Bill Plant Driving School & DTS Theory Example Lesson Structure

Strictly INTERNAL ONLY. Not to be distributed, use for call scripts only

Example lesson script:

"Today we're going to be focusing on XX really important aspects of your theory test, Y and Z.

We'll firstly go over the core concepts and develop your understanding of why it's important to master these topics.

This will develop both your theoretical and practical understanding, to get you to a point where you'll first ace your theory test, and then by able to use that knowledge for wider practical applications to driving, be it in the form of driving lessons and independent driving once you've passed your test.

Our goal at Bill Plant Driving School is to not just make you pass a test, but understand the theory in the required detail for you to become a confident and safe driver for life thereafter."

1**) Outline the topic(s) of focus:**

- Ask the pupil to define the topic - "Right so for our first topic, to get an insight into your level of understanding, what does the word "X" (e.g. Alertness) mean to you in a driving scenario?
- Acknowledge their response, correcting them as necessary based on the actual definition and ask them to note down the following definition if they were not correct - "So in terms of driving, X means YXZ" (e.g. Alertness in terms of driving, means staying alert, taking into account your physical and mental condition, being aware of all your surroundings, dealing with distractions when driving and being aware of the traffic around you.)
- Ask the pupils to give practical applications of the concept in action (E.g. in what circumstances would you be more or less alert?)
- Acknowledge their response, and then explain the reasons we learn about X and the practical applicability to driving (e.g Alertness is critical for the road safety of individual drivers and other road users and pedestrians etc)
- Repeat for each topic that you intend to cover in the session.

2) Go through the subject matter with them (see sections below) in depth as necessary.

3) Use the software together, pin-pointing the exact sections you will discuss and let them read the subject matter and ask any questions they may have at this stage.

4) Practice questions with them, review answers and give thorough explanations, accordingly, keeping each topic up to date in terms of progress measurement.

The Benefits of Private Tutoring

1. Personalised Approach and Pace

Since all pupils are unique, some will be able to learn quicker than the average while others will need more time to process information.

Private tutoring helps counter that. It is for the Instructor to assess each pupil's learning needs and set the pace necessary to achieve the desired results.

2. Fewer Distractions

Since private tutoring usually happens in a quiet and peaceful setting, there are fewer distractions. Instructors can give students their full attention, and pupils can fully focus on the study material.

3. Improved Confidence and Self-esteem

The one-on-one approach, when working with a private tutor, can help pupils to become more confident their knowledge in the subject. Continuous positive reinforcement from that can be beneficial for their self-esteem.

4. Increased Intrinsic Motivation

If an Instructor can tailor the learning environment to meet the pupil's needs and find ways to make the subject matter relevant and applicable, it can improve a pupil's intrinsic motivation to study. Intrinsic motivation is not only more effective long-term but can also yield much higher results.

5. Better Performance

Since pupils are able to process and assimilate information at their own pace and are guided by intrinsic motivation, they are more likely to achieve better results.

6. More than Just the Syllabus Material

Since a tutor can tailor private tutoring sessions to each pupil's needs, they can involve topics and material that is related to the syllabus material but covered in it. In this way, they can increase pupil's interest in the subject and show ways of applying their knowledge in real life.

Alertness

The alertness section contains questions about staying alert, dealing with distractions when driving and being aware of the traffic around you.

Things to remember about alertness:

Do your best to avoid distractions and to stay alert whilst driving.

Possible distractions include:

- Dangling objects from the mirror
- Mobile phones
- Loud music
- Argumentative/talkative passengers
- Being too cold or too warm

To stay alert, you should make sure that you are well rested when you begin your journey, avoid driving when ill, or on medication that is likely to affect your concentration or alertness, take regular breaks and avoid stressful situations as far as possible. You should also be aware that allowing the vehicle temperature to be too warm can cause drowsiness and a loss in concentration.

You should recognise the importance of the using your mirrors before any turning manoeuvre and before pulling away from a stationary position. Observation in general is a critical skill for all road users – this includes use of mirrors, over the shoulder glances, and blind spot checks before moving off, stopping and turning.

It is best not to use a mobile phone at all when driving, even if you have a hands-free kit. Similarly, if you need to refer to a map or adjust your GPS, then stop first. Never attempt to map read, dial a number or text, whilst on the move.

Attitude

Many accidents and road incidents are caused by a poor attitude to driving. The questions in this section are designed to highlight the difference between good and bad driving attitude.

Things to remember about attitude:

Avoid driving aggressively. Not only does it increase the chance of you having an accident, but it causes other drivers to behave more aggressively around you and can lead to road rage incidents unnecessarily. Take your time, leave a safe gap and give other drivers time and room to manoeuvre. Remember that driving on public roads is not a competitive sport – it is a means of getting from A to B. If you want to drive competitively, hire a track and do a track day. Try to leave your ego behind when you are driving, adopt a forgiving attitude – other drivers will make mistakes, but a good driver leaves a big enough gap and drives in such a way that the mistakes of others have little effect on them. A bad driver on the other hand will usually be too close, end up taking harsh avoiding action and will allow annoyance to affect their driving.

If you are following a vehicle, keep a safe distance back from it, this will allow you more time to stop and will allow you to see past it more easily. By being able to see past the vehicle in front of you, you increase your reaction time, improve your chances of overtaking safely, reduce the need to brake harshly and reduce the likelihood of running in to the back of it. The two second rule is a good guide to a safe following distance when the conditions are good and the road is dry.

The emergency services use blue flashing lights, slow moving vehicles use amber flashing lights and doctors on call occasionally use flashing green lights.

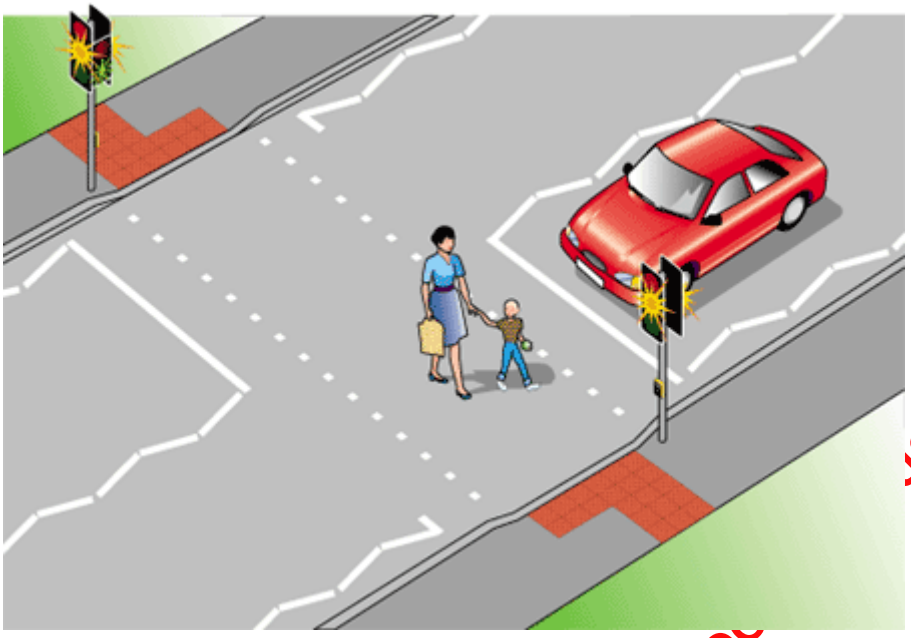
It is good attitude to exercise caution at all times – especially when approaching junctions, pulling out into traffic and approaching crossings.

There are a few different types of crossings (all named after wildlife):

Zebra: Called zebra because of the black and white stripes…
Zebra crossings are characterised by a series of black and white stripes across the road and flashing amber globes mounted on poles marked with alternate black and white stripes. Zigzag markings are laid on both the approaches and the exits to the crossing. The zigzags ban waiting or parking, prohibit

vehicles from overtaking each other and warn pedestrians of the increased risk of crossing in the zigzag area. Zebra crossings are only used on road with a speed limit of 30 mph or less.

Pelican: officially 'pelicon' short for '**Pe**destrian **Li**ght **Con**trolled Crossing'



A pelican crossing is controlled by traffic signals. Pedestrians push a button to indicate that they want to cross. The red man / green man indicator is located on the far side of the crossing. Zigzag markings are laid on both the approaches and the exits to the crossing and ban waiting or parking, prohibit vehicles from overtaking each other and warn pedestrians of the increased risk of crossing in the zigzag area. Once the green man starts flashing, there should be sufficient time to finish crossing the road if the pedestrian has already started.

Puffin: '**P**edestrian **U**ser **F**riendly **In**telligent Crossing'
Puffin crossings are like pelican crossings, but they have detectors that can tell when people are waiting to cross. This is why you must stand by the push button box if the red man signal is showing. The detectors also 'watch' the crossing and control the light signals so that you have time to cross in safety.

The puffin crossing has a normal traffic light but doesn't have a flashing amber (orange) stage.

