity.camart.co.uk/world-of-work</a>
HT3	Braking systems	Disc & drum, hygroscopic properties, bleeding systems, EPB, brake servo	Measuring pads Reading data Reading manufacturers settings	Real Life, Real Skills  Driving into the Future	Use of brake bleeding kit, use of vernier & micrometer gauges, brake boiling tester	Health & Safety  Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM04	Calculating brake efficiency	*ability to recognise the difference between right and wrong and their readiness	*importance of good brakes when driving on a	<a href="https://wow.autocity.camart.co.uk/world-of-work">https://wow.autocity.camart.co.uk/world-of-work</a>

			Checking for leaks	Future					to apply this understanding in their own lives	motorway	
HT4	Wheels & Tyres	Road wheel types, tyre markings, construction, tread patterns, wheel balancing	Inspection techniques Reading data Reading manufacturers settings Wheel rim data	Real Life, Real Skills  Driving into the Future	Use of tyre removal machine, wheel balancer, tyre inflator, tyre sidewall markings	Health & Safety  Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM04	Wheel rim markings, UK repair standards	*willingness to reflect on their experiences	*safe disposal of waste tyres that is controlled by the EPA	<a href="https://wow.automocity.comar.t.co.uk/world-of-work">https://wow.automocity.comar.t.co.uk/world-of-work</a>
HT5	Lubrication & Cooling systems	Oil viscosity, wet & dry sumps, boundary & hydrodynamic, oil pump types	Measuring levels Reading data Check manufacturer settings	Real Life, Real Skills  Driving into the Future	Use of oil draining pan, vacuum bottle, hydrometer for antifreeze	Health & Safety  Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM04	SAE viscosity index graphs	*understanding of the consequences of their actions	*waste control of oils and antifreeze that complies with UK standards	<a href="https://wow.automocity.comar.t.co.uk/world-of-work">https://wow.automocity.comar.t.co.uk/world-of-work</a>
HT6	Revision of all systems in preparation for online & practical assessments	Practical assessments - steering, suspension, brakes, wheels & tyres		Real Life, Real Skills  Driving into the Future	Procedures followed during assessments	Health & Safety  Tools, Equipment & Materials	Unit ref: GA102 GA3 GA4 LVM04	Collective underpinning knowledge of all vehicle systems	*willingness to reflect on their experiences	*informed customer when selecting and buying a new or used car	<a href="https://wow.automocity.comar.t.co.uk/world-of-work">https://wow.automocity.comar.t.co.uk/world-of-work</a>