



E-Bikeability: A National Standard

This document sets out a series of progressive riding outcomes that must be demonstrated by a person training to ride an electric bicycle (e-bike). It forms a National Standard (E-Bikeability) syllabus to be used by National Standard (Bikeability) Instructors when training a person on an e-bike.

While Bikeability is comprised of 3 levels the E-Bikeability syllabus consists of one level which is the equivalent of Bikeability Level 1, covering e-bike control skills, which is where the main differences lie. This set of outcomes covers the skills required to handle an e-bike in a traffic free environment and is based on the principle of minimising risk while promoting the efficient effective handling of an e-bike. For riding an e-bike on road in traffic the guidance is the same as Bikeability and assumes that the skills required to control an e-bike have been mastered.

E-bike National Standard or E-bikeability (level 1)

Over-riding Outcome: *The person will demonstrate the skills and understanding to be able to make a trip and undertake activities safely in a motor traffic free environment and as a pre-requisite to a road trip.*

The E-bike National Standard is the expected competency of the e-bike rider upon completion of a training course. The trainee should be able to demonstrate the outcomes below consistently.

Environment: the training will be undertaken in a traffic free environment, this may be a playground or in certain circumstances on public roads that are clearly traffic free.

All outcomes are essential.

	Outcome	Observed Demonstration	Reasoning
1	Demonstrate understanding of the parts on an e-bike and their function and the law regarding riding an e-bike	1.1 The rider should be able to identify the electric additions to a standard bicycle including: <ul style="list-style-type: none">• The battery type and location and how to attach and detach it• The charger type and location and how to charge the e-bike• The motor and its location• The battery key (where there is one)	E-bikes vary in battery and the format and location of motor controls, Control units also vary and show information in different ways. Riders must demonstrate they understand where

		<ul style="list-style-type: none"> • The handlebar control unit (or console) and be able to read its symbols • The system to adjust motor settings and how to use it <p>1.2 The rider should be able to estimate the range of the e-bike and consider carrying a spare battery and/or charger for longer trips</p> <p>1.3 The rider should understand the law about using an e-bike especially about the maximum speed and the age restriction</p>	these parts are on their e-bike and how they work as well as some common variations
2	Demonstrate an understanding of safety equipment, e-bike security and clothing	<p>2.1 They must demonstrate an understanding of how their choice of clothing may have an impact on their riding and the training session ahead, and that their clothing and equipment must be fitted and worn correctly</p> <p>2.1 They should understand the types of locks available, which are the most secure locks and demonstrate how to lock their e-bike</p> <p>2.2 They should understand that they must secure batteries and the handlebar console whenever they leave their e-bike unattended</p> <p>2.3 They should understand what options are available for carrying things while riding an e-bike</p>	People should understand what type of clothing may be potentially hazardous. If they wear a helmet they should understand how to fit and adjust it. These demonstrations may take place indoors before moving to the training area.
3	Carry out a simple e-bike check	3.1 People must be able to carry out a simple check on their bike's brakes, tyres, wheels, steering and chain. And check that the battery	While we would not necessarily expect people, to make repairs to their e-bike,

		<p>and console are clicked in securely</p> <p>3.2 They should understand that a bike should be set up to fit them and learn how to adjust the seat height</p>	<p>we should expect that they are able to spot simple faults that need to be dealt with and know where to get their e-bike fixed.</p> <p>Some people will also have bikes that are the wrong size for them. While these may not be adjusted to ideal size, the person should be aware of what the ideal is</p>
4	<p>Get on and off the e-bike including compensating for the weight of the e-bike</p>	<p>4.1 They should be able to push the e-bike and turn the e-bike getting a feel for its weight and weight distribution</p> <p>4.2 They must get on and off the bike with control. While doing so they should be applying the brakes.</p>	<p>Because of the electrics, especially the battery, e-bikes are heavier than standard bikes. The rider should spend some time getting used to moving the e-bike while pushing the e-bike in order to get used to this</p>
5	<p>Start off and pedal</p>	<p>5.1 The e-bike should be straight. They should stand with one foot on the ground and set the pedal to the starting position (pedal above horizontal in roughly the 2 o'clock position) with their foot on the pedal.</p> <p>5.2 They should keep their brakes applied until ready to go.</p> <p>5.3 They must keep both feet on the pedals while in motion and should pedal with the balls of their feet.</p> <p>5.4 They must look up while riding</p>	<p>This should be performed on a flat location with no camber.</p> <p>The rider should attempt this without applying power initially. Introduce the electric assist slowly so they do not suddenly lurch forward. Because of this potential they should ensure that nothing is in front of them when they start off</p>