The good points for motorists are:

- If people cross quickly the lights will change back quickly
- If someone presses the button and doesn't cross, or crosses before the lights change, the traffic will not be stopped

Toucan: '**Two can** cross'
Toucan crossings allow both pedestrians and cyclists to share a wide crossing area (there is no physical separation between cyclists and pedestrians) and cyclists can ride across. All crossing users should avoid changing direction suddenly. Cyclists should keep their speed down and be prepared to

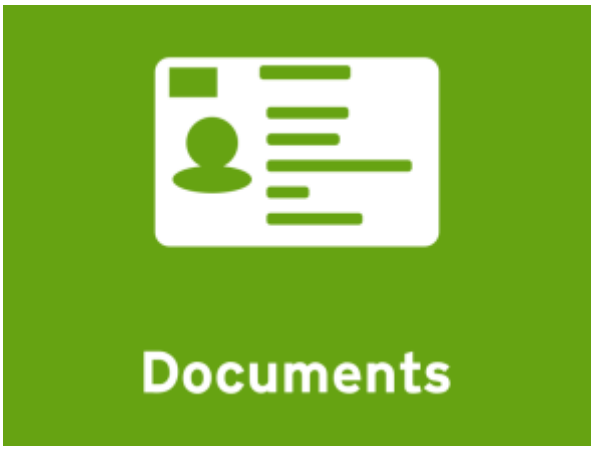
give way to avoid possible conflicts. The crossing is usually operated by buttons but some are automatic – detecting the presence of someone waiting to cross. Toucan crossings are usually able to detect if someone is still on the crossing and may allow the traffic to start moving if the crossing is clear.

Take care around pedestrians and pedestrian crossings. They are extremely vulnerable and should not be rushed or intimidated by drivers.

In general when answering questions in this category, if you are unsure of the answer, pick the most 'conservative answer'.

Documents

The documents section tests your knowledge of the purpose, content and legal requirements for different documents such as the MOT, vehicle excise duty, insurance certificate, vehicle registration document (V5) and driving license.



Things to remember about documents:

The vehicle registration document (V5)

The vehicle registration document (V5) contains information about your specific vehicle, it records the chassis number, date of manufacturer, last owner, current owner, vehicle model, make, colour, engine type and capacity. This document has to be signed by the existing owner when it is sold to a new owner, and returned to DVLA who issue a new one with updated details.

The V5 should be held by the registered vehicle keeper – and it is the keeper's responsibility to keep the DVLA updated of any changes in the information contained on the V5 (including changes to ownership, changes to the vehicle and changes of address).

Vehicle excise duty (VED) / road tax

Unless your vehicle has a current SORN (statutory off road notice), it must be taxed.

The cost of vehicle excise duty is not the same for every vehicle, how much you pay will vary (greatly) according to the type of vehicle (e.g. car, motorcycle, LGV, etc.), the engine size (cc) or CO_2 emissions, the fuel type (e.g. petrol/diesel, gas, electric, etc.) and the age of the vehicle. Generally, vehicles that pollute more or are very heavy (and therefore cause more wear to road surfaces) cost more to tax. You can tax your vehicle by phone, online or at selected Post Offices for 6 months or 12 months at a time (and soon by monthly or yearly direct debit too). In order to tax the vehicle, it will need to be insured and a have valid MOT, you may need to present these documents when applying.
A SORN (statutory off road notification) is a declaration by the vehicle's owner, submitted to the DVLA, that the vehicle will be kept of the road until further notice (SORNs no longer expire after 12 months), and therefore isn't liable for road tax. If the vehicle owner changes (i.e. due to it being sold or scrapped) or the vehicle is taxed, then the statutory off road notification expires.

The DVLA will normally send you a renewal notice a month before your tax expires, but if the vehicle is new or has a SORN, then it is your responsibility to get your vehicle taxed before you drive it on public roads. Driving your vehicle without tax on the public highway is illegal and there are stiff penalties who are caught doing so.

Insurance / insurance certificate

You **must** have insurance to drive on public roads. The lowest practical level of insurance is 'third party only', which only protects other people from damage or injury sustained as a result of an accident in which you are involved. The penalties for driving without insurance are an unlimited fine, the automatic endorsement of an offender's licence with 6–8 penalty points and possible disqualification.

The next level up is 'third party fire and theft', which protects others and in addition provides you with compensation in the event your vehicle is stolen or catches fire. After that, you have 'fully comprehensive' which covers all risks, including compensating you for the damage to your own car if you have an accident (even if the accident is your fault). Insurance policies usually carry disclaimers and waivers (they may not pay out if your car is untaxed or if you had made modifications to it that you had not told them about, or if you lied when answering any of the questions that you were asked when you took out the policy). There will also be an 'excess' which is an amount of money that **you** (the insured) have to pay, in the event of a claim. When you have obtained insurance, you will be sent an insurance certificate, which is your proof of insurance. You must keep this document safely.

Things that increase your insurance premium:

- Living in an area with a bad theft record
- Being young / inexperienced
- Driving a powerful car, or one that has lots of modifications
- Parking on the road
- Driving a lot of miles every year
- Having a bad record of accidents and / or convictions
- Insuring a car that is expensive to repair
- Insuring for business use

Things that can reduce your premium:

- Building up a no-claims bonus (i.e. having a good driving record for an extended period of time)
- Taking an additional driver training programme (Pass Plus, Institute of Advanced Motorists – IAM)

MOT (Ministry Of Transport certificate)

The MOT document is a certificate that indicates that on the day of test, the vehicle was roadworthy. An MOT certificate is required annually for any vehicle over three years of age, and a vehicle may not be legally driven on the road without one. The MOT test takes about 30 minutes and usually costs about £40–£55 (assuming nothing is wrong with your vehicle). You will have to show your MOT certificate if you buy your road tax at a post office. It is not necessary to show or carry your certificate in/on your vehicle, but you may be required to produce it in the event of an accident or if you are

stopped for any reason by the police. The only time you can legally drive on a road without an MOT certificate is when you are taking the vehicle to a pre-booked appointment at an approved MOT test centre. The certificate is specific to your vehicle so it will display the registration number.

Driving license

Before you start to drive on the road as a learner, you will have to obtain a provisional license. With a provisional license, you will be able to drive on public roads, so long as you are accompanied by an Approved Driving Instructor (ADI) or someone that holds a full driving license, is over 21 years of age and has had their full UK/EU license for at least 3 years. Whilst driving or riding on a provisional license, you must display L plates on the front and rear of your vehicle (L or D plates in Wales).

Once you have passed your theory test you can take your practical test (you must do this within 2 years, otherwise you will have to re-sit your theory exam). Once you have passed your practical driving test, you will be granted a full license. However, to encourage you to drive with care (newly qualified drivers have more accidents than other categories of drivers) you start off in a kind of probationary state which lasts for 2 years. If you get 6 penalty points on your license within two years of passing, you will lose your license and be required to take a retest (theory *and* practical!) in order to get your license back.

Hazard awareness

Impairment

The impairment element of the 'hazard awareness' category contains questions concentrating on issues that can reduce your ability to spot hazards or react to them. Many of the questions in this element contain images and require little more than common sense to answer correctly, which makes it a little tricky to create a set of general rules, however, the following points should be remembered:

Driving when tired or under the influence of alcohol or drugs (no matter how little) or when on medication that causes drowsiness, or when ill, impairs your judgement and your ability to spot and react to hazards. Even driving when stressed from work, after an argument with a partner or angry for any other reason, will cause your standard of driving and your hazard awareness to be reduced. The rule here is that you should simply not drive if your awareness is impaired in any way. That may sound like a conservative view, but even a slight degradation of your driving performance can result in a very serious accident and it is just not worth taking that risk.

A doctor is the only person that can really tell you if the effect of a medicine is likely to be significant on your driving.

Tiredness is a real killer especially, but not exclusively, on long motorway journeys. If you feel yourself becoming drowsy it is important to stop (in a safe place – not on the hard shoulder) and to get some rest. Coffee, caffeine drinks, loud music and fresh air can all help to some degree, but there really is no substitute for rest – ideally a short nap. If you are going on a long journey, you should plan regular rest stops to avoid tiredness becoming a problem.

Alcohol and driving simply do not mix – largely because the effects of alcohol are to decrease your actual ability, whilst convincing you that you are actually driving better. This is an absolutely lethal combination. Again – it is a conservative viewpoint, but if you are driving, you really should not drink at all.

If you need to wear glasses or contact lenses to drive, then you **must** wear them when driving. Driving is a highly complex and largely visual task. Having an incomplete or fuzzy picture of the road around you is asking for trouble, so if you lose your glasses, avoid driving until you find them again.

Road rage is a serious and increasing problem. As traffic densities increase, motorists appear to be getting more and more territorial in their vehicles. What's more – because drivers feel so well protected in their metal suit of armour – they tend to react to other road users in ways that they would never dream of, if they were to meet another person on foot in a street. There is no simple cure for this, each motorist is different and everyone needs to find their own way of coping with the stress of driving in traffic; but you should remember at all times: We all make mistakes and it is in everyone's interests that you avoid reacting to other motorist's mistakes and allow people the space to make them without it being a problem for you.

