The Art of Cycling

PART A:

BIKE BASICS FOR URBAN CYCLISTS

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Chapter #1

Preparing for cycling

Why cycle? – A bigger picture: motivation and confidence in cycling

Urban cyclist commuting to work - Source: Unsplash

Health & Wellbeing: Mental and physical benefits to cycling

People choose to cycle because it has many benefits. Cycling is fantastic for our health. It is a low impact way to build muscle and boost fitness. As well as the many physical health benefits, cycling is also excellent for a person's mental wellbeing, and can really elevate a person's mood and decrease stress levels.

It only takes two to four hours a week to achieve a general improvement to your health. Cycling is:[1]

- Low impact – it causes less strain and injuries than most other forms of exercise.
- A good muscle workout – cycling uses all of the major muscle groups as you pedal.
- Easy – unlike some other sports, cycling does not require high levels of physical skill. Most people know how to ride a bike and, once you learn, you don't forget.
- Good for strength and stamina – cycling increases stamina, strength and aerobic fitness.
- As intense as you want – cycling can be done at very low intensity to begin with, if recovering from injury or illness, but can be built up to a demanding physical workout.

[1] https://www.betterhealth.vic.gov.au/health/healthyliving/cycling-health-benefits#cycling-for-health-and-fitness

- A fun way to get fit – the adventure and buzz you get from coasting down hills and being outdoors means you are more likely to continue to cycle regularly, compared to other physical activities that keep you indoors or require special times or places.
- Time-efficient – as a mode of transport, cycling replaces sedentary (sitting) time spent driving motor vehicles or using trams, trains or buses with healthy exercise.

Cycling is mainly an aerobic activity, which means that your heart, blood vessels and lungs all get a workout. You will breathe deeper, perspire and experience increased body temperature, which will improve your overall fitness level. The health benefits of regular cycling include:

- increased cardiovascular fitness
- increased muscle strength and flexibility
- improved joint mobility
- decreased stress levels
- improved posture and coordination
- strengthened bones
- decreased body fat levels
- prevention or management of disease
- reduced anxiety and depression.

Urban mobility

- traffic congestions
- sustainability
- give space back to people (cyclists and pedestrians)
- active and micromobility trends
- air pollution
- etc.

Urban cyclists commuting to work

Environmental/Sustainability/Low carbon

Riding a cycle costs practically nothing once the cycle has been purchased. A cycle is considerably less expensive than maintaining a car and will continue to be a reliable companion for many kilometres, as long as the cycle is checked regularly.

Furthermore, choosing to cycling rather than driving is significantly better for the environment, as it prevents the emission of carbon dioxide and other pollutants. There are an estimated one billion bikes in the world and in total **they save over 238 million gallons of fuel every year.** Travelling by bike instead of by car – even just once or twice a week – is a simple way to reduce your carbon footprint. Noise pollution is also reduced as you glide along and you get all the physical and mental health benefits of exercise too.

Example of bike/car enviormental effect - Source: Pexels

Clothing

On cold or wet days, make sure that the cyclists have their coat and gloves, and an extra layer or two, with a change of clothes available just in case. On warm sunny days make sure the cyclists have put on a good amount of sunscreen at the start of the day and that they keep drinking water throughout the day. Some other aspects are found below.

First of all we have to deal with clothing for daily use of the bike – touring or sport are another category. Everyday clothing is ideal for short journeys (like a journey to work, school, shop, etc.), but with some restrictions:

- Clothing for cycling should be light and loose fittings.
- Trousers with flared bottoms, long skirts and long laces in shoes can get caught in the chain, which is a hazard.
- Avoid wearing a sandal or shoes with deep treads (which can be difficult to remove from pedals), smooth-soled shoes (that can slip from the pedal or when the cyclist sets a foot down). Also avoid wearing high-heeled shoes and slippers.
- Avoid dark coloured clothes.
- Long jackets may become snagged on the saddle.
- Clothing must be appropriate for the prevailing weather.

To compensate the restriction there are some good advice on clothing:

- If you wear trousers, you can use flapwraps. Reflective bands help you avoid your trousers to be caught in the chain and make you more visible.
- In summer shorts are the most comfortable lower garment.
- In winter, always wear clothes which are essential for controlling the brakes (and gears).
- In winter pay attention to your joints: keep them always warm as much as possible.
- For short journeys in wet weather wear a light, preferably breathable rain jacket.

If riding on a bike is connected to touring or sport, the best choice is cycle clothing, because bike-specific clothing enables more comfortable ride. Bike jerseys are designed to enhance performance by wicking away sweat to keep the cyclist drier. Cycling-specific features:

- Stand–up collar to shade your neck in summer.
- Front zipper for ventilation when your temperature rises.
- Shoulders cut wider for arms–forward comfort.
- Sleeves specially shaped for forward lean.
- Back pockets for easy on–the–go access.
- Longer cut in back for coverage when riding.
- Reflective trim or highlights for night riding.

Bike shorts differ from simple shorts by added stretch for full freedom of movement, and a padded crotch liner to reduce friction and wick moisture. If possible, try several on to determine what padding style best fits your anatomy.

If the weather is wet but not cold (mostly in summer), a light waterproof cycle jacket is advised to keep in the backpack or in the pocket. In autumn or spring warmer clothes should be worn, which are variable due to the actual weather conditions: mornings and evenings can be really cold, when in the daytime there is sunny, nice and warm weather with 20 degrees. In winter you may use water- and windproof, breathable cycle wear. Do not forget to protect your joints (especially knees), and wear gloves and a cap.

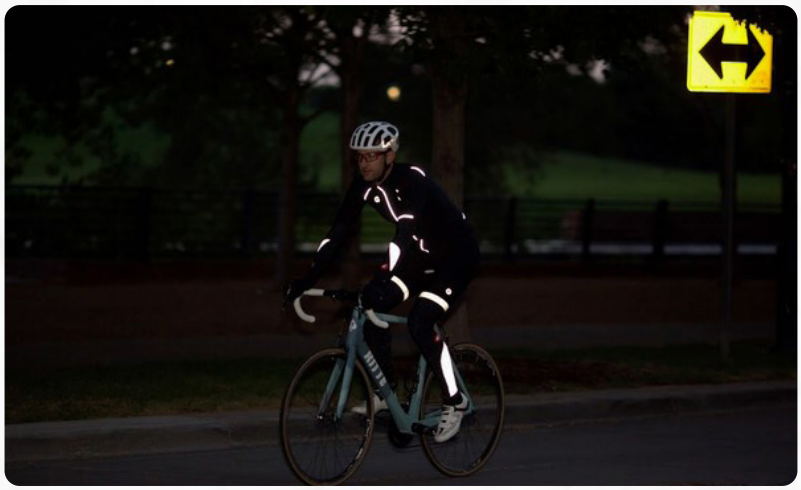
Summer set jersey apparel

Urban cyclist using only helmet and regular

Visibility

Even if the Highway Code regulates the type, the colour and the number of the lights and usually some regulations on clothing, worthy of note that behind the rules cyclists can do even more for there better visibility – night and day also.

- First of all, always wear light coloured clothes – the best are the high coloured or fluorescent garments. It provides better visibility during daylight and night also.
- Reflective stripes or other elements on your clothes or bags, shoes, etc. make you better visible.
- Reflective bands on your ankle make you more visible (because the up-and-down motion from pedalling can catch the eye of the motorist more than a large reflective stripe across the back, which can appear stationary), and help you avoid your trousers caught in the chain. Reflective bands on your wrist can help other road users to see if you sign your will to turn left or right in the dark.
- Reflective stickers on your bike, particularly on the spokes are also worth sticking on.



Refectlive cycling wear

Rear and front lights

Helmet

Helmet is a passive safety equipment as the seatbelt in the cars: it won't prevent an accident, but if it is occured, the helmet can reduce the chance of a serious injury of the cyclist's head. For the participants of Safe4Cycle program wearing a helmet during the cycle courses is an obligatory.

How to choose the right helmet? We can find several different helmets on the market, and it seems difficult to choose the proper one. But the principle is very simple, it is similar to buying shoes: you have to find the right size, and then the most comfortable helmet. Of course, there are some more additional aspects. A good helmet:

- Fits for its owners size and shape of the head.
- Protects the scruff, the temples and the forehead both.
- Allows the cyclist to turn his or her head in every direction, furthermore allows them to eat or drink.
- Is made of expanded polystyrene (EPS) foam covered with a tough-but-thin plastic shell.
- Has several vents for cooling the cyclist's head. The more vents that are on the helmet, the cooler the helmet will keep the cyclist.
- Has an anti-insect netting.
- Must be certified and labelled with a European CE EN1078 standard sticker.

How to adjust a helmet? It is important to set the helmet correctly, otherwise it won't save properly the cyclist's head from any injuries. Low, level, and snug: that's how your helmet should sit on your head. First of all let's see the parts of a helmet.

1. Shell
2. Retention cradle adjustment system (head ring)
3. Rear strap
4. Front strap
5. Slider
6. Chin strap
7. Buckle

Helmet adjustment steps

• **The size of the helmet** | To make sure that the helmet actually has the right size, attach the helmet and bow with tightened head ring and open chin strap. If the helmet remains seated firmly on the head, the right helmet is found. (Hold your hands to catch ready so the helmet does not fall to the ground.) There are several sizes, usually it is marked on the box of a new helmet, and inside the helmet. You can find sizes as in clothing (XS-XL) and/or in centimetres (for example 50-57 cm).

• **Mounting the helmet** | The helmet should cover and protect the scruff, the temples and the forehead both. If the helmet tilts back and exposes your forehead, it's not going to protect you. The helmet should sit level on your head, and the rim of the helmet shall be about two finger width above the eyes.

• **Head ring** | Using the retention cradle adjustment system can be adjusted very precisely to give a stable fit. The head ring should be as tight and comfortable as possible.

Head ring

• **Setting the straps** | The buckle and chin area of the strap should fit close to the underside of the chin once fastened. However, they should allow you to open your mouth to eat or drink water from your bottle. Between the chin strap and your chin should be about a finger wide space. The upper part of the helmet straps will fit you best when it creates a v-shape formed just beneath your ear lobe. Front and rear strap should form a triangle around the ear on both sides.

Correct helmet possitioning
Source: Vuelta SE

Some more practical advices on bicycle helmets:

• If you wear glasses or sunglasses, temples should be necessarily outside the straps – so the glasses can disappear and avoid possible injury of the eyes in case of a fall.

• The padding in a helmet makes wearing it comfortable and also helps to absorb sweat. Many helmets have removable padding, this is great as it enables you to wash them and keep them hygienic.

• Ladies helmets are available with a smaller internal measurement.

• Check your helmet often. Helmet straps tend to loosen, so give your helmet a

quick wiggle-check before every outing. Tighten the straps if you can move the helmet more than 2-3 centimetres in any direction.

- A helmet protects you only once – **after a bad crash, buy a new helmet,** even if no damage has been recognized on the crushed one's shell.
- Because of fatigue helmets should generally be replaced every 5-6 years.
- Do not store the helmet in direct sunlight or at high temperatures.
- Clear (or soapy) water usually is sufficient to clean the helmet. For any other detergents always have a look at the user's manual.