		<p>along.</p> <p>5.5 They should apply power gently starting at the lowest power setting</p>	<p>The pedal position described is the most effective in enabling a cyclist to set off quickly and with control.</p> <p>Pedaling with the ball of the foot allows the greatest control and power to be applied when cycling.</p> <p>At this stage the activity should be performed using the lowest power settings since they have not yet learnt to use gears effectively.</p>
6	Stop the e-bike	<p>6.1 They must be able to demonstrate an ability to use the brakes effectively to come to a controlled stop.</p> <p>6.2 They must slow down by using their brakes but not by using their feet on the ground. They can also slow down by stopping pedaling</p> <p>6.3 On stopping the e-bike should be straight and they should put a foot down on the ground.</p>	<p>The person should understand that braking with the front brake only could cause them to lose control and fall over the handlebars. They should also understand that braking with the back brake only may result in a rear wheel skid.</p> <p>Keeping the e-bike straight is especially important because of its weight</p>
7	Ride along for at least one minute	<p>7.1 They must cycle along observing ahead and steering to keep their balance. They should continue to cover their brakes while riding along</p>	<p>This outcome does not need to be taught separately but may be observed during other outcomes throughout</p>

		<p>7.2 They should be able to move from riding without any electric assist to riding on the lowest setting</p>	<p>the training session.</p> <p>They should cover their brakes while riding at this stage in order to be able to stop the e-bike quickly in case they are unable to steer or balance correctly.</p>
8	<p>Make the e-bike go where they want</p>	<p>8.1 The rider must be able to manoeuvre with control turning both right and left.</p> <p>8.2 They should look in the direction they wish to turn ahead of any turn</p>	<p>Turns should be performed at low speeds to minimise the chance of the wheel slipping</p>
9	<p>Use gears (where present)</p>	<p>9.1 Use low gears (low numbers) when starting off and riding at slow speeds, moving to higher gears as their speed increases, dropping back to lower gears as they come to a stop.</p> <p>9.2 If their e-bike has a derailleur they must pedal in order to change gears.</p> <p>9.3 As their speed increases with the use of electrical assist ensure that they move through the gears</p> <p>9.4 They should understand that the range of their battery is affected by their gear use</p>	<p>Using a high a gear a low speeds is not good for the motor, and will drain the battery more quickly</p>

10	Stop quickly with control	<p>10.1 The person must use both brakes together to come to a sharp controlled stop. While doing so they should brace their arms and keep both feet on the pedals until the e-bike has stopped.</p> <p>10.2 They should not adjust power or gears when coming to an emergency stop as there should be no time to do this</p>	<p>During an emergency stop the person's weight will be thrown forward, therefore they should brace their arms. They can also be taught to move their weight back in the saddle</p>
11	Manoeuvre to avoid objects	<p>11.1 The rider must be able to manoeuvre with control to avoid objects at a range of speeds.</p> <p>11.2 They should get back to their original riding line after 'swerving' past an object</p>	<p>Manoeuvring with control is gained through practice. Manoeuvring at low speed is an important skill as it requires greater balance than at higher speeds.</p> <p>Worth mentioning the kind of objects that they may encounter on road such as potholes and debris</p>
12	Look around including behind without loss of control	<p>12.1 The trainee must demonstrate an ability to look behind (over both shoulders) and take in information while riding in a straight line, without loss of control.</p> <p>12.2 They should be able to glance behind as well as look back for a longer stare</p>	<p>Good rear observation a key competence to be learnt, enabling the trainee to achieve most other outcomes more easily. However this outcome includes all round observation and making sure the trainee has 'seen' rather than just looked.</p>
13	Control the e-bike with one hand (Signalling)	<p>13.1 While riding along the person must be able to control the bike with one hand, for both right and left hands, without loss of control.</p> <p>13.2 They should signal with their</p>	<p>They should be taught that having both hands on the handlebars is important for turning and stopping.</p>

		arms parallel with the ground and a flat palm facing forward	
14	Share space with pedestrians and other cyclists	<p>14.1 The person must demonstrate an ability to share space with pedestrians and other cyclists. They should be aware that their potential speed on a e-bike may be intimidating to some walkers and other cyclists</p> <p>14.2 They should demonstrate this with pedestrians and cyclists going in the same direction, approaching from the opposite direction and crossing their path. They should demonstrate:</p> <ul style="list-style-type: none"> i) slowing down ii) making their presence known iii) signalling their intention. <p>14.3 Trainees should not pass too close or too quickly.</p>	<p>It is important that the person demonstrates courteous and considerate cycling in areas where other pedestrians and other cyclists are present. In most cases this requires slowing their speed. They should clearly communicate their intended action when encountering pedestrians. They may communicate through verbal and non-verbal communication (such as eye contact and smiling). Where there is limited space they may need to wait until there is sufficient space to pass. When approaching a pedestrian or cyclist from behind, they should alert them to their presence (by ringing their bell or using their voice for example calling out "excuse me"). They should be aware of possible hesitation, stopping or a sudden change of course by other pedestrians and other cyclists.</p>