As an example: It is often the case that you will see people who have ended up in the wrong lane and need to move to the left or the right to adopt a different lane. You will often see drivers and riders deliberately accelerate and close up to the vehicle in front just to prevent the vehicle from changing lanes. Why? What purpose does this serve? Of course it serves no purpose at all, except perhaps getting home 'one vehicle length' sooner whilst causing unnecessary antagonism and disrupting traffic flow. Think about your driving, constantly challenge yourself to drive better, to react more calmly – and you will enjoy your driving more whilst substantially reducing your chances of having an accident.

Perception

The perception element of the 'hazard awareness' category concentrates on issues of thinking what might happen next. Like the impairment element of the category, many of the questions in this element are picture questions and require little more than common sense to answer correctly.

The following points should be remembered:

Look carefully at any images shown in the test – there are usually lots of clues to be had by looking at the road signs, road markings, traffic lights, vehicle and pedestrian positions.

Hazard warning lights should be used when you are travelling slowly or have to stop because you have broken down. They can be used on motorways, dual carriageways and other fast flowing roads to warn following traffic that you are slowing or stopping because of traffic or an accident ahead; doing this can help to avoid a minor accident resulting in a massive pile-up. Remember that amber lights in general indicate slow moving traffic and so can be found on road repair vehicles, gritting lorries, road-sweepers, disabled vehicles, accident recovery trucks etc.

In this category as with all others (and in the real world when driving) a cautious and conservative approach will help to protect you and other motorists around you. So, when approaching a junction slow down early, if you see pedestrians waiting to cross a road, slow down (just in case), on the approach to any hazard, slow down and/or cover your brake pedal, when entering a contraflow system – reduce your speed early. If your vision at a junction is restricted, then creep slowly forward until you *can* see safely to pull out.

Incidents, accidents and emergencies

First aid

The first aid element of the 'incidents, accidents and emergencies' category contains questions on what you should do when arriving at the scene of an incident or road traffic collision. The DVSA would like all motorists to understand the basic principles of first aid – so that you at least do no harm, and hopefully do plenty to help those that are injured should you ever see or be involved in an incident.

Here are a few things to remember:

Your first duty on arrival at an incident scene is to ensure that you do not become a victim of the incident yourself – reduce the danger of traffic piling in to the existing incident. Move uninjured people away from the scene, move injured people away from the scene *only* if you are absolutely sure that moving them is not going to make their injuries worse *or* if the risk from them staying where they are (i.e. from a fire, chemical spill) is higher than from you moving them.
On finding someone that is injured, your priorities are the 'A, B, Cs' – that means to check, protect and or open their **A**irway, to make sure that they are **B**reathing and to then consider their **C**irculation (i.e. prevent or at least reduce bleeding)
The best way to prevent bleeding is to elevate the limb (if possible) and to apply direct pressure with something clean (clothing or a hand).

With burns, you should leave well alone, unless you have some cool and clean water that you can apply to the wound.

If someone has stopped breathing you may need to give mouth to mouth resuscitation. To start mouth to mouth, you must pinch their nostrils together and tip the head back slightly to open the airway. If the injured person is a young child, you need to be more careful – to avoid damaging their lungs by breathing too hard. For adults and children, you should only stop giving mouth to mouth resuscitation when they start breathing for themselves or the emergency services arrive and take over.

If a casualty is not breathing normally chest compressions may be needed to maintain circulation. The compressions should be 4–5cm deep given at a rate of 100–120 compressions per minute (about the speed of the song 'Nelly the elephant'). You should continue to do this until the patient is able to breathe without help and / or professional medical help arrives to take over.

If you arrive on the scene of a collision and a motorcyclist is injured, you should try to treat them without removing the helmet. Removing a helmet can make a neck or back injury much worse. If placed in the situation where you are forced to remove the motorcyclist's helmet, then you should talk the 999 ambulance emergency operator, who will be able to offer advice and directions.

Incident handling

The incident handling element of the 'incidents, accidents and emergencies' category contains questions about what you should do in the event of a breakdown or in the event of being involved in (or just witnessing) an incident. Here are some useful guiding principles:

If you do break down or stop because of an incident, then it is very important to make sure that you can be seen in plenty of time, so that other motorists don't run into your stationary vehicle. If you can, get your motorcycle completely off of the road. If you have them, use your hazard warning lights – they are especially effective at night, but also effective during the day. Remember that the hard shoulder of a motorway should only ever be used in an emergency and you should not sit on your motorcycle whilst waiting for assistance.

If you need to call for assistance then the best way to do it is to walk to the nearest emergency phone and make a free call (facing oncoming traffic so that you can get out of the way in case a vehicle drifts on to the hard shoulder. To find the direction of the nearest emergency phone, check the arrows on the marker posts.

Unless there is no danger of being hit by any other vehicles you **must** get off of and move a safe distance away from your vehicle. This is especially important if you pull up on the hard shoulder of a motorway – in which case you (and your passengers if you are carrying any) should wait for assistance on the far side of the metal barrier at the edge of the hard shoulder.
In the event of a sudden loss of tyre pressure (blow-out), don't panic, brake harshly or swerve. Instead, just gradually allow the vehicle to slow down without making any sudden movements. The car may be difficult to control and the handling will vary depending on whether you have lost pressure in a front or rear tyre. The steering wheel may tug in one direction or the other, or the rear of the car may feel as if it is trying to overtake the front. Maintain control of the car as it slows down and try to stop before you need to turn. If you suspect a puncture, stop as soon as possible and check.

After a spate of incidents, a number of questions on driving in tunnels have been added. If possible, you should tune your radio to a local station before you get to the tunnel to check for broadcasts alerting you to problems in the tunnel. As you get to the tunnel, be sure to remove your sunglasses, slow to an appropriate speed and turn on dipped headlights. It is a good idea in general and especially useful when driving in tunnels, to keep a fire extinguisher in your car. Tunnel fires are particularly dangerous because the heat and smoke is contained, the fire can travel very quickly and exiting the tunnel may be impossible. If you have a minor fire and the car remains driveable, it is important that you don't stop in the tunnel but try to keep going. A fire outside of the tunnel is far less dangerous.

If you breakdown or stall on a level crossing and find yourself trapped by the barriers, you **must** get everyone out of your vehicle and clear of the track immediately, phone the signal operator using the

phone provided to give a warning and having done all of that, walk along the track to signal the next train.
At the scene of a collision your priorities should be to prevent the incident from getting any worse by switching off your engine (hot engines can start fires if there are petrol leaks) and warning other road users – use your hazard warning lights to do that. Then you should make sure that the emergency services are notified and try to get the uninjured and the lightly injured clear of the scene. Most importantly, avoid risking injury to yourself. If you are able to offer first aid – it is worth checking on victims that are quiet before those that are screaming. The badly injured should not be moved unless it is very dangerous for them to stay where they are.

In the event of a collision where there are injuries, the police should be called. If property is damaged, the police should be informed within 24 hours.

The information you should collect from other motorists involved in a collision is:

- Whether the motorists owns the other vehicle involved
- The other motorist's name, address and telephone number
- The make and registration number of the other vehicle
- The details of the other motorist's vehicle insurance

Motorway rules

The motorway rules section covers all of the theory of driving that is pertinent to motorway travel. As you will not be able to drive on a motorway until after you have passed your practical test (provisional license holders may not drive on the motorway) – and because you could easily end up driving on a motorway for the first time 'solo', it is important that you have a good grasp of the principles of motorway driving – it is after all quite different from driving on other types of road (even dual carriageways).

Motorway speeds are generally higher than other types of road and this introduces the need for special regulations and procedures.

The important principles are as follows:

Motorways cannot be used by: Learner drivers (unless accompanied by an ADI in a car fitted with dual controls displaying red L plates, or D plates in Wales) or learner riders, nor can they be used by tractors, horse riders, cyclists or mopeds (50 cc or less) (all of these are too slow in comparison to the other traffic on the motorway).

The maximum legal speed on a motorway for a car that is not towing a trailer is 70 miles per hour. This is reduced to 60 miles per hour if you are towing a trailer. Because you will be travelling at higher speeds and for long periods of time, it is important that your vehicle is in good mechanical condition, the tyres are not worn or damaged and that you (the driver) are alert, well rested and not under the influence of drugs, drink or medication.

Lane selection is very important and often abused. You should always drive in the left hand lane, unless you are overtaking. Having overtaken, you should move back to the left hand lane. When traffic is very busy, this may not be possible and you may end up in a situation where all of the traffic is travelling at the same speed and all three lanes are fully occupied. There is nothing you can do about that, but it is important that when the traffic level reduces, you revert to riding in the left hand lane unless you are overtaking. Note that lanes are sometimes closed as a result of accidents or repair work and in these conditions you should use whatever lane the signs direct you to use and avoid exceeding the posted speed limit (which will certainly be lower than the normal limit). Vehicles that are towing trailers and articulated lorries are not allowed to use the right hand lane of a three lane

motorway. Because it can take a while to get accustomed to the higher speed of traffic on a motorway, you should stay in the left hand lane for a while immediately after joining one.