Always remember that a cycle helmet cannot prevent any accidents! **Cycle helmet is a passive safety equipment** that can reduce the chance of a serious injury of the cyclist's head.

Activities

1. Adjusting a helmet
    - Choose a helmet with the right size
    - Mount the helmet correctly
    - Use the headring to give a stable fit.
    - Set the strips as follows
        - Strips should allow you to open your mouth to eat or drink water from your bottle
        - Between the chin strap and your chin should be about a finger wide space
        - The upper part of the helmet straps will fit you best when it creates a v-shape formed just beneath your ear lobe.
        - Front and rear strap should form a triangle around the ear on both sides.

2. Calculate your carbon footprint on mobility + Quiz on sustainable mobility (reporting facts and figures with the aim of sensitizing the respondent)

3. Physical exercises preparatory for cycling

ACTIVITY PLAN

Activity title 1.1: Carbon footprint

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Calculate his/her carbon footprint and compare the carbon footprint of different modes of transport

Duration: 5 minutes

Target ages: N/A

Type of activity: Indoor

Preparation of the activity (before the activity):

Choose a carbon footprint calculator, for example:

• Pawprint carbon footprint bicycle vs car carculator: https://www.pawprint.eco/eco-blog/carbon-footprint-bicycle-vs-car

• OMNI Calculator: https://www.omnicalculator.com/ecology/car-vs-bike

Delivery of the activity:

• Think of your average week (or day) and calculate your carbon footprint

Conclusion:

• Think of the sustainability of your everyday mobility actions and choose the bicycle if it's suitable for your trips

Tips and tricks

• Ride along and record your routes (distance, location, purpose) – and use this data in your carbon footprint calculation

Activity title 1.2: Helmet adjustment

Learning outcomes

By the end of this activity, the participants will be able to:

• Choose a helmet with the right size

• Mount the helmet correctly

• Adjust the helmet correctly

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor

Preparation of the activity (before the activity):

• Choose and buy the right helmet in a bicycle shop (if you don't have it yet)

Delivery of the activity:

• Mount the helmet: the helmet should cover and protect your scruff, temples and forehead both.

• Adjust the head ring: use the retention cradle adjustment system to adjust it very precisely to give a stable fit. The head ring should be as tight and comfortable as it possible.

• Set the straps: the buckle and chin area of the strap should fit close to the underside of the chin once fastened. However, they should allow you to open your mouth to eat or drink water from your bottle. Between the chin strap and your chin should be about a finger wide space. The upper part of the helmet straps will fit you best when it creates a v-shape formed just beneath your ear lobe. Front and rear strap should form a triangle around the ear on both sides.

Conclusion:

• Just a correctly adjusted helmet will protect your head in case of falling of the bicycle.

Tips and tricks

• First thing to do: If you don't have a helmet, buy it in a bicycle shop. Afterwards, practice practice, practice! You need too be able to fit your helmet properly in matter of seconds. Follow the steps explained in the text above.

Useful links:

• Art of Cycling Video Part A #1 – What do you need to start cycling

https://www.youtube.com/watch?v=l36a09QPQak

Activity title 1.3: Prepare yourself for cycling

Learning outcomes

By the end of this **activity,** the participants will be able to:

• Prepare physically himself/herself for cycling

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

• Choose one of the warm up exercises or preride stretches (or find other exercises to do)

Delivery of the activity:

• Top 5 warm up exercises to do before using an exercise bike (https://www.diamondbackfitness.com/blogs/news/exercise-bike-top-5-warm-ups)

o **Leg swings:** After riding for a period of time, your hips can become really tight. To help prevent this, include leg swings as part of your warm up routine. Not only will it help to prevent tightness, but leg swings also help to generally increase hip-flexor mobility. To do leg swings, stand with your bike to one side as you hold the seat for stability. Next, swing your outside leg forward and backward, making sure to keep it straight and extended the length of the swing with each repetition. Repeat this process 10 times before turning to face your bike and swinging your leg side to side. Be sure to stretch your outer hip, thigh muscles and groin muscles. Repeat this ten times before changing sides and working the other leg.

o **Heel-Toe Walk:** Cycling can be tough on the calves, but doing a heel-toe walk can help warm up your calves while also increasing ankle flexibility. To do a heel-toe walk, step forward and land on the heel of your right foot. Remain on your heel and briefly lower your torso so it is over your right leg. Next, raise your torso back up and transfer your weight to your right foot before rolling from the heel to the ball of your foot. Then, rise up on the ball of your foot as high as you can before lowering down and taking a step forward with your left leg and landing on your heel. Continue this walk for 30 to 60 seconds.

o **Shoulder Reach:** Many people fail to realize that the shoulders are impacted when riding a bike. To loosen them up, engage in a shoulder reach before riding. To complete a shoulder reach, reach your arms over your head and shrug them up and down while standing tall. Your biceps should be next to your ears while your fingertips reach for the sky.

o **Cat-Cow Stretch:** Since the glutes are the powerhouse when riding, they need to remain flexible. Similarly, the back can become quite stiff from hunching over while riding, which means the muscles around the spine need to be stretched and warmed. To do this, do a cat-cow stretch for 30 to 60 seconds by first getting on all fours with your shoulders over your wrists and your knees underneath your hips. Slowly arch your back while inhaling, allowing your belly to drop toward the floor and your hips and shoulders to rise up. Reverse this position while exhaling, tucking in your pelvis and rounding your spine.

o **Chest Stretch:** The chest muscles can become tight from hunching over handlebars while riding an exercise bike. Dynamic chest stretches can help prepare this part of the body while also targeting the legs and back. To complete this stretch, stand facing the side of your bike with your feet hip-distance apart. Grab the top tube, seat or handlebars before leaning forward at your waist in such a way that your back is parallel to the ground. Press your chest down toward the ground, hold for three seconds and then stand up tall before assuming the position again for five to 10 repetitions.

• 3 Preride Stretches (https://www.bicycling.com/training/a30504446/preride-warmup-exercises/)

o **Low Lunge With Twist:** Start in a high plank position, with hands directly under shoulders and your core engaged. Draw left foot to left hand. Hold here for a second or two to stretch the front of your right hip and inner thigh. Then rotate your upper body and extend the left hand up to the ceiling, focusing the rotation in your upper back while keeping your hips square. Hold here for three seconds, then repeat on the other side. Continue to alternate for one minute.

o **Supine Heel Top:** Lie faceup, then bend both knees and position them directly above your hips so shins are parallel to floor. Slowly lower one heel to tap the floor then raise it back up to the starting position, and repeat on the other side. Keep your lower back pressed into the floor; do not let it arch. Use a slow and controlled three-count tempo when raising and lowering each leg. Perform 10 reps then repeat with other leg.

o **Glute Bridge With Resistance Band:** Start by laying faceup. Place a small resistance band loop just above your knees, then bend knees so your feet are flat on the floor. Make sure your feet are hip-distance apart and your heels are about six inches in front of your glutes. Contract your glutes and push your hips straight up. Hold here for three seconds while actively squeezing your glutes, before slowly lowering back down to the starting position. Continue to repeat for one minute.

Conclusion:

•A warm up before cycling can prevent injuries during cycling.

Tips and tricks

• Always listen to your body, but also to your bicycle. Sometimes a not well prepared bicycle can cause problems and ruin a bike ride.

Useful links:

• Art of Cycling Video Part A #1 – What do you need to start cycling

https://www.youtube.com/watch?v=l36a09QPQak

Chapter #2

Parts of the bicycle

2.1 Different types of bicycles

How to choose a proper bike?

The very first rule is that a bicycle should be suited to the cyclist. That means the cyclist has to decide, where and for what he or she will use the bicycle: on-road or off-road, in the city for commuting or just on the weekends for short tours, sporting or just for fun. For each purpose cyclists can find a bicycle that is best suited to their particular circumstances.

2.1.2 The most common types

City bike | A city bike is the best choice, if somebody wants to use the bicycle for commuting every day. There are several types of city bikes, but all of them have similarities and common attributions. These bicycles are designed for short on-road trips, and have an upright riding position, so they are relatively comfortable. The tyres are slim or and (almost) slick or semi-slick, and city bikes usually have a rear derailleur (and many have hub gears) with 3-7 speeds. You can often find a carrier or a basket on the bike, so you can go to work, to school, to shopping or anywhere else in the city by bike.

City bike

Touring bike | A touring bike is designed for tours, as its name shows. Touring bikes have a front and rear derailleur, the tyres are semi-slick or with poor patterns, which allows you to use your bikes not only on asphalt roads but dirt roads too. These bikes usually have a back, and sometimes also a front carrier. Many times touring bikes have suspension forks. Similar to the city bikes they have a relatively comfortable upright riding position, so it is the best choice for longer distance touring and for shorter tours also.

Touring bike; Source: Eco Logic

The mountain bike | The MTB is designed for off-road use; it has broad tyres with rich patterns, many gears, suspension fork and often a rear suspension system. The geometry of mountain bikes allows sporty but not always comfortable riding position, so it is not the best choice for shorter or longer distance touring or commuting, but provides excellent manoeuvrability that is needed for cross-country circumstances. MTBs always have at least a rear derailleur; number of gears depends on the setup of the bike's drive system. Fitting narrower slick or semi-slick tyres mountain bikes can be used in town or country (but this is not the best option if you like urban commuting as a bad compromise).

Mountain bike; Source: Eco Logic

Road bike | The traditional road bikes are designed for traveling at speed on paved roads. Drop handlebars, light weight, and many gears are common in road bikes. Excellent manoeuvrability and efficiency, very slim, high pressure tyres are typical qualities for a road bike. Road bikes can be familiar for anybody, who has ever seen a broadcast from the Tour de France? Some people are using road bikes for urban commuting, which can be a challenging process due to their geometry and specific parts (most of them are not suitable for common urban cycling infrastructure).

Road bike; Source: Eco Logic

2.1.2 Other types of bicycles

Womens bikes | Traditionally, bike manufacturers designed women's bikes with a lowered top tube to accommodate long dresses and make it possible to step through the frame rather than swing a leg over the rear wheel when mounting. Women's bikes also usually come in a slightly smaller selection of sizes and have some minor changes, like saddles with a hollow center. However, for all intents and purposes, women don't require a bike with any special differences to men, so long as it's the right fit.

Womens bike; Source: Eco Logic

Hybrid bikes | Hybrid bikes are a bit of everything, but with a road bike feel. There are several variations of it: commuter hybrids, cross bikes, city bikes, comfort bikes. Although all similar in frame design, wheels, and handlebars, each variation is slightly tweaked towards a specific use case. Lightweight frames, rigid forks or short travel suspension, straight handlebars, front and rear derailleurs are common on hybrid bikes.

Hybrid bike

And don't forget the **e-bike** and the **pedelec**!

E-bike | The e-bike is a bicycle with an integrated electric motor which can be used for propulsion. Pedaling is not required, the pedals and the motor are independent, so you can cruise along without pedaling (ride by just motor power), or pedal using the throttle (hybrid pedaling and motor). There are different regulations for e-bikes in the national highway codes (usually referring to the maximum speed and maximum motor power).