Lanes are marked by reflective studs (cat's eyes). The lanes of the motorway are separated by white studs; a slip road joining a motorway is separated from the left hand lane of the motorway by **green studs**. The left hand edge of the motorway between the lane and the hard shoulder is marked with **red studs**. The right hand edge of the motorway between the lane and the central reservation is marked with **amber studs**. Sometimes you will also see blue studs – which are used to mark a police slip road.
The hard shoulder should only be used as a last resort (i.e. in an emergency). **Never** travel on the hard shoulder. If you *do* have to use the hard shoulder, take great care when moving off. You should avoid travelling a long distance on the hard shoulder as you accelerate but at the same time, you should not pull on to the motorway if you are travelling a lot slower than the vehicles in lane 1. Remember that you should never attempt to repair your vehicle or do any other kind of maintenance whilst you are stopped on the hard shoulder. As soon as you stop on the hard shoulder you and your passengers (if you are carrying any) should get out and go to stand on the far side of the metal barriers. If you have to call for help, you can find the nearest phone by looking at the arrows on the marker posts. When making your emergency call, you will be talking to a police controller or someone in a Highways England control centre who will be able to identify your position by the number on the telephone and organise help for you. Whilst talking on the phone remember to face the oncoming traffic, that way you will be able to get out of the way if a vehicle drifts on to the hard shoulder.
To increase traffic flow in areas that have very high traffic density, some motorways are 'actively managed'. This can mean that speed limits will vary depending on traffic volume / time of day, and that the hard shoulder can be called in to use as a lane (this will be indicated by overhead signs suspended over the individual lanes).

When joining a motorway from a slip road, it is important that you do your best to accelerate to the same speed as the traffic on the motorway, before moving into the left hand lane. If you are already on the motorway as you approach a slip road where traffic is joining the motorway, try to either leave a larger gap between your vehicle and the vehicle ahead of you (so that vehicles joining can move on to the motorway safely) or better still, move into the middle lane temporarily to free up space in the left hand lane.

Other types of vehicle

The aim of the ‘other types of vehicle section is to ensure that you are fully familiar with the problems, issues and considerations that are specific to vehicle types other than the one you will be using. So, car drivers understand the issues faced by lorry drivers, tram drivers and motorcyclists and cyclists etc…

The following points should be remembered:

Cyclists and motorcyclists

Motorcyclists and cyclists require special consideration because they are lighter than other vehicles and combined with the fact that they have a smaller footprint than four wheeled vehicles, means that they are less stable in windy conditions. They are also harder to see (on account of being smaller) than other vehicles. This makes it easy to miss an oncoming motorcycle or bike if you do not take the time to look carefully. Cycles and motorcycles are less able to swerve than cars, and it is much harder to steer and brake sharply on a bike than in a car. Make sure you don’t do anything that causes a motorcyclist or cyclist to need to make emergency manoeuvres.

Buses

Buses are required to pull up to drop off and collect passengers and then to merge back into the traffic on a continuous basis. Motorists should expect buses to pull in and stop, and should be ready for them to pull back out again. It is important to leave a gap to allow them to do this safely. When overtaking a stationary bus remember that it may have dropped off passengers that may cross either in front of or behind the bus.

Trams

Trams are fairly rare in the UK, but if you live in a city where they are used, you will have to exercise extra caution around them since they cannot steer and have only limited braking ability. In addition, the tracks that they run on are metal and shiny. When wet the tracks have little grip, which may not be a big problem for a car, but for a two wheeled vehicle can be a serious problem.

Goods vehicles and other long vehicles

The vehicles in this category are limited to lower speeds than other traffic on dual carriageways and on motorways. Because of their length, it can be hard for their drivers to see you are behind them if

you get too close. (If you can't see the driver's mirrors, then the driver is almost certainly not aware that you are there). They will often have to pull out to the left to turn right and to the right to turn left, to avoid having the rear wheels climb the pavement. Leave plenty of room and hang back a safe distance to allow them to complete their manoeuvre. This is especially true in wet conditions, where the spray thrown up from the wheels can seriously reduce your view of the road ahead. If you must overtake a long vehicle on a single carriageway road, wait for a long stretch of clear road to do so. It can take a long time to make it past the cab and have an opportunity to pull back over on to the correct side of the road.

Caravans

Because of their light weight and slab sided aerodynamics, caravans are badly affected by crosswinds. For this reason and because they can reduce the stability of the vehicle towing them, they are limited to lower speeds on motorways than other traffic. If you are overtaking a caravan and it is possible to do so safely, leave a one lane gap between your vehicle and the caravan – your slipstream will have less effect on the caravan and should a cross wind hit as you pass, there is a bigger margin for error this way.

Wheelchairs, scooters and other mobility vehicles

These three travel considerably slower than other types of traffic and you should look out for them and give them a wide berth at all times. They will usually be displaying a flashing amber light to draw your attention to the fact that they are travelling slowly.

Road and traffic signs

The road and traffic signs section contains the most questions out of all of the categories, but it is one of the easiest if you just remember a few simple rules. There is no need to commit to memory all of the signs in the highway code (although if you find it easy to do so, there's nothing wrong with doing so). For the rest of us, a few simple rules will allow you to 'read' the sign like you would a word, by looking at its shape and colour.

Here are the rules that you need to know:

Traffic signs

Round signs give orders (think 'O' = order). Whenever you see a round sign it is telling you that you **must** or **must not** do something.
Signs with red borders have a negative meaning – i.e. they warn you of something that you should avoid or they order you **not** to do something.
Signs with blue borders have a positive meaning – i.e. they tell you there is something you must do.

Triangular signs give warning. This is easy to remember because cars carry warning triangles to use when you break down.

Rectangular signs are used to give directions and distances to places. Blue bordered signs are used to show directions on motorways. Black bordered signs are used in and around towns. Green bordered signs are used to give directions outside of towns and cities.

Signs that contain a large number and nothing else in their centre always indicate a speed limit.

Most warning signs and order signs indicate their true meaning by using a picture in their centre. Most if not all are self-explanatory.

There are a few special cases that you *do* have to learn:

- An upside down triangle: Give Way at the dotted white line
- Hexagon: STOP and Give Way at the solid white line
- A round red bordered sign with a white bar: No Entry
- A round white sign with a black diagonal bar: National highway speed limit is in force
- A round red bordered sign with a blue centre and a red cross: No Stopping

- A round red bordered sign with a blue centre and a red diagonal bar: No Waiting

Road markings

White paint is used to indicate lane divisions. The amount of paint on the road is indicative of the level of hazard ahead. Dotted white lines with long gaps indicate a low hazard. Dashed white lines with long dashes, indicates you are approaching a more serious hazard. Solid white lines indicate that sight lines are interrupted and that you should not cross the line because you will not be able to see oncoming traffic well enough to do so safely.

Yellow road markings limit where you can stop and where you can park. Double yellow lines indicate 'no parking'; single yellow lines indicate parking restrictions. A yellow box painted on the road indicates a junction where vehicles stranded in the middle can cause gridlock. You must not enter a box junction unless your exit road or exit lane is clear. You may however enter a box junction if you are intending to turn right and your exit is clear, but you are prevented from doing so by oncoming traffic or other vehicles also waiting to turn right.

With that limited information, you can interpret pretty much any sign by applying the rules and without having to remember them all. This is useful because new signs are occasionally introduced, but if you know the rules that are used when they are being designed, then you are likely to be able to interpret new signs whenever you see one.

Rules of the road

This is a large section and covers a very diverse range of topics, concentrating on those areas where people often make mistakes when they have obtained their licences. In many ways, the category is used as a bit of a catch all, with no real theme – in here you will find a lot of general knowledge riding questions. The majority are straightforward and as for the other categories, if you adopt the approach of selecting the most conservative answer, you will rarely be wrong.

Speed limits

One aspect of this category that you will need to brush up on is speed limits. The Highway Code table of limits is reproduced here:

	Built-up areas *	Single carriageways	Dual carriageways	Motorways
Type of vehicle	**mph** (km/h)	**mph** (km/h)	**mph** (km/h)	**mph** (km/h)
Cars & motorcycles (including car-derived vans up to 2 tonnes maximum laden weight)	**30** (48)	**60** (96)	**70** (112)	**70** (112)
Cars towing caravans or trailers (including car-derived vans and motorcycles)	**30** (48)	**50** (80)	**60** (96)	**60** (96)
Buses, coaches and minibuses (not exceeding 12 metres in overall length)	**30** (48)	**50** (80)	**60** (96)	**70** (112)
Goods vehicles (not exceeding 7.5 tonnes maximum laden weight)	**30** (48)	**50** (80)	**60** (96)	**70**† (112)
Goods vehicles (exceeding 7.5 tonnes maximum	**30** (48)	**50** (80)	**60** (96)	**60** (96)

laden weight) in England and Wales				
Goods vehicles (exceeding 7.5 tonnes maximum laden weight) in Scotland	**30** (48)	**40** (64)	**50** (80)	**60** (96)

* The 30 mph limit usually applies to all traffic on all roads with street lighting unless signs show otherwise. † 60 mph (96 km/h) if articulated or towing a trailer.
If you see no speed limit signs, but there is street lighting, you should assume a speed limit of 30 mph.

Where you can't drive

There are a few places that you are not permitted to drive: You cannot drive on pavements, unless you have to drive across one to get to a driveway / garage. If a cycle and bus lane is marked with a solid white line then you must not drive in it during its hours of operation. If it is marked by a dotted white line then you should not drive in it unless it is unavoidable. Some bus lanes can be used by taxis and/or motorcyclists, as shown on the bus lane sign (and possibly on road markings). You cannot drive in a tram lane.