E-bike; Source: Eco Logic

Pedelec | The **pedelec** is similar to the e-bike, the biggest difference is that pedelecs are electric bicycles that must be pedaled, the motor assistance working only when the cyclist is pedaling. It makes pedaling very easy, because of the electric motor that augments the cyclist's power.

E-bike and pedelec are getting more and more popular. They can be used for commuting, for leisure and for sport also. They are inclusive – for example elderly people are also able to ride an e-bike, even if they are not in a good physical condition. They are improving the range of a cyclist – people are able to cycle further. They are challenging – riding, an e-MTB makes it harder for anybody to ride in the woods uphill also, getting over easily more rocks, roots or holes.

Pedalec bike

2.2. How to adjust the bicycle to its rider?

Adjustment starts when somebody has a new bicycle, and/or is willing to set his existing one in order to improve its riding efficiency and increase comfort. We recommend everybody to borrow various types and sizes of bicycles from relatives, friends, etc. to get a real scope of the difference between two or more bikes. It also can help to choose the most suitable and comfortable type of bicycle for your expectations.

If somebody decides the type of the bike that suits him or her, he or she has to find the right size. The two main indicators of the size of a bicycle are the size of the frame and/or the wheels.

Let's start with the size of the frame! The measure of the size is usually given in inches (1"=2,54 cm) or in centimeters. The size of road bikes are often given in centimetres, and several manufacturers are using sizes like in clothing: XS, S, M, L, XL. The size of a bicycle frame means the length of its seat tube. There are several tables, graphics, etc. which help the buyer to select the right size. Here are some examples.

City bike (Also commuter/hybrid bikes) size chart

Rider height		Leg inseam		Suggested Frame Size	
Feet/Inches	Centimeters	Inches	Centimeters	Inches	Size
4`10”-5`1”	147-155 cm	24-29”	61-73 cm	14”	XS
5`1`-5`5`	155-165 cm	25-30”	63-76 cm	15”	S
5`5`-5`9`	165-175 cm	26-31”	66-78 cm	16”	M
5`9`-6`0`	175-183 cm	27`-32`	68-81 cm	17"	L
6`0`-6`3`	183-191 cm	28`-33`	71-83 cm	18"	XL
6`1`-6`6`	191-198 cm	29`-34`	73-86 cm	19"	X

Mountain bike size chart

Rider height		Leg inseam		Suggested Frame Size	
Feet/Inches	Centimeters	Inches	Centimeters	Inches	Size
4`10”-5`1”	148-158 cm	24-29”	61-73 cm	< 14"	XS
5`1"-5`5"	158-168 cm	25-30”	63-76 cm	15” / 16"	S
5`5"-5`9"	168-178 cm	26-31”	66-78 cm	16” / 17"	M
5`9"-6`0"	178-185 cm	27`-32`	68-81 cm	17" / 18"	L
6`0"-6`3"	185-193 cm	28`-33`	71-83 cm	18" / 19"	XL
6`1"-6`6"	193-198 cm	29`-34`	73-86 cm	19" +	XXL

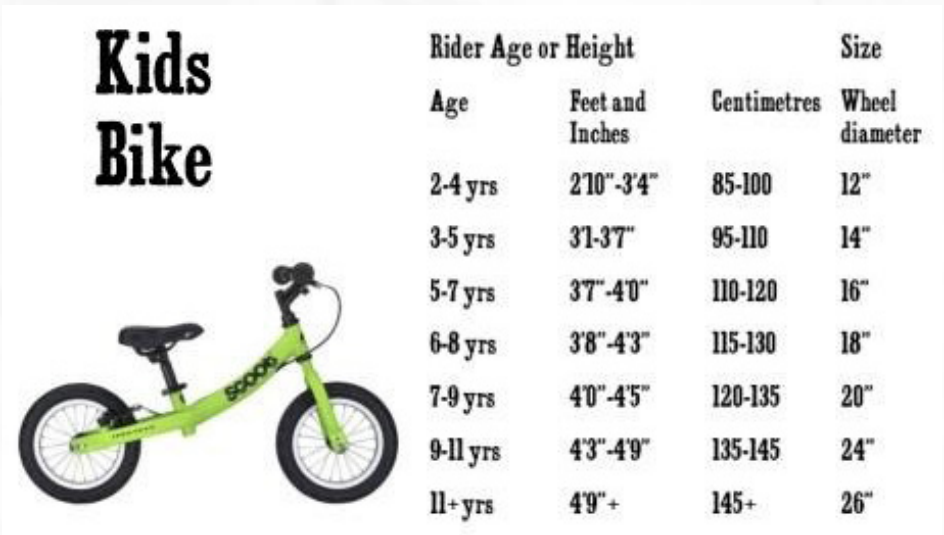
Road bike size chart

Rider height		Suggested frame size	
Feet/Inches	Centimeters	Centimeters	Size
4`10”-5`0”	148-152 cm	47-48 cm	XXS
5`0"-5`3"	152-160 cm	49-50 cm	XS
5`3"-5`6"	160-168 cm	51-52-53 cm	S
5`6"-5`9"	168-175 cm	54-55 cm	M
5`9"-6`0"	175-183 cm	56-57-58 cm	L
6`0"-6`3"	183-191 cm	58-59-60 cm	XL
6`3"-6`6"	191-198 cm	61-62-63 cm	XXL

You can find some other graphics or tables on the internet, but the best decision is to go to a bicycle shop, where professionals can help to find the right size for you. In some shops you are allowed to try the bicycles, it also can help to make a good decision.

What concerns the size of the wheels, the most important thing is to know that the sizes of bicycles for children are marked by the diameter of the wheels.

What concerns the children’s bikes, parents should pay attention to the proper size of the bicycle. Children are growing fast, so it could happen that changing the cycle is needed every year for a while. Parents should never buy a bike that is too large for a child with the expectation that the child will ’grow into it’. It is unsafe to ride a bike that is too large, because the rider may not control it properly. The bike that is too little for its user also can be unsafe: the foot can hit the front wheel or the knee hit the handlebar; additionally a too little bicycle is uncomfortable for the rider, furthermore it is inefficient and stresses the knees.



Size chart

If the cyclist has a proper bike, it should be adjusted to its user properly. The simplest way to do it is to adjust the height of the saddle. The cyclist should sit on the saddle, and place the heel on the pedal that is in low position. The saddle height is right, if the cyclist's leg is almost fully stretched.

This is the most important thing in order to adjust a bike to its owner.

Setting the saddle horizontal position is necessary to give the most comfortable position for pedalling. Saddle tilt, handlebar height or the brake lever also can be adjusted, but leading a cycling course a mentor only can draw attention to it, and the trainee has to go to a bicycle shop in order to adjust the bike properly.

Correct position

Wrong position

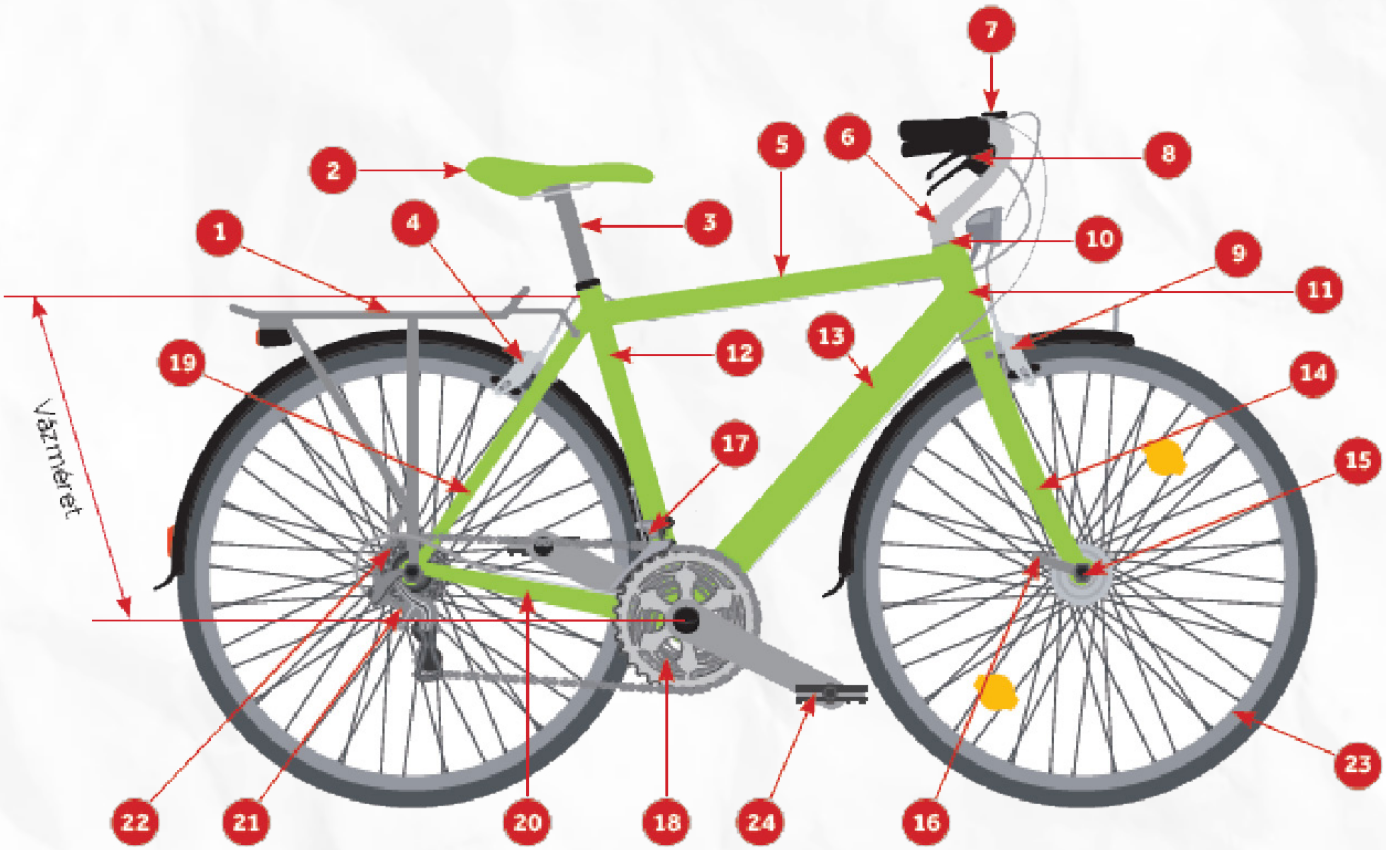
Source: Vuelta SE

Summarizing the importance of the correct adjustment of the bicycle: it is unsafe and uncomfortable to ride a too big or too little bike. It can cause injuries or accidents, or simply if somebody feels uncomfortable thanks to wrong adjustment, he or she will think that cycling is not fun, and will never try it again.