Parking and stopping

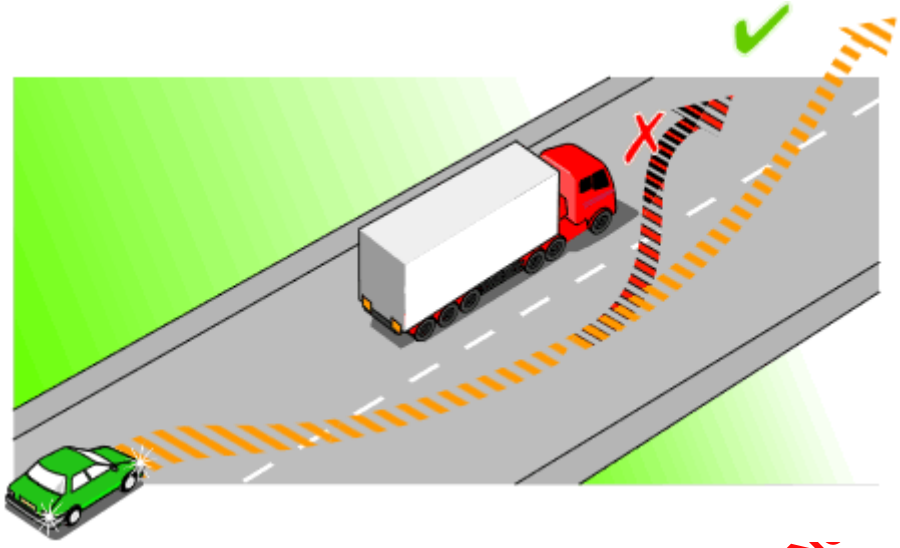
You cannot park in a disabled bay (even if there are no other parking spaces) unless you have a disabled badge. You **must not** stop on a clearway, but you can stop on an urban clearway to drop off and pick up passengers. When parking up at night, the safest place to park is in a locked garage. If you are parking on a road with a limit of 40 mph or higher you should leave on a parking light or get your vehicle off of the road. If you are involved in an accident you **must** stop.

Reversing

As a general rule of thumb, you should reverse as little as possible, and never from a minor road out on to a major road. If you are not sure what is behind your vehicle you should get out and look before continuing. When reversing in to a side road from a main road, be aware of the front corner of the car, as it will swing out into the path of traffic on the main road as you make the manoeuvre.

Overtaking

You should never overtake unless you know you will be able to complete the manoeuvre in safety. In a one way street with two lanes, you can overtake on the left or on the right.



Use of headlights

You should use your headlights from before dusk until after dawn. Even when it is too light for your lights to help *you* to see, they will be very useful in helping others to see you. As a general rule, when driving at night, you should use full beam headlights only when there are no vehicles ahead of you and no oncoming vehicles that will be dazzled by them. At all other times, you should use dipped headlights. If you are overtaken by a vehicle whilst using full beam lights you should dip them as the overtaking vehicle draws level.

Safety and your vehicle

The safety and your vehicle section deals with issues of vehicle maintenance and safety and the environmental impact of running a vehicle. This category is more concerned with those issues of maintenance that directly impact on safety.

Tyres and wheels

As your only contact with the road surface, the condition and quality of your tyres has an unsurprisingly significant impact on the handling and road-security of your vehicle. The legal minimum tread depth for a car is just 1.6 mm. The purpose of the tread pattern is to help to clear water from the contact patch. A tyre with minimal tread depth will be lethal in the wet – and is very likely to aquaplane if it hits a deep puddle at motorway speeds. If tyres are not correctly inflated, the rolling resistance of that tire will increase and the grip, steering and braking will be adversely affected. Over-inflating a tyre can also reduce grip as the intended shape of the tyre is not maintained. However, if the vehicle is being heavily loaded with passengers and luggage, the driver's manual may well recommend a slightly higher pressure in each tyre to compensate for the additional load. You should check your tyres regularly for damage, the correct pressures and uneven wear. Uneven tyre wear is often caused by incorrect inflation but more often by the 'tracking' (the angle between the front wheels being incorrect). Another sign that the tracking might be incorrect is the car pulling to the left or right when driving in a straight line or when braking on a flat road.

If the wheels are out of balance, you will feel a continuous vibration through the steering wheel. This can be cured by having the wheels balanced at a garage. When tyres are changed, they will usually be re-balanced as a matter of course.

Brakes

Modern cars tend to use disc brakes all round (or at least at the front) Disc brakes are relatively resistant to fade (the effect of losing braking power as the disc and pad heat up) because the disc is better at getting rid of the heat that builds up under braking. However, having worn brake pads and/or worn discs can cause the brakes to become less effective when braking from high speed or descending a hill for a long period of time. It is essential that you maintain the braking system to remain safe. Any brake-related warning lights on the dashboard should be investigated immediately. Anti-lock brakes allow a driver to maintain steering control even when braking hard for an emergency. It is a common misconception that anti-lock brakes help a vehicle to stop more quickly. This is not

really the case. In many cases, anti-lock brakes will lengthen your stopping distance, *but* they will prevent you from entering a skid and losing control of the vehicle. Anti-lock brakes cut in automatically, but when they do, it is important that you do not release the brakes and reapply them like you might on a vehicle without an ABS system. Anti-lock braking systems are very common on modern cars.
Water in the brakes can reduce their effectiveness. If the brakes get soaked by driving through a ford, stream or deep puddle, gently apply the brakes as you continue, to generate enough heat to dry the discs and pads.

If you allow the brake fluid level to drop below the minimum marking on the reservoir, air could enter the system and prevent the brakes from operating effectively. You should regularly check the brake fluid level to prevent this. Whilst you are doing so, you should also check the oil level, the coolant and the battery. If the oil level is low, then it should be topped up with the appropriate engine oil. Overfilling the oil is as bad for the engine as under-filling (it increases the oil pressure, puts excess strain on the oil seals and can lead to oil leaks) so aim to keep the level within the manufacturer's marked limits. When topping up the coolant – make sure you use a mix of water and anti-freeze or pure anti-freeze. Never use just tap water – it can lead to corrosion and overheating in the long term. If you need to top up the battery fluid – you should use de-ionised water not tap water: Tap water will damage the battery, and reduce the amount of power available for starting the engine.

Suspension

The suspension serves two purposes:

1. It absorbs the bumps to make the ride more comfortable for the driver and passengers.
2. It helps to keep the tyres of the vehicle in contact with the uneven surface of the road.

A suspension system usually comprises a shock absorber (a piston moving in a tube filled with oil) and a spring (to re-extend the piston when it gets pushed into the oil). Eventually the shock absorber will become less effective as it wears out and the spring will dominate the shock absorber, making the vehicle feel like it is bouncing. Worn shock absorbers will reduce the grip that the car has when cornering and braking – so they should be replaced.

Passenger safety: Seat belts, headrests and air bags.

Modern cars contain many safety features to protect the occupants in the event of an accident, but it is important they are used correctly.

UK law dictates that all passengers and the driver of a motor vehicle **must** wear a seatbelt. There are very few exceptions: Those with medical reasons who feel that wearing a seatbelt compromises their safety can apply to their GP for an exemption certificate – but these are granted very rarely (there are very few medical conditions that are more dangerous than being in a vehicle accident with no seatbelt on). You may remove your seatbelt to reverse your vehicle but must put it back on if you start to move forwards again. Any passengers aged 13 years or younger is the responsibility of the driver where seatbelts are concerned. 14 year-olds and above are legally responsible for their own seatbelts – although as a matter of course, drivers should check and insist on them being worn.

Airbags have done much to save lives, but they can cause injury if you don't wear your seatbelt or if you sit too close to the steering wheel or too high/low relative to the wheel. It is critical that you adjust your seat appropriately – this includes the headrest which can help to reduce or prevent whiplash injuries to the neck and upper back in the event of a front or rear impact. When fitting a child seat, either choose a rear seat which is not protected by an air bag, or ensure that the air bag is turned off in accordance with the vehicle manufacturer's advice.

Security and parking

Vehicle theft is all too common but you can help to prevent yourself from becoming a victim by ensuring your vehicle is locked, alarmed and immobilised. Always park in a locked garage if you can, or failing that in a well-lit area or patrolled car park. Never leave valuables on display. Remove tools, GPS units, PDAs, stereo head units and take them with you when you leave the car. Have the registration of the car etched in to the glass and consider having a tracker fitted. Don't leave vehicle documentation (especially the V5) in the car. Never leave the car with the engine running (or the doors unlocked) – it's dangerous, illegal and likely to lead to it being stolen. An insurer is unlikely to pay out if you have left the keys in the car and the engine running.

Never park where it is not permitted – especially not in a disabled bay (unless you are entitled); never within 10 metres of a junction and never in the zigzag area marked on the approaches to a pedestrian crossing or outside a school.

Environment

The environmental element of the 'safety and your vehicle' category aims to teach good practice to reduce the environmental impact of motor transport. We all have a part to play in protecting the planet (motorists contribute 20% of all environment damaging emissions).

There are lots of ways in which you can reduce your fuel consumption and/or your impact on the environment:

1. Avoid unnecessary journeys (consider walking/cycling if possible)
2. Use public transport whenever possible
3. Make sure your vehicle is well serviced
4. Choose a fuel efficient vehicle
5. Plan ahead to avoid harsh braking and acceleration
6. Try to maintain a constant speed by observing traffic patterns and planning your approach to light controlled junctions, roundabouts, etc. and try to travel outside of peak hours.
7. Make sure your tyres are correctly inflated. Under inflated tyres increase rolling resistance, increasing fuel burn
8. Minimise your journey distance: Plan your route carefully and memorise it so that you avoid getting lost, avoiding busy times so that you do not get stuck in stop start traffic.
9. When stuck in stop start traffic consider turning off your engine.
10. Remove a roof rack / roof box if it is no longer needed (the aerodynamic drag from these can increase fuel consumption markedly)
11. When stuck in stop start traffic consider turning off your engine.

12. Remove top boxes, tank bags and throw-overs when no longer needed (the aerodynamic drag from these can increase fuel consumption)
13. Travel more slowly – if you double your speed from 30 to 60, the air resistance is increased by a factor of 8. That's why a car with only 70 bhp can manage 100 mph, but it takes about 600 bhp to get to 200 mph.
14. Avoid short journeys. Because an engine runs deliberately 'rich' (i.e. with more fuel) when it is cold, it produces more pollution in the first few minutes than it does once it is up to temperature. If your journey is short, consider taking public transport, walking or cycling instead.
15. Make sure your catalytic converter is working. The catalytic converter is part of the exhaust system and helps to reduce pollution by converting poisonous carbon monoxide to carbon dioxide (which whilst it is an environment damaging 'greenhouse' gas and is still poisonous in high enough concentrations, is much safer).
16. Accelerate gently and avoid accelerating any more than absolutely necessary.
17. Use the highest gear possible (but avoid making the engine labour in a gear that is too high for the road speed and road gradient).
18. Use electric transport (Supertrams or Light Rapid Transit systems, hybrid vehicles) wherever and whenever available.
19. Dispose of used oil, used batteries, used tyres and indeed scrap your vehicle when the time comes, through an approved recycling centre to minimise environmental impact.
20. Consider converting your car (or buying one in the future) that uses LPG rather than petrol or diesel. If your journeys are usually around town and you rarely carry more than one passenger, consider a micro-car or moped.

Safety margins

The safety margins section concentrates on the effects of driving in conditions that degrade the braking and cornering performance of the vehicle. The aim is to give the learner some ideas about how to survive in bad conditions.

Here are the important points covered in this section:

Grip and skidding

In a given set of road conditions (taking in to account temperature, road surface, presence of rain, ice, snow, wet leaves, gravel, etc.) and with a certain weight pressing down on it, a tyre will be able to produce a certain amount of grip. The easiest way to visualise 'grip' is the amount of force that would be required to drag the tyre along the ground, if it were not allowed to turn at all. A wide, sticky tyre on a clean dry road surface with plenty of weight pushing down on it, will take a lot more effort to make it slide (without rotating) than a lightly weighted, skinny tyre on a wet road surface.

When the car is rolling straight ahead at a fixed speed, there is little or no 'drag' on the tyre – the tyre simply rolls and very low demands are being made of the grip. As soon as you engage in a manoeuvre – (accelerating, turning or braking) you are in effect asking the tyre to carry on rolling but also to drag slightly. The harder you brake, the harder you accelerate, the harder you turn, the more drag you are asking for from the tyre. For the sake of argument, let's assume that drag can be measured in units and that for the current conditions, tyres and vehicle weight; the tyres are capable of generating a drag value of 10 before they start to slide. So long as you don't ask for more than 10 units of drag from them whilst you are riding, they will not skid. Now imagine you go barrelling into a corner that requires 7 units of drag from the tyres. You will make it around the corner… unless half way around the corner you spot stationary traffic and suddenly need to make an emergency stop, requiring an additional 8 units of drag from the tyres. Now as you panic brake, you are requiring a total of *8 + 7 = 15* units of drag from tyres. Remember these tyres only have 10 units of drag in them, and so the result will be a skid, most likely a loss of control and unless you are extremely lucky, a serious accident.
Now if the road is wet, has gravel on it, or wet leaves, or worse still snow or ice, then the available grip that you are working with is much less and you must take great care to accelerate, brake and turn more gently than usual to avoid finding yourself in a situation where you ask for more grip from the tyres than is actually available.

Anti-lock brakes prevent the wheels from actually locking up (in effect the system momentarily releases the brakes to allow the wheel to turn), which means you retain control of the vehicle and are able to steer even when braking hard, but they do **not** increase the amount of grip available or shorten your stopping distance – they simply ensure your braking and steering requests are limited to the amount of grip available. Note that this is done by reducing the amount of braking effect applied – not by controlling the amount of steering effect that can be applied – so whilst useful, they are not a 'get out of jail free' card. ABS can **increase** your stopping distance – but allows you to steer whilst braking hard. If the road surface is covered in gravel or ice, anti-lock brakes can ***significantly*** increase your stopping distance. If you do not have ABS, you can do the same thing manually by releasing pressure on the brake pedal then reapplying it: This is known as cadence braking. You should avoid cadence braking if your car is equipped with ABS – since this will confuse and defeat the ABS system.

The grip **available** is a direct result of the tyres the road surface and the conditions, but the grip **required** is a direct result of your driving style and is totally under your control. Therefore skid avoidance is very much within your control too. Skids only result when a driver or rider over-estimates the grip available and/or underestimates the grip required to complete their manoeuvre. To avoid doing that requires concentration, a defensive driving style and a continuous mental process of 'what if' thinking. Rather than barrelling along thinking 'I'm sure the road ahead will be clear', you should be thinking 'What if the road ahead is not clear?'. By thinking that way, you will drive more safely and avoid situations where you ask the tyres to provide more grip than is available.

If that all sounds very dull and you're thinking, 'But I love driving fast', then you are not alone. Many people **do** enjoy the thrill of driving fast, cornering hard, braking hard, accelerating hard, and generally taking their machines to the limit. It's fun to do and you will learn a lot about vehicle control from it. But (and it is an enormous but) the ***only*** place you should do it is on a race track (ideally under supervision from an expert to start with) – and ***not*** on public roads. If you exceed the grip available on a track (and you probably will) then you will run off on to gravel and the only damage will be to your pride – but you will have learnt something. On the other hand, if you exceed the grip available on a public road, you will probably end up upside down in a ditch or in someone's front room, or dead, or worse still with the death of a pedestrian or some other motorists on your conscience for the rest of your life.

Moral: Drive conservatively and defensively on the road, anticipate the grip required – seek to minimise it and have some in reserve at all times to avoid losing control and skidding. Save the race style driving for the race track.

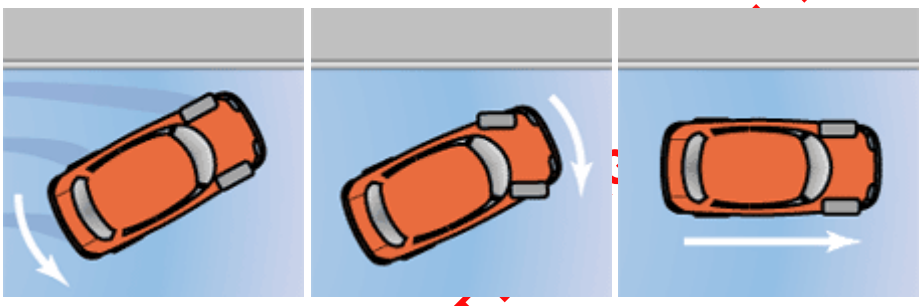
Coping with a skid

If (in spite of your best efforts) you do find yourself in a skid, you need to act appropriately, dependent on the type of skid:

1. I've braked too hard, and the car is skidding as a result:

    a. If you have ABS: Hold the brakes on and try to steer out of trouble.
    b. If you don't have ABS: Release the brakes and reapply them (cadence brake) and in the meantime, try to steer around the problem and avoid losing control.

2. I have barrelled into a turn too fast and the car is ‘under-steering’, I am drifting outwards and won’t make it around the bend: Try to slightly reduce your throttle setting (whatever you do, don’t just lift your foot off of the pedal). By reducing your throttle setting you stand a chance of getting more grip for the turn and reducing your ‘acceleration’ requirement
3. I have barrelled in to a turn too fast and I tried to brake, the car is ‘under-steering’, I am drifting outwards and won’t make it around the bend: Reduce the braking pressure and see if there is enough grip at your reduced speed to make it around the bend. Don’t freeze up and brake harder as you will almost certainly lose control
4. I have accelerated too hard / too early coming out of a left hand bend in a rear wheel drive car and the back wheels have swung out to the right: You are in an over-steer situation, correct the slide by steering to the right (give the front wheels the opportunity to ‘catch up’ with the rear). If you steer in the wrong direction, you will spin and completely lose control.
5. I have accelerated too hard / too early coming out of a right hand bend in a rear wheel drive car and the back wheels have swung out to the left: You are in an over-steer situation, correct the slide by steering to the left (give the front wheels the opportunity to ‘catch up’ with the rear). If you steer in the wrong direction, you will spin and completely lose control.