Bike size calculators:

- https://www.bikeexchange.com/promo/bike-size-calculator
- https://www.omnicalculator.com/sports/bike-size
- https://www.ebicycles.com/bicycle-tools/frame-sizer/

2.3. Parts of a bicycle



Part of the bicycle

Source: Vuelta SE

1 Carrier
2 Saddle
3 Seat post
4 Rear brake
5 Top tube
6 Stem
7 Handlebar
8 Brake lever
9 Front brake
10 Headset
11 Head tube
12 Seat tube
13 Down tube
14 Fork
15 Front hub
16 Quick release
17 Front derailleur
18 Chain ring and crank arm
19 Seat stay
20 Chain stay
21 Rear derailleur
22 Rear hub
23 Rim
24 Pedal

2.4. Roadworthy technical state – The 'M' Check

The M-Check

Source: Vuelta SE

This involves conducting a safety check of all the main working parts on the bike tracing an 'M' shape and with practice, should take no more between one and two minutes.

Step 1: The Front Wheel

• **Wheels.** Check the quick release skewer is firmly closed or that axle nuts are fully tightened.

• **Tyre wear.** Visually inspect that tyres are not split, rubbed or cracked. If the tyre is cracked, it can easily split.

• **Tyre pressure.** Inflate your tyres to the recommended pressure on the tyre wall (usually expressed as an interval in BAR or PSI). But what does proper pressure mean? It depends on several circumstances, like the temperature, the weather, the surface of the road, etc. In general narrow tires need more air pressure than wide ones. As another general rule while properly inflated tyres conform to bumps and absorb shocks, overinflated tyres contrariwise, transmit all impacts to the rider. Underinflated tyres equals higher rolling resistance, and worth manoeuvrability, especially in case of turning.

• **Rims and spokes.** Is the rim surface flat and not concave, with no visual hairline cracks? Run your fingers over the spokes to make sure they are tight, and spin the wheel to check that it runs true (doesn't wobble).

Step 2: Front Brake

• **Brakes.** Check the angle of your levers and make sure that they can be comfortably reached.

• **Brake blocks.** Take a look at the brakes are correctly positioned on the rim and not worn beyond the wear indicators.

• **Brake cables.** Cables are not frayed or heavily corroded, and run smoothly.

• **Squeeze your brake levers** and push the bike forwards, hopefully it won't roll forwards.

Step 3: Check your stem and headset

• **Handlebar stem alignment.** Hold the front tyre between knees and turn gently to ensure that the handlebar stem is correctly aligned with the front wheel and tightened. If the bars move without the wheel moving then the stem needs tightening.

• **Handlebar alignment.** The handlebars should be centred, correctly aligned and secured by the stem.

• **Have you got bar-end plugs** at the end of your handlebars? If not, replace them.

Step 4: Examine your frame

• Look out for hairline cracks in the frame at the joins (particularly relevant for carbon bikes). If you are using a second hand bike, feel the underside of the down tube – if the paintwork is blistered then it's likely to have been in an accident. Never ride a bike with a cracked frame, no matter how small – take it to your bike shop for advice and a second opinion.

Step 5: Follow the 'M' towards the bottom bracket (drivetrain system)

• **Take a firm grip on the cranks** (arms that the pedals attach onto) and wiggle from side to side: if there is any movement, the bearings may be loose or your cranks may need tightening.

• **Spin your pedals** and check they are in good condition.

• **Is the chain clean and lubricated,** not heavily rusted or particularly long?

• **Check that the cogs** where the chain sits are not overly worn with flat teeth.

Step 6: The Saddle

• Trace the 'M' shape up the seatpost towards the saddle. Hold the saddle firmly and try to rock it in different directions to check that it is fitted securely; visually ensure that the saddle is straight and level. The safety mark on the seatpost should not be visible.

Step 7: Rear Brake

• **Brakes.** Check the angle of your levers and make sure that they can be comfortably reached.

• **Brake blocks.** Take a look at the brakes are correctly positioned on the rim and not worn beyond the wear indicators.

• **Brake cables.** Cables are not frayed or heavily corroded, and run smoothly.

• **Squeeze your brake levers** and push the bike forwards, hopefully it won't roll forwards.

Step 8: The Rear Wheel

• **Wheels.** Check that the quick release skewer is firmly closed or that axle nuts are fully tightened.

• **Tyre wear.** Visually inspect that tyres are not split, rubbed or cracked. If the tyre is cracked, it can easily split.

• **Tyre pressure.** Inflate your tyres to the recommended pressure on the tyre wall (usually expressed an interval in BAR or PSI).

• **Rims and spokes.** Is the rim surface flat and not concave, with no visual hairline cracks? Run your fingers over the spokes to make sure they are tight, and spin the wheel to check that it runs true (doesn't wobble).

Step 9: The Rear Derailleur

• Move towards the rear of the bike and down towards the rear transmission ensuring that the rear derailleur is straight and does not foul the spokes.

Step 10: Additional items

• Last but not least, take a good look at all of your additional items such as lights, mudguards, racks and bike computers that are firmly secured and do not foul moving parts.

The 'M' check is a quick, intuitive and easy to remember routine for ensuring that your bike is in good working order and is safe before every ride but also helps you become more familiar with the parts and workings of your bike.

Activities

1. **Check your bicycle! Use the 'M-check' method!**

   If you check your bicycle from the front to the back, following an M shape, you will check every components that you have to, as follows:

   - Front wheel: tyre wear, tyre pressure, rims and spokes, quick release
   - Front brake: does it block the front wheel?
   - Handlebar and stem
   - Frame
   - Bottom bracket (drivetrain system): pedals, chain, cogs
   - Saddle: is it fitted securely?
   - Rear brake: does it block the front wheel?
   - Rear wheel: tyre wear, tyre pressure, rims and spokes, quick release
   - Rear derailleur

2. **Adjust your bicycle to suit you! Check the height of your saddle as follows:**

   - sit on the saddle
   - place the heel on the pedal that is in low position

   The saddle height is right, if your leg is almost fully stretched. Check you e-bike before riding! (*I will ask a friend, what to do with an e-bike.*😊)

ACTIVITY PLAN

Activity title 2.1: Adjust your bicycle to suit you!

Learning outcomes

By the end of this **activity**, the participants will be able to:

- Check the height of the saddle
- Adjust the height of the saddle
- Adjust the distance of the saddle and the handlebar

Duration: 5 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

- Watch the Art of Cycling video about the topic

Delivery of the activity:

- First check the size of the bicycle if it is suits for you or not
- If the size of the bicycle is suitable, check the height of the saddle as follows
  - sit on the saddle
  - place your heel on the pedal that is in low position
- The saddle height is right, if your leg on the pedal in low position is almost fully stretched
- Set the horizontal position of the saddle to give the most comfortable position for pedalling

Conclusion:

- It is unsafe and uncomfortable to ride a too big or too little bike
- It can cause injuries or accidents
- If you feel comfortable thanks to correct adjustment, cycling will be fun

Tips and tricks

- Always listen to your body, but also to your bicycle. Sometimes a not well prepared bicycle can cause problems and ruin a bike ride.

Useful links:

- Art of Cycling Video Part A #2 – Adjusting saddle height

https://www.youtube.com/watch?v=jHXPYVbTdvw

Activity title 2.2: Check your bicycle!

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Individually check the bicycle before riding

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

- Watch the Art of Cycling video about the M-check

Delivery of the activity:

Check different parts of the bicycle as follows.

Step 1: The Front Wheel

- Wheels
- Tyre wear
- Tyre pressure
- Rims and spokes

Step 2: Front Brake

- Brakes
- Brake blocks
- Brake cables
- Squeeze your brake levers and push the bike forwards

Step 3: Check your stem and headset

- Handlebar stem alignment
- Handlebar alignment
- Bar-end plugs

Step 4: Examine your frame

- Look out for hairline cracks in the frame at the joins (particularly relevant for carbon bikes).

Step 5: Follow the 'M' towards the bottom bracket (drivetrain system)

- Take a firm grip on the cranks (arms that the pedals attach onto) and wiggle from side to side
- Spin your pedals and check they are in good condition.
- Is the chain clean and lubricated?
- Check the cogs

Step 6: The Saddle
• Hold the saddle firmly and try to rock it in different directions to check that it is fitted securely; visually ensure that saddle is straight and level.

Step 7: Rear Brake
• Brakes.
• Brake blocks.
• Brake cables.
• Squeeze your brake levers and push the bike backwards

Step 8: The Rear Wheel
• Wheels.
• Tyre wear.
• Tyre pressure.
• Rims and spokes.

Step 9: The Rear Derailleur
• Move towards the rear of the bike and down towards the rear transmission ensuring that the rear derailleur is straight and does not foul the spokes.

Step 10: Additional items
• Last but not least, take a good look at all of your additional items such as lights, mudguards, racks and bike computers are firmly secured and do not foul moving parts.

Conclusion:
• A regular bike check ensures the proper mechanical state of your bicycle.
• If you recognize any problems, let's go to the nearest bike shop to fix it

Tips and tricks

If you would like do an even faster bicycle check, try the ABC check, as follows:

• Air: is your tyre pressure proper for riding?

•Brakes: are the brakes on your bicycle working properly?

• Chain: is your chain lubricated?

Do not forget to check regularly your bicycle!

Useful links:

• Art of Cycling Video Part A #2 – M Check

https://www.youtube.com/watch?v=Ev435HR0w0k

Activity title 2.3: Check your e-bike before riding!

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Individually check the e-bike before riding

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

• Watch the Art of Cycling video about the M-check

Delivery of the activity:

• First do the M-check, but pay more attention for the following:

o check more often tyre pressure, as under-inflated tyres can waste energy and limit efficiency, which means you will get less use out of a battery charge

o e-bike chains require more frequent lubrication than non-assisted bicycle chains
o check that your battery is securely locked in

• Additional advices:

o check your battery before riding if it is charged or not

o never leave your battery with no charge for a long period

o keep your e-bike in a dry and clean space

Conclusion:

• A regular bike check ensures the proper mechanical state of your bicycle.