Rain

Because rain water acts as a lubricant between the tyre and the road surface, it reduces the amount of grip available. The tread blocks on the tyre are designed to sweep away water at the contact patch between the tyre and the road to ensure that the tyre makes good contact with the road. Even light rain can have a serious effect (it can double the stopping distance required) but heavy rain can lead to standing water which can completely overwhelm the tread blocks, so that they fail to clear the water. When that happens, you are left with a cushion of water between the tyre and the road surface and are in effect aquaplaning. Under these conditions, you will be unable to steer or brake and are effectively at the mercy of the elements: Your stopping distance can be enormous. To avoid aquaplaning, you should slow right down in conditions where there is standing water and you should check your tyres frequently to ensure that they are in good condition, have plenty of tread remaining and are correctly inflated.

If you drive through deep water, your brakes can become soaked and therefore less effective when they are needed. To prevent this, after riding through deep water, gently apply your brakes to ‘wipe’ the discs and to build up a little heat to evaporate the water.

If it rains after a long spell of dry weather, it can cause the road to become extremely slippery. Watch out especially for a rainbow effect on the road which can indicate oil or diesel has mixed with the water as this will result in a really slippery road surface.

In the wet you should watch out for white lines, manhole covers, tram rails and road repairs (over-banding) all of these can be especially treacherous when wet (important for car drivers, but **especially** important for motorcyclists).

Snow and ice

It goes without saying that conditions of snow and ice provide the least grip. You will know that you are in trouble if there is a sudden drop in road noise. Because there is no friction, the tyres make less noise when they are on ice. Stopping on ice can take 10 times longer (or more) than stopping on the same road in good conditions. Think about that – travelling at a speed that would normally take 10 metres to stop from, could take up to 100 metres to stop from.

There are two ways to deal with this: Crawl everywhere, looking as far ahead as humanly possible and trying to predict far enough ahead that you can drive safely, or better still, just avoid driving at all.

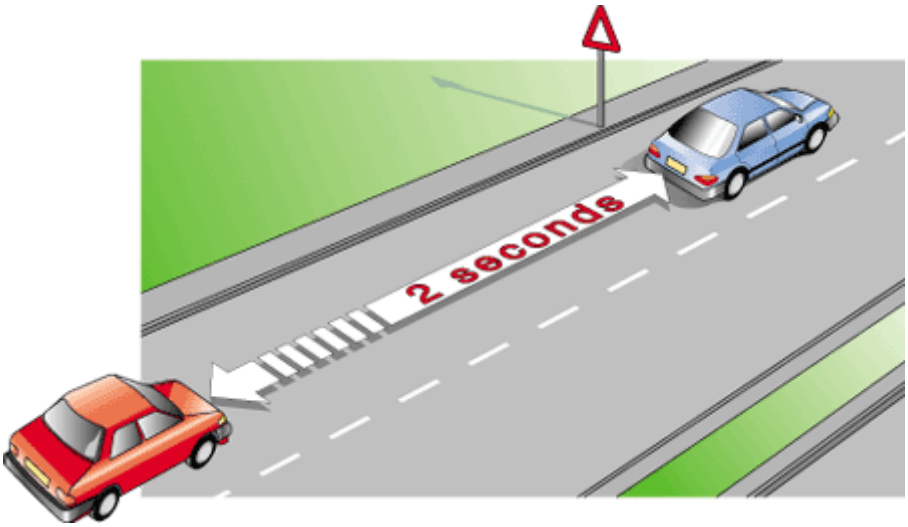
In snow and ice conditions, you really should ask yourself 'is my journey *really* necessary'. Unless the journey is a matter of life and death, then you really shouldn't risk your life to make it. If you really must make the journey then remember that accelerating also requires grip – aim to accelerate as gently as possible and to move up through the gears as quickly as possible – accelerating gently in 3rd requires a lot less grip than accelerating in 1st. Once the wheels start to spin, it is much harder to regain control – better not to lose it in the first place.

Driving in hot weather

When the weather is hot, the road surface (on account of being black) absorbs a great deal of heat from the sun. This can cause the surface to soften leading to a decrease in grip and hence braking and cornering performance. This is affects motorcycles more than cars, because of their smaller tyre contact patch. It can also mean that the surface of the road is not strong enough to withstand the pressure of a motorcycle side-stand. The road surface does not need to be that hot for it to be soft enough for a bike's side stand to penetrate the soft surface. In extreme cases, the bike can lean far enough to fall over completely. Experienced motorcyclists carry a shaped plastic or wooden plate to put under the side stand, increasing the load-bearing area and preventing the stand from sinking into the tarmac.

Separation and stopping distances

A good rule for keeping a safe distance from the vehicle ahead is to adopt the 'two second rule'. Keep a gap of two seconds **or more** between you and the vehicle ahead. This will allow you time to react if the vehicle ahead brakes sharply or has an accident.



How to use the 2 second rule: Pick a fixture on the side of the road (such as a bridge or telephone box) and allow a gap of 2 seconds between you and the rear of the vehicle in front.

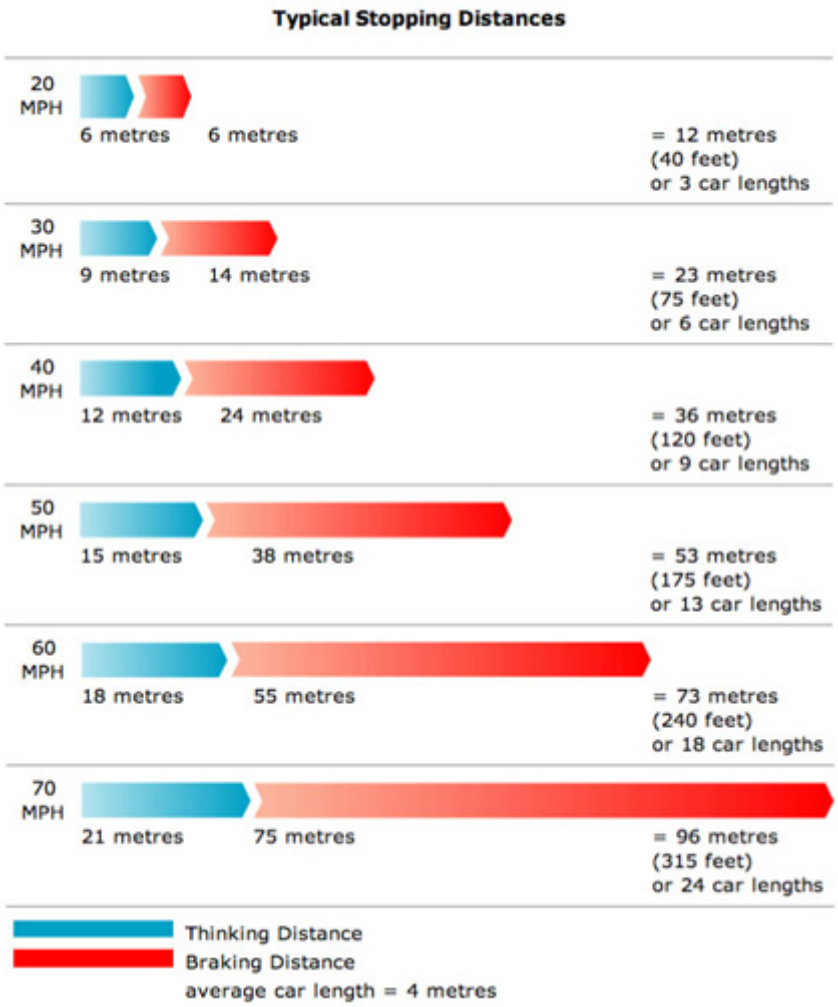
This is attained by saying slowly in your mind 'only a fool breaks the two second rule' Should the weather be wet then you should really leave a 4 second gap so try saying the same phrase twice.

The DVSA requires learner drivers to commit the stopping distances in the table below to memory. These are in effect guidelines – after all, braking distances vary enormously from vehicle to vehicle, road surface to road surface and reaction times from person to person…

Anyway – instead of learning the values by heart, there is a simple formula that you can use to work them out. Those of you that prefer to understand than to learn by wrote might prefer to learn the formula:

Speed² / 20 + speed = Overall stopping distance in feet.
So, for example, if you are travelling at 30 mph:

30² / 20 + 30 = ?
(30 x 30) / 20 + 30 = ?
900 / 20 + 30 = 75 feet
When trying to visualise a distance it is useful to remember that the length of an average car is approximately 15 feet, therefore, 75 feet would be about 5 car lengths away.



For more information, see the dedicated stopping distances chapter.

Sight lines and road position

When driving you should always position your car to maximise your view of the road ahead. So on the approach to a right hand bend, you should position your vehicle as far to the left as you safely can – to maximise your view around the bend. Likewise, on the approach to a left hand bend, you should position yourself as close to the centre of the road as possible to increase the distance you can see ahead. You should vary your speed depending on how far ahead you can see. On a two lane road you should aim to travel at a speed at which you can always stop in the distance you can see to be clear. On a single track lane, you should drive at a speed that would allow you to stop in **half** the distance you can see to be clear.