• If you recognize any problems, let's go to the nearest bike shop to fix it

Tips and tricks

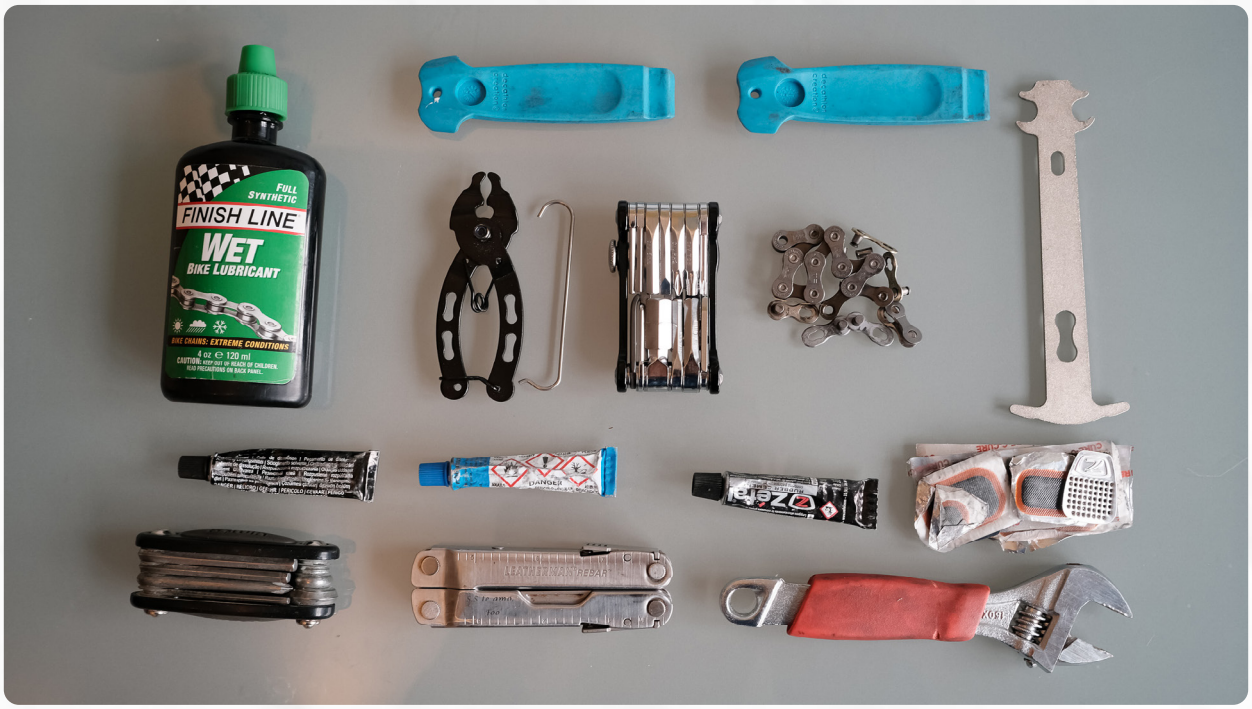
Chapter #3

Maintenance tips and basics

Toolkit for maintenance – what do I need?

The essential toolkit for bicycle maintenance depends on the bicycle. First the bicycle should be checked, but for basic maintenance an average cyclist will need the following tools:

- Allen wrench set (if needed)
- Open end wrench set
- Torx wrenches (if needed)
- Screwdrivers
- Chain brush
- Chain lube and cleaner
- Tyre levers
- Tubes
- Tube patch kit
- Pump



Toolkit for basic maintenance

How to repair a puncture?

A puncture should not mean the end of a bicycle trip. A cyclist shall always bring the following tools with to repair a puncture at any time, anywhere:

- Tyre levers
- Tube patch kit
- Pump

Toolkit for repairing a puncture

The steps of repairing a puncture are the following.[2]

- **Remove the wheel**
    - If your bike uses quick release skewers, pull the lever to open it. You'll need to let off the brakes: on caliper brakes, just open the quick release, or disconnect the brake wire if you have cantilever or V-brakes. If you have disc brakes you don't have to do anything more than open the quick release skewer or thru axle to remove the wheel from the frame.
    - Some commuter bikes use wheel nuts - if this is the case, you'll need a spanner - often 15mm - to loosen these off before you can remove the wheel.
    - If it is a rear wheel puncture, adjust the gears so that the chain is on the smallest chainring on the crankset and the smallest cog on the rear cassette. This makes rear wheel removal easier.

[2] https://www.cyclingweekly.com/news/product-news/fix-a-puncture-142674

- **Remove the valve cap and retaining nut**
    - Take off the valve cap (the little piece of black plastic over the valve) and unscrew the valve retaining nut (the round ring siting against the rim) if there is one. Push the end of the valve to fully deflate the tube if it's not already empty of air.

- **Use tyre levers to loosen the tyre**
    - Gently insert two tyre levers between the tyre and the wheel rim - directly opposite the valve (you can start anywhere but the further you are from the valve the easier it›ll be).
    - Pull the tyre away from the rim using the tyre levers, one at a time. If you have three levers, hook the first two under the spokes and remove some more of the tyre with the third lever.
    - By now the tyre should be loose enough to simply run a tyre lever around the wheel rim to remove the rest of the tyre. With experience, you may only need one tyre lever.

- **Remove the tyre**
    - You should not remove the tyre completely, it's enough to take it off only on one side of the rim.
    - Pull out the inner tube

- **Locate the puncture**[3]
    - You can then locate the puncture. If it's not easy to see, immerse the inflated tube in water and watch for bubbles to rise – it's likely you'll just have a tiny pinhole puncture.
    - Once you've found the hole, mark it with a ballpoint pen.
    - Check the tyre for debris: carefully run your fingers around the inside of the tyre to check there is nothing else penetrating the tyre - if you find anything (small pieces of glass, thorns, gravel), remove it. Not doing so can result in the dreaded double puncture. It's usually possible to make a visual check of the tread while doing this.

- **Roughen the inner tube around the hole**
    - Use the puncture kit's sandpaper to do this. The area you roughen should be bigger than the patch you're applying it to. Whilst this will rub out the mark you've just drawn, you'll still be able to see the outer edges.

- **Apply one thin film of vulcanising solution**
    - Spread the glue over an area that's larger than the patch, and then leave it to dry for at least five minutes. Don't do anything else until it's totally dry – otherwise you won't fix your puncture.

[3] https://www.cyclescheme.co.uk/community/how-to/how-to-fix-a-puncture-2

- **Peel off the foil backing**
    - Once you've peeled off the foil backing, apply the patch, making sure it's centred over the hole. Press down firmly for a minute, and then remove the backing, being careful not to lift the edges of the patch.

- **Inflate the tube**
    - By inflating the tube (slightly so it just becomes round in shape), you can check the patch stretches with it. If there's a hole under one edge of the patch, remove it and start again. You'll need to roughen the tube more thoroughly, and let the vulcanising solution dry for longer.

      To prevent the inner tube from sticking to the inside of the tyre, dust the glue around the edge of the patch (or chalk dust or talc).

- **Insert the tube and refit the tyre**
    - When the inner tube is all in, twist the tyre back into place, starting at the valve. Try to finish directly across from the valve as the tyre will be looser there. If it gets difficult, let a little air out of the inner tube. Check there are no bulges and that the tube isn't pinching under the tyre bead.
    - You can use tyre levers to help with the last section, where the tyre is tightest - but if possible avoid this as they can pinch the tube and cause you to have to start all over again.
    - Fully re-inflate the tube

This method is fine if a cyclist wants to repair the puncture, but on the road it could be better to change the flat tire. In this case steps are very similar to the steps written above.

- Remove the wheel
- Remove the valve cap and retaining nut
- Use tyre levers to loosen the tyre
- Remove the tyre
- Remove the inner tube
- Insert a new inner tube
- Refit the tyre and fully inflate the tube

Chain maintenance

Why to do this dirty job regularly? The chain and drivetrain are typically the dirtiest parts of the bicycle, but cleaning the chain on it is a key part of reducing wear and improving performance. Keeping the chain clean will help it perform better, run quietly, and prolong its life.

There are several methods for cleaning the chain, let's do the simplest one.[4]

[4] https://cyclingtips.com/2018/05/chain-cleaning-and-maintenance-how-to/

- Wrap the chain with a clean, lint-free cloth, and then backpedal the drivetrain through it to wipe off the exterior muck. Repeat the process until the rag stays mostly clean. You can use the rag to scrape crud off of the derailleur pulley wheels and chainrings.
- Once the chain is reasonably clean, you can re-apply lube as needed. Oil-based lubricants also help float contaminants to the surface of the chain, so you can also repeat the wiping process a few more times until the outside of the chain looks clean.

How often is it recommended to clean the chain? It depends on where, how and how often the bicycle is used, and also varies depending on lube selection, riding conditions, and mileage.

Lubricating the chain

Cleaning the chain with a towel

Brakes and gears – tips for safety (how to recognise problems with brakes and gears?)

First of all, remember M-check (Chapter #2), and check your brakes, as follows:

- **Brakes.** Check the angle of your levers and make sure that they can be comfortably reached.
- **Brake blocks.** Take a look at the brakes are correctly positioned on the rim and not worn beyond the wear indicators.
- **Brake cables.** Cables are not frayed or heavily corroded, and run smoothly.
- **Squeeze your brake levers** and push the bike forwards, hopefully it won't roll forwards.

If your brakes don't work properly, bring your bicycle to a bike repair shop.

Your brakes may work more os less properly, while they are squeaky. Squealing brakes can occur for a number of reasons. Often, contamination can give rise to a nasty noise when you hit the anchors – oil or grease on the wheel rim, brake pad or rotor

or a misalignment between the braking surfaces can cause a squeal, or perhaps you have new brake pads which may need to bed in. Also, poorly set-up brakes can cause vibration and the tell-tale screech.[5]

Brake adjustment

A Quick Summary on Shifting[6]

1. To shift onto a different chainring/gear up front, use your left shifter.

2. To shift one of the rear gears (and how you'll shift most often), use your right shifter.

3. For smoother shifting, pedal lightly while using the shifter. Don't back-pedal.

4. If you're pedaling too fast, and there isn't enough resistance, shift into a harder gear. You'll also go faster.

5. If you're pedaling too slow, and it's hard to turn over the pedals, don't be afraid to shift into an easier gear. It's better to ride at a more efficient cadence anyway.

6. Another way to think of it: In both the front and back, "Moving the chain closer to the bike makes it easier, and moving the chain away from the bike makes you faster," as submitted by one of our readers, fcchambers.

7. Lastly, practice makes perfect. Play around with shifting, and see how it feels to ride in different gears.

What kind of problems may you face regarding the gears?

- Problem: Gears won't shift up or down perfectly with one click
    - Solution: This is most commonly caused by stretched gear cables and you will need to re-index your gears.

[5] https://www.cycleguard.co.uk/fixing-squeaky-bike-brakes

[6] https://www.bicycling.com/training/a20004265/how-to-shift/

• Problem: Gears are well indexed but the chain keeps dropping off of either end of the cassette or chainrings

  ◦ Solution: This is most commonly caused by poorly set up derailleur limit screws and these will require adjusting. It can also be caused by a bent derailleur hanger.

• Problem: My rear gears are properly indexed, but the chain shifts too far in one direction

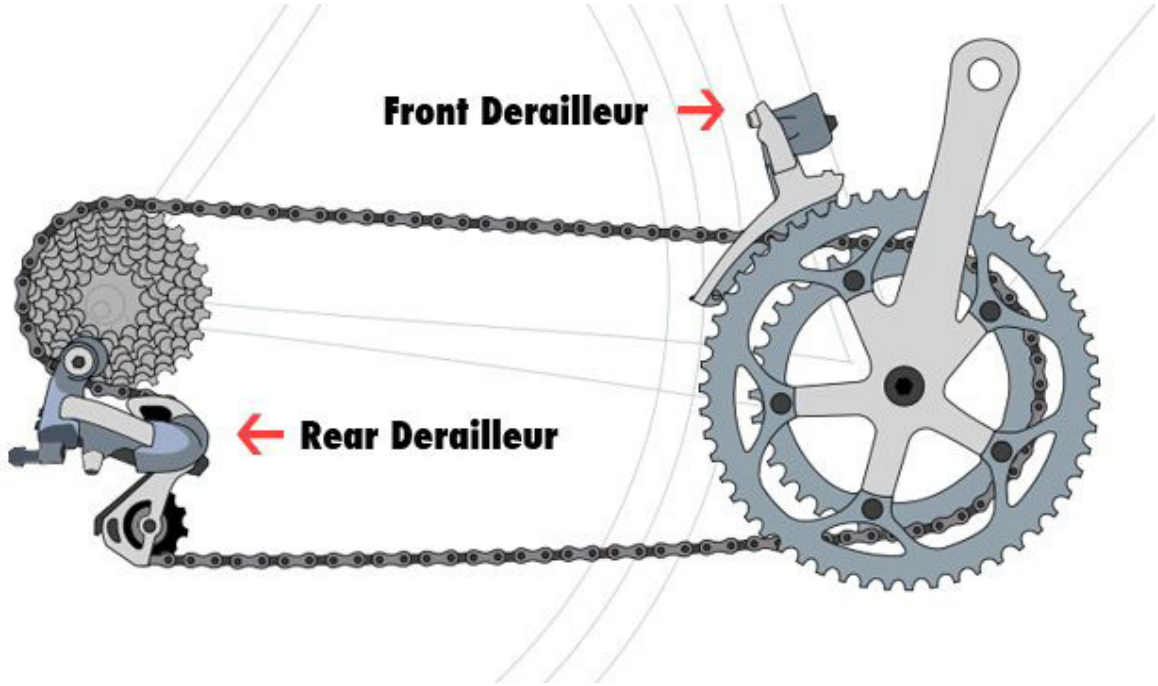
  ◦ Solution: If the chain won't run to the bottom of the cassette and shifts over the big cog into the spokes (or vice-versa), it sounds like a bent rear hanger needs straightening or replacing. If you've been in a crash or damaged the bike somehow, this is the likely cause. It is also possible, but less likely, that the limit screws are causing this.

• Problem: Down-shifting is fine but upshifting is sticky or slow

  ◦ Solution: When were your cables last replaced? Dirty cables and housing can cause slow or inaccurate shifting.

• Problem: Chain slipping, jumping and generally misbehaving

  ◦ Solution: Inspect your cassette, chain and chainrings for wear. Can you see a pointy shark-fin-like profile on your cog teeth or chainrings? You may need to replace your chain, cassette and chainrings.



Bike drivetrain (Rear Derailleur, Front Derailleur, Crankset, Chain, Cassettte)

Emergency kit' for cycling – what to bring with?

Well, the answer depends on the aim, the length and the place of cycling.

- **City cycling** | For cycling in the city it is enough to bring a basic toolkit that includes a pump, tyre levers and a tube patch kit.
- **Cycling for leisure, short bicycle tours** | Beside the basic toolkit it is recommended to bring also a multitool kit and an inner tube.
- **Cycling for sport** | Beside the basic toolkit it is recommended to bring also a multitool kit and an inner tube.
- **Longer bicycle tours** | Beside the basic toolkit, a multitool kit and inner tube/s the further list of the tools depends on the circumstances; the length of the tour, the route itself (the density on the route – how often a cyclist can find a bike shop), etc.

Tyre repair kit

Activities

1. Set up your own emergency toolkit! Repair a puncture (with a kind of glue)
    - Let's go to a bike shop, buy all the tools needed for repairing a puncture (tyre lever, tube patch kit, pump) and a multitool kit. At home try to repair a puncture, as follows:
        - Remove the wheel
        - Remove the valve cap and retaining nut
        - Use tyre levers to loosen the tyre

- Remove the tyre
- Locate the puncture
- Roughen the inner tube around the hole
- Apply one thin film of vulcanising solution
- Peel off the foil backing
- Inflate the tube
- Insert the tube and refit the tyre
- Fully re-inflate the tube

2. Put the chain back in place[7]

- First try to use your gear lever to move the front derailleur to the big ring position (while you're still moving). If you're lucky, you might be able to pedal the chain back on.
- If that doesn't work, hop off the bike and use your gear levers to move the derailleurs to the positions of the smallest sprocket at the back and the smallest chainring at the front.
- Push the rear derailleur forward with your left hand, giving the chain some slack. We want as much loose chain as possible so that our fingers aren't nibbled.
- Using your right hand, lift the top of the chain so it sits on the small chainring.
- Let go of the rear derailleur and the chain should be reseated.

3. How to properly clean and maintain the bicycle

- What do you need for cleaning a bicycle at home?
  - Brushes
  - Clean shop rags or old T-shirts
  - Sponges
  - Water
  - Soap/general cleaner
  - Degreaser

- How should you clean your bicycle?
  - **Frame** | Use a bucket of warm soapy water and a brush to gently scrub off dirt and grime. Work from the top down, cleaning the handlebars, headset, top tube, seat post, seatstays, front fork and brakes. Soap up the frame, working your way from front to

[7] https://www.cyclingweekly.com/cycling-weekly/toolbox-tips-getting-chain-back-132820

back, then rinse. If you have disc brakes, try to keep soap away from the rotors and brake pads.

• **Chain and drivetrain** | If you have a chain cleaning device, use it to clean the chain. If not, you'll simply have to apply the degreaser and use a brush (we recommend using a bike-specific degreaser and a bottle brush or toothbrush to get into crevices around the teeth, pulleys, and rings.). You'll need the brush for the cassette and derailleur(s) in any case. After the degreaser has dried, apply drops of lube slowly onto to the chain, getting some on each link. Clean and lube the chain frequently to slow the rate of chain wear.

• **Wheels** | We recommend using softer, bigger brushes for tires and rims so you can get into every nook and cranny with minimal effort. Starting at the valve, scrub all the way around the wheel, hit the spokes and hub, then flip the wheel to get the opposite side. Repeat on the other wheel, then rinse.

ACTIVITY PLAN

Activity title 3.1: How to properly clean and maintain the bicycle?

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Individually clean the bike properly

Duration: 20 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

• Prepare the tools that are needed, as follows:

- o Water
- o Workstand (optional, but undoubtedly helpful)
- o Brushes
- o Chain cleaning device or a specific stiff-bristled toothbrush if you don't have one
- o Degreaser
- o Bike wash fluid (preferably environmentally sound)
- o Chain lube
- o Paper towel or rag
- o Chamois leather

Delivery of the activity:

• Clean the drivetrain: if you have a chain cleaning device, use it to clean the chain. If not, you'll simply have to apply the degreaser and use a brush. You'll need the brush for the cassette and derailleur(s) in any case.
• Wipe the discs or braking surface down
• Rinse and apply detergent: use your hose, or bucket and sponge, to wet the bike and remove the majority of the mud and grime that has built up
• Brush clean: pay attention to moving parts and use a smaller brush to get into narrower spaces. The brushes combined with the detergent will loosen most of the remaining dirt from the bike. Remember the undersides and awkward bits that also need attention.
• Rinse: use fresh water to rinse off the bike.
• Dry: use an old dishcloth or chamois leather if you have one to dry the bike.
• Lube: apply lube to the chain while turning the pedals.

Conclusion:

• After a few cleans, you'll develop your own routine – front to back or top to bottom. 😊

Tips and tricks

• Clean your bike regularly to keep it clean and roadworthy!

Useful links:

https://www.youtube.com/watch?v=jI1TEU5yxV0

Activity title 3.2: Check your e-bike before riding!

Learning outcomes

By the end of this activity, the participants will be able to:

• Individually put the chain back in place

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

• Watch the Art of Cycling video about the topic

Delivery of the activity:

• If you have a front derailleur (the most common place for a bike chain to slip off is from the smallest of your chainrings) while pedaling slowly, shift your front derailleur into the position of the biggest chainring (the hardest gear)

• If it doesn't work: push the rear derailleur forward

• Change gears to shift your derailleurs into position over the smallest chainring and the smallest sprocket of the cassette

• Using your left hand, push the rear derailleur forward to create some slack in the chain. This will make it easier to ease the chain back into place, than lift the slackened chain onto the smallest chainring

• What if the chain is jammed? Sometimes the chain gets jammed between the rear sprocket and the frame. In this case loosen the quick release on the rear wheel and undo the wheel nut to loosen the rear wheel from the chain. When you've loosened the rear wheel enough, simply pull the chain out.

• If you don't have derailleurs, the easiest way to repair a loose chain is to hook the chain onto the rear sprocket, hook as much of the chain as you can on the bottom of the front sprocket, and carefully turn the pedal backward

Conclusion:

• Try to gain some experience at home to make it easy to put the chain back on the roadside

Tips and tricks

• If you need help, ask an experienced cyclist to show how to put the chain back to its place – for the second time it will be much easier to do it on your own.

Activity title 3.3: Set up your own emergency toolkit

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Individually repair a puncture

Duration: 30 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

• Watch the Art of Cycling video about repairing a puncture

• Buy all the tools needed for repairing a puncture (tyre lever, tube patch kit, pump) and a multitool kit

Delivery of the activity:

- Try to repair a puncture, as follows:
  - Remove the wheel
  - Remove the valve cap and retaining nut
  - Use tyre levers to loosen the tyre
  - Remove the tyre
  - Locate the puncture
  - Roughen the inner tube around the hole
  - Apply one thin film of vulcanising solution
  - Peel off the foil backing
  - Inflate the tube
  - Insert the tube and refit the tyre
  - Fully re-inflate the tube

Conclusion:

• For the first time it takes at least 30 minutes to repair a puncture, but with some routine you will do it in 10 minutes everywhere on the roadside

Tips and tricks

• Prepare all the tools before you start the activity. First time try to repair a puncture at home, not on the roadside!

Useful links:

• Art of Cycling Video Part A #5 – Repair a puncture

https://studio.youtube.com/video/gW3mRqPgSCQ/edit

Chapter #4

Rules of the road for cyclists

4.1. Compulsory equipment

The bicycle **must** be equipped according to the law as follows:

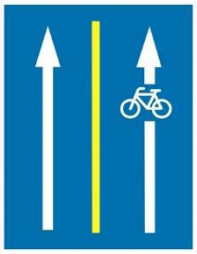
- **Front light** | White or yellow light that is visible in dark from at least 150 meters
- **Rear light** | Red light that is visible in dark from at least 150 meters
- Lights are allowed to be installed on the cyclists also and allowed to flash
- **Front reflective (white)**
- **Rear reflective (red)**
- **Reflectives on the spokes** | At least on the front wheel, at least two orange reflectives that are allowed to replaced by a white reflective round stripe on the tires
- **Brakes** | Two indenpendently operating brakes for the two wheels
- **Handlebar** | A handlebar that is working properly

Bicycle and all the parts that need to be on it - Source: Vuelta SE

4.2. Cycling infrastucture

A cyclist must use the cycling infrastructure (bicycle path, bicycle and pedastrian path or zone, bicycle lane) if it is available. If cycling infrastructure is not available, cyclist are allowed to cycle on the right side of the road behind each other in a row.

Cycling infrastructure is always signed by traffic signs and road signs as follows.