Vehicle handling

The vehicle handling section deals with issues of how to cope appropriately with riding conditions that you will meet fairly regularly but perhaps not every day, there is a great deal of crossover between this category and the 'safety margins' category that precedes it – rather than repeat ourselves here we suggest that you read the two together as one.

These are some additional points you need to remember which are not covered fully in the previous section:

Hills

When riding down a long hill, be aware that continued braking will cause heat to build up and generate brake fade. Try to avoid overusing the brakes. Consider selecting a lower gear to prevent the car from picking up speed, and reduce the amount of braking that you need to do. Remember that trying to stop when coming down hill will take longer than on a flat piece of road because the brakes have to work against gravity (it's a bit like trying to brake with the accelerator still pressed down). Braking when going uphill is the opposite though – here gravity acts as a brake too, so you can stop in less distance when going uphill. If you have to park on a hill, make sure that you leave the car in gear, parked up against, and at an angle to, the kerb – with the wheels pointing in such a direction that if the car rolls, it will roll towards the nearest kerb.

Driving in fog

When driving in fog, you should use your dipped headlights, slow right down, avoid tailgating the vehicle in front and (if the visibility is less than 100m) turn on your rear fog lights (and front fog lights if installed). Always remember to turn off your fog lights when visibility improves to more than 100m since in good visibility the high intensity of a fog light can be very distracting and can easily mask your brake lights. You should avoid using full beam headlights in fog because the light tends to bounce directly off the fog and dazzle you, rather than adding anything useful. If parking in fog, leave a parking light on or better still completely avoid parking on a road.

Driving at night

When driving in the dark it is important to use appropriate lighting to ensure that you can see and be seen. Dipped headlights should be used unless you are outside of a built up area and there are no other vehicles around to be dazzled by your full beam headlights (in which case they should be used).

Driving at night in rain can be very difficult because the reflections from the wet surfaces can be confusing and can prevent you from seeing dimly lit or unlit objects (like pedestrians for example). If you are dazzled by another vehicle's lights at night then try to avoid looking directly at them (make a deliberate attempt to look at the kerb line) and slow right down until the other vehicle has passed. Avoid the temptation to use full beam yourself – as that will probably result in two 'half blind' motorists careering towards each other…

Driving in neutral (coasting)

By engaging neutral, you reduce your control of the vehicle; you can no longer quickly accelerate or use engine braking and your control when steering will be reduced. You should not coast in neutral at any time, unless you have broken down and have no option, in order to get your vehicle out of the way of other traffic.

Traffic calming

Whenever you see traffic calming measures – you should slow down and avoid the temptation to accelerate then decelerate between road humps or width restrictions. Travel at a slow and constant speed until you emerge from the zone.

Rumble strips are often used to emphasise speed on the approach to a roundabout or where a large change in speed limit takes place (i.e. from 60 or 70 down to 30 mph). The noise and vibration makes it seem as if you are travelling faster than you are – encouraging you to slow down. You need to be especially careful in the wet as the amount of paint on the road and the vibration will inevitably reduce grip and increase stopping distances.

Vehicle loading

The vehicle loading section contains questions about towing trailers and caravans, loading luggage into your car and the use of roof racks, roof boxes etc. The questions have to do with maximising safety, staying within the law and minimising fuel costs and environmental impact.

Towing a trailer or caravan

Caravans and trailers can be quite unstable (especially in strong cross winds). Should you feel your caravan or trailer start to snake from side to side when towing, your response should be to slow down gradually until the snaking stops. Try to avoid making sudden changes in speed or trying to compensate by steering left and right. There is a real danger that you will make matters worse rather than better.

You can use a stabiliser (a device which attaches to the tow bar and helps to damp out these oscillations) to reduce the danger of a towed load becoming unstable. A break away cable can also be used to apply the brakes to a caravan or trailer in the event that it becomes detached from the towing vehicle. Both devices can help to increase the safety of towing.

It is illegal to carry passengers in a caravan whilst it is being towed. If you have ever seen an accident involving a caravan, you will see that they are usually totally destroyed. They are simply not designed to be as strong or to offer the same level of protection that a car does.

Roof racks and roof-boxes, carrying heavy loads

Think carefully before using a roof box or roof rack. Not only do they increase drag and hence reduce fuel economy, they also raise the centre of gravity of the car, making it less stable when turning and braking. If you cannot fit all of your luggage inside the car then try to pack the heavier items in the boot and put the lighter items in the roof box. Do not drive around with an empty roof box or roof rack on your car – this just wastes fuel. Wherever the luggage is kept, take care not to overload the car. Any additional load will increase braking distances and decrease stability.

Passengers

All passengers must wear seat belts. Passengers under the age of 14 are the responsibility of the driver. Over 14, the passenger is responsible for their own safety. Children under 3 years of age must be carried in an appropriately designed baby seat / baby carrier which must be secured in accordance with the manufacturer's instructions and with due consideration to the location of the airbags. Airbags and child seats do not mix – so it is better to have the child seat in the rear unless there is a way of disabling the air bag in a way which guarantees it will not fire in the event of an accident.

Vulnerable road users

The ‘vulnerable road users’ category contains lots of questions to assess your ability to understand and respond to the needs of road users that are less well protected than a car driver is. In particular, pedestrians, cyclists, motorcyclists, horse riders etc…

Reversing

Whilst reversing might appear to be a reasonably safe manoeuvre, it is far from it. Because of the reduced view you have, it is easy to hit a pedestrian (especially small children) who may not be visible from your driving position. If you are in any doubt about what is behind your car, get out and check before you start. In general, reverse as short a distance as you can get away with. The further you reverse, the greater the chance of hitting something you cannot see. When reversing, always give way to other traffic and pedestrians.

Pedestrians

Pedestrians are the most vulnerable road users. You should be particularly careful around crossings (of all types), bus stops, town centres and schools. When passing parked cars use all of your powers of observation to check for signs that doors might swing open or children / adults might walk out from between them. Look for signs of feet and shadows between cars, and head and shoulders sitting in the driving seats of cars. You may also notice tell-tale signs of exhaust coming out of parked cars – indicating that the engine is running (and hence might pull out). Look out for children playing on the pavement, and balls rolling onto the road – a child will never be far behind a ball… Never park on the zigzag lines of a crossing or outside of a school. When passing these zigzag lines – slow down and use all of your observation skills to look out for children and other pedestrians that might walk into the road.

Take particular care around disabled pedestrians – a pedestrian carrying a white stick is partially sighted or blind. A white stick with a red bar indicates that the pedestrian is blind and deaf. Older pedestrians may take longer to cross and you should give them time and space to do so without attempting to rush them. They may not hear you approach either, so exercise restraint and caution.

Remember that crossings are there to allow pedestrians a safe passage across the road and you should allow them to do that without showing signs of impatience. Do not start moving until all pedestrians have reached the far side of the crossing. A flashing amber light should not be taken as a

sign that you can start moving unless the crossing is completely empty of pedestrians. Even if the light is green, you should always wait until the last pedestrian has reached the pavement.

On the approach to a zebra crossing scan both sides of the road for pedestrians that might be intending to use it. If you spot any, slow down and be prepared to stop. Remember that pedestrians have right of way at a Zebra crossing.

If you see a pedestrian at night carrying a red torch, this probably indicates an organised walk. You should be prepared to slow down and stop; there may be a large number of pedestrians in the road ahead.

Horse riders and other wildlife

Horses are easily startled by motor vehicles and should be passed very slowly in a high gear to reduce engine and road noise. Wait until you can pass whilst leaving a wide gap between your vehicle and the horse. Drive past slowly and carefully. Remember that horse riders will usually stay to the outside of a roundabout when negotiating one – regardless of the exit they intend to use. Just hold back and let them clear the roundabout in safety.

If you see sheep or other wildlife in the road, slow down and be prepared to stop. You may be able to make progress by driving very slowly, but avoid sounding your horn as this may cause them to scatter into the path of other motorists.

Motorcyclists and cyclists

Because their vehicles are smaller, they can be harder to spot and you need to take extra care to ensure you have looked carefully enough for motorcyclists before you start any manoeuvre. In particular, you should take care when turning left or right from a main road, by checking over your shoulder that a motorcyclist or cyclist is not overtaking or undertaking you. If one is, then stop and wait for it to pass. Take care when changing lanes in heavy traffic. Motorcyclists and cyclists can legally filter between lanes of slow moving or stationary traffic. If you pull into their path to change lanes, you will leave them with nowhere to go. In windy conditions, motorcyclists can be blown off course so if you are overtaking, leave plenty of room. Motorcyclists are advised to use dipped headlights even during the day and to wear bright clothing (reflective at night and fluorescent during the day) to make themselves more visible to other road users.

When overtaking a cyclist leave plenty of room in case they are forced to swerve to avoid something in the road. Never overtake a cyclist just before you intend to turn left. When you see cyclists on a roundabout, give them extra room – they may well go all the way around the roundabout in the left hand lane (like a horse rider).

Before carrying out a turn to the left or to the right cyclists and motorcyclists should check over the appropriate shoulder. If you see a motorcyclist take a 'life saver' glance over his left shoulder, you can be fairly sure that he/she is about to turn left or pull up on the left.