Bicycle path • always separated from the road • maximum speed 30 km/h(Hungary and Italy), 25 km/h(North Macedonia) • cyclists must use it (except if there are bike sharrows on the road) • pedastrians are allowed to use it outside of the cities and in case there is no sidewalk next to the road)	 
Pedestrian and bicycle path • always separated from the road • maximum speed 20 km/h • cyclists must use it (except if there are bike sharrows on the road)	 
Bicycle lane • part of the road • cyclists must use it • no other vehicles are allowed to use it	 

4.3. Cyclists and pedestrians

In Hungary cycling on the sidewalks is forbidden in general, but there are two exceptions:

- Children under 12 are not allowed to ride on major roads – they are allowed to ride on sidewalk in this case.
- If the road is unrideable by bicycles, it is allowed to ride on the sidewalk.

The speed limit is 10 km/h in both cases, but cyclists have to consider that pedestrians are walking 4-5 km/h – the difference in the speed of the two types od road users is really huge.

In italy there are no age limits for riding bicycle without adults, nor speed limits for children.

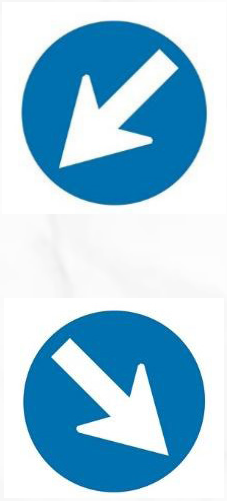
In Macedonia the kids are allowed to ride alone from the age of 10. In many parts of the country both pedestrians and cyclists share the road.

Cycling on sidewalks – even if it is allowed – may cause some conflicts between cyclists and pedestrians. Riding on sidewalks never forget that cyclists are guests on sidewalks – sidewalks are built for pedestrians, so cyclists have to take care of them.

4.4. Road signs and regulations

4.4.1. Signs giving orders

Signs with blue circles mostly give positive instruction.

Name of the road sign	Image of the road sign	Description of the road sign
Ahead only Turn left Turn right		In the intersection you must ride straight ahead/turn left/turn right.
Keep left Keep right		You have to pass by the sign (or the obstacle) in the direction that is signed by the arrow.

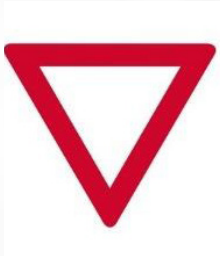
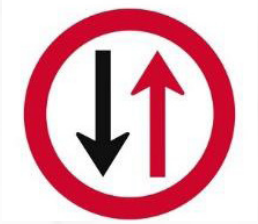
4.4.2. Prohibition signs

Signs with red circles are mostly prohibitive.

Name of the road sign	Image of the road sign	Description of the road sign
Maximum speed		You are allowed to ride maximum 40 km/h.
No cycling		Cylcing is not allowed at all; except if cyclists dismount and push the bicycle (rules for pedestrians should be applied)
No entry for vehicular traffic		No entry for any kind of traffic; except if cyclists dismount and push the bicycle (rules for pedestrians should be applied)
No right turn No left turn	 	No right/left turn for any kind of traffic; except if cyclists dismount and push the bicycle (rules for pedestrians should be applied)

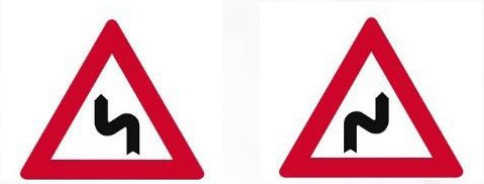
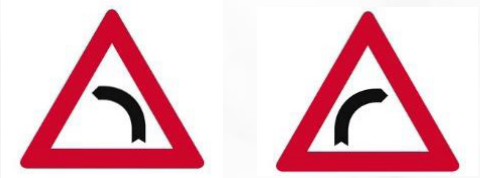
4.4.3. Priority signs

All priority signs have a special shape in order to recognize them from behind also.

Name of the road sign	Image of the road sign	Description of the road sign
Stop and give way		Stop sign for any kind of traffic.
Give way to traffic on major road		It means that you are crossing with main road ahead and you need to stop and give way.
Traffic has priority over oncoming vehicles		It means that the path ahead of you does not have space for both lanes and one must cross first, in this case you have priority.
Priority for vehicles from the opposite direction		It means that the path ahead of you does not have space for both lanes and one must cross first, in this case you have to give way.

4.4.4. Warning signs

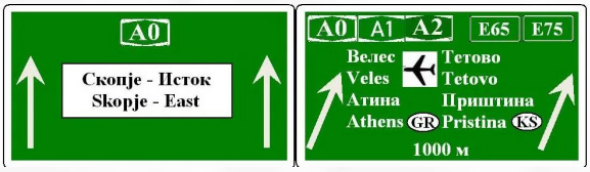
Warning signs are mostly triangular.

Name of the road sign	Image of the road sign	Description of the road sign
Crossroads		It means that the main road is crossing with side from from both sides.
Double bend first to left/ right		It means that ahead of us the road has bend to the left/right and we need to pay extra attention
Bend to left/right		It means to be extra careful as ahead of us there is bend to the left/right and we need to adjust the speed.
Roundabout		It means that ahead of us is a roundabout and we need to follow the rules of the roundabout. Firstly we need to let the vehicles inside the roundabout to pass and then to enter.

Source:Eco Logic

4.4.5. Information signs

Information signs are all rectangular, but there are different groups of information signs: signs giving information on facilities near the road, signs giving information on touristic attractions, direction signs, etc.

Name of the road sign	Image of the road sign	Description of the road sign
One-way street		For any kind of traffic – cyclists are only allowed to ride from the opposite direction if there is an additional sign below.
Hospital		This sign means that there is a hospital ahead of us.
No through road for vehicles		This signs means that the this street is has dead end.
Restaurant		This signs shows us that there is a place where we can eat ahead of us.
Direction signs	 	Direction signs, showing which route should be take in order to go to the marked cities. On some signes there is also extra add for far are we from the city.

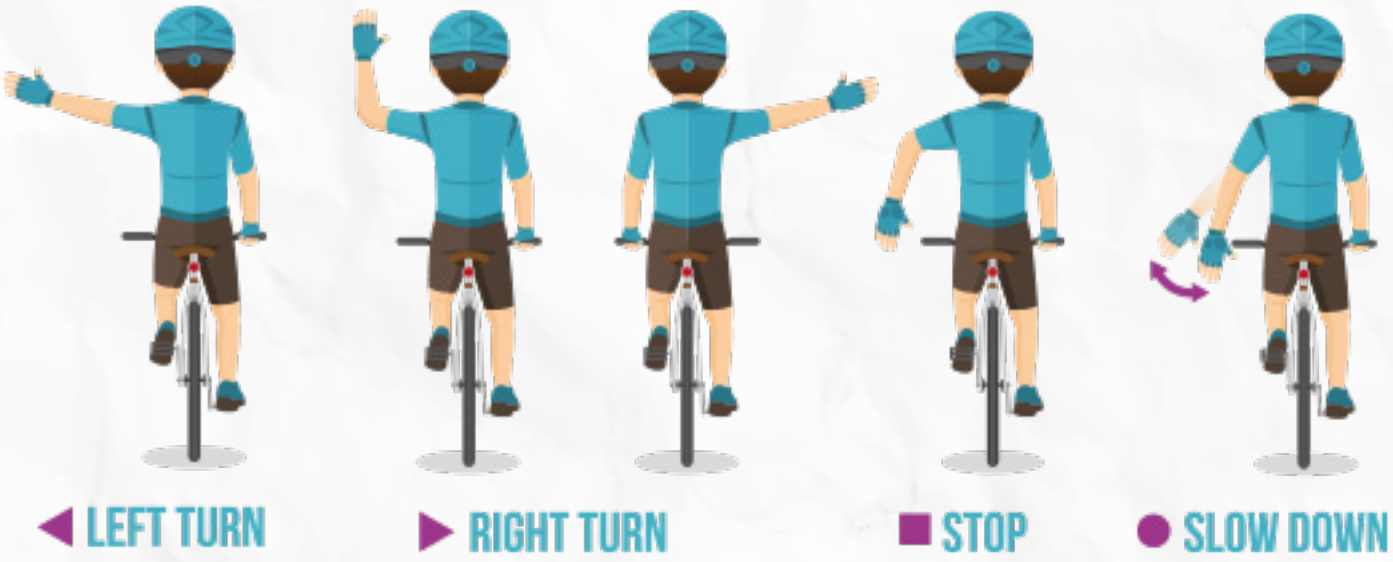
Source:Eco Logic

Hand signalling

Communication with other road users is a key for safety riding: a cyclist should always make his/her intentions clear to others – hand signalling is the best (and obligatory) way to do it. In Hungary all manoeuvres should be signed all time, for cyclists by hand signalling.

- Before signalling always cyclists should look behind the left shoulder (observing the traffic and assessing possible risks)
- Hand signals should be very clear: fully extended arm out to the cyclist's side – the right one in case of turning right, the left one in case of turning left.
- In Hungary according to the law cyclists have to sign also for example before start and stop or passing a parked car.

Before starting a manoeuvre (for example start to turn left or right) cyclists always shall grip the handlebar with both hands – it is much more safe than signalling with one hand during the manoeuvre (because of reduced stability).



Hand signaling - Source: Eco Logic

- **Activities:**
    1. Quiz on rules/road signs and regulations for different countries
    2. Check the compulsory equipment on your bicycle!
    3. Hand signalling in practic

ACTIVITY PLAN

Activity title 4.1: Check the compulsory equipment on your bicycle!

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Check the compulsory equipment on his/her bicycle

Duration: 5 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

• Prepare your bicycle
• Study the rules for the compulsory equipment of a bicycle in your country

Delivery of the activity:

• Check the compulsory equipment as follows
  o Front light | White or yellow light that is visible in dark from at least 150 meters
  o Rear light | Red light that is visible in dark from at least 150 meters
  o Lights are allowed to be installed on the cyclists also and allowed to flash
  o Front reflective (white)
  o Rear reflective (red)
  o Reflectives on the spokes | At least on the front wheel, at least two orange reflectives that are allowed to replaced by a white reflective round stripe on the tires
  o Brakes | Two indenpendently operating brakes for the two wheels
  o Handlebar | A handlebar that is working properly

Conclusion:

• To have all compulsory equipment on your bicycle is crucial for you in order to ride in a safe way.

Tips and tricks

• If any of the compulsory equipment is missing, visit the closest bike shop and buy it.

Activity title 4.2:Hand signalling in practice

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Communicate with other road users with hand signals

Duration: 5 minutes

Target ages: N/A

Type of activity: Indoor/Outdoor

Preparation of the activity (before the activity):

• Prepare yourself for cycling
• Watch the related Art of Cycling video

Delivery of the activity:

In Hungary all manoeuvres should be signed all time, for cyclists by hand signalling.
• Before signaling always look behind your left shoulder (observing the traffic and assessing possible risks)
• Hand signals should be very clear: fully extend your arm – the right one in case of turning right, the left one in case of turning left.
• In Hungary according to the law you have to sign also for example before start and stop or passing a parked car.
Before starting a manoeuvre (for example start to turn left or right) always grip the handlebar with both hands – it is much more safe than signalling with one hand during the manoeuvre (because of reduced stability).

Conclusion:

• To communicate your intentions is crucial for you all the time in order to ride in a safe way.

Tips and tricks

• If you feel unconfident when don't control the bike with both hands, practice it in traffic free environment first.

Useful links:

https://www.youtube.com/watch?v=KSEN978ITK0

Activity title 4.3: Quiz on rules for cyclists

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Know the most important rules for cyclists

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor

Preparation of the activity (before the activity):

• Watch the related Art of Cycling video

Delivery of the activity:

• Answer the questions of the quiz – try to do your best!

Conclusion:

• To get acquainted with the basic rules for cyclists is crucial for every cyclist in order to ride in a safe way.

Tips and tricks

• If you feel unconfident when don't control the bike with both hands, practice it in traffic free environment first.

Chapter #5

Practical tips for cycling

Cycling correctly is not only about rules. Safety cycling is more than obeying all the rules: safe cycling is also about daily routine, observing the environment, assessing risks, making decisions, etc. This chapter probably will help you to look behind the rules and get some tips for 'good' cycling.

Riding on the roadside

Probably each countries' rules for cyclists differ a bit, but all highway codes shall define the position of the cyclists on the roadside – on the right side of the road (except countries with contraflow traffic, of course). Regarding practical issues, while obeying the rules, a cyclist should consider some (or all) of the following aspects, if wants to cycle in safety.

- **Visibility** | If somebody does not cycle close to the kerb (or the roadside) will be more visible for other road users (road users behind the cyclist and drivers of vehicles coming from side roads also).
- **Avoiding obstacles** | If a cyclist does not stick close to the roadside, he/she will have more space to avoid any kind of obstacles, for example potholes, shards of glass, rubbish, etc.
- **Quality of the road surface** | If the road surface is in a poor condition, generally the right side of the road is in the worse condition. Cracks, potholes, mud – all of them are recommended to avoid riding on a bicycle.
- **Maintaining the riding position** | Cyclists should maintain a riding position that is predictable for all road users.

Generally a cyclist should choose its position on the road to have enough space for any manoeuvres at any time.

Riding on the roadside

Passing a parked car

Passing a parked car is not a really challenging maneuver, but there are some things that cyclists should take into consideration before and during passing the stationary vehicle. Cyclists should

- maintain a constant riding position while approaching the parked car with predictability for other road users
- check the road ahead and behind is clear in the direction of intended movement well before reaching the parked car
- sign the intention to pass the parked car (hand signalling)
- move out smoothly after a final check behind over the left shoulder well before reaching the parked car and pass with more than an open door's distance from the car
- if passing more than one stationary vehicle, maintain a constant riding position while passing all the vehicles and the gaps in between
- once the parked car have been passed, perform a final check left in front of the last vehicle before moving left to the most appropriate riding position for continuing the journey

It may look very complicated at first sight, but it isn't. If somebody thinks about the steps of passing a parked car on his/her own, will definitely do the same steps as it is written above. These steps should be a part of the daily routine of a cyclist: looking behind, signaling, moving out smoothly, passing with more than an open door's distance from the car, and moving back to the right side of the road.

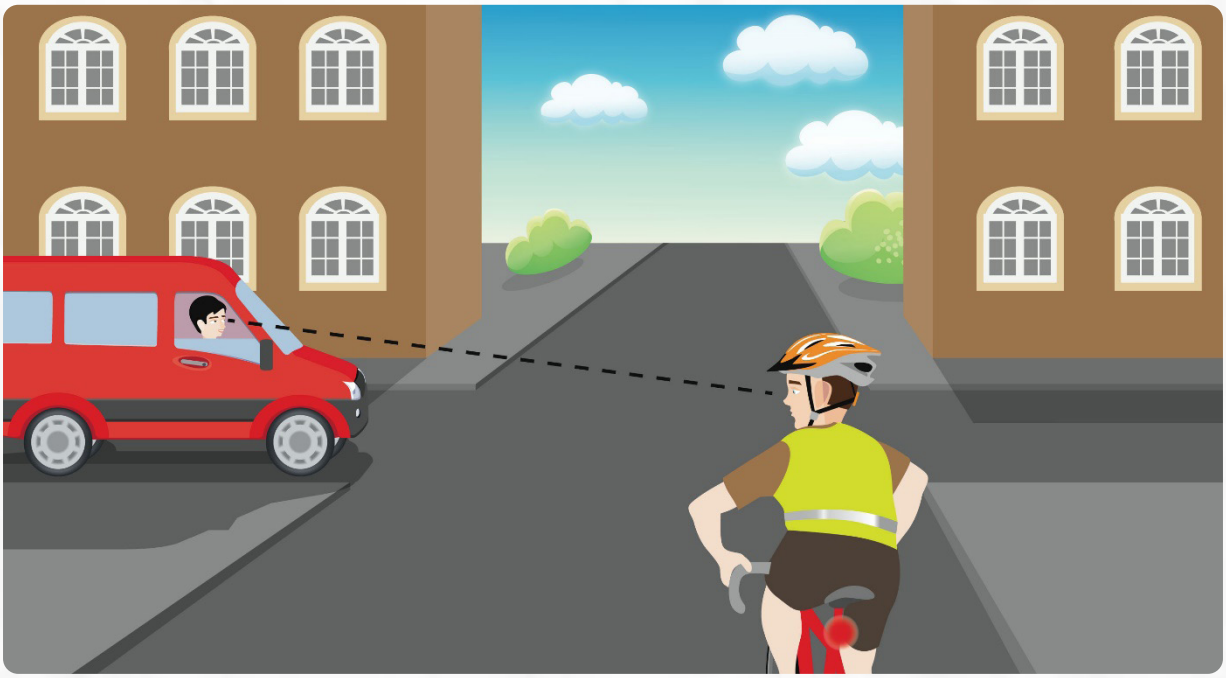
Geting doored

Geting doored

Eye contact

Communication is crucial in traffic for any kind of road users, even for cyclists. There are several traffic situations when eye contact can help road users to communicate their intentions – or at least to acknowledge the presence of other participants of the traffic. Car drivers, cyclists, pedestrians may find several situations when they are trying to look into the others' eyes to get some evidence that they are recognized by the others. For cyclists eye contact can help for example when a bicycle path crosses a road, or in intersections (crossings) where priority is obvious, but good to know that it is recognized by every road user.

But be careful! Just because someone looks your way, or even appears to look right at you, doesn't mean they've seen you, let alone that they've acknowledged your presence or right of way. However, good to know that if someone has not looked at you, you can rightly assume they haven't seen you, and you'd do well to act accordingly.



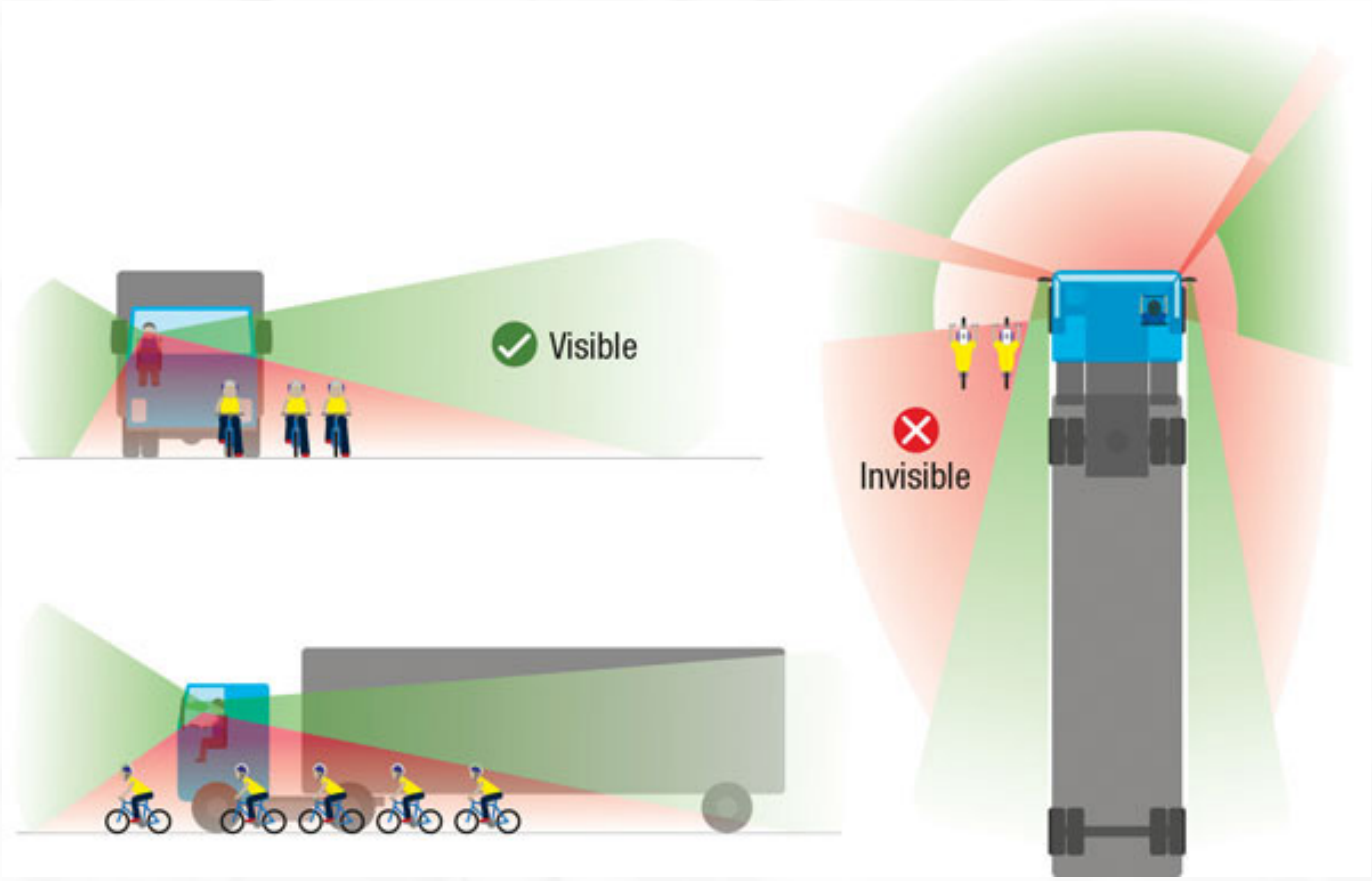
Establishing eye contact - Source: Vuelta SE

How to avoid blind spots?

First of all: what do blind spots mean? These are areas that the driver of a vehicle cannot see by using a mirror and in some cases, looking directly. Smaller vehicles usually have smaller blind spots than larger ones (vans, trucks, buses, etc.), but in almost all kinds of vehicles these areas can be found. For cyclists, it might be very dangerous to be in the blind spot area, especially when a large vehicle turns right or left, as they are invisible to the drivers of the vehicles, even if they have large mirrors.

How can a cyclist avoid blind spots?

- Cyclists should never ride or stop in front of/behind/next to larger vehicles (lorries, trucks, buses, etc.)
- Do your best to make eye contact with the driver.
- Keep your distance and be aware of blind spots while riding your bike.



Blind spot of a truck

Cycling luggage: how to carry your stuff?

The very first question is always about the goal of the ride. The answers are varying: shopping, commuting, spending leisure time with cycling, cycle touring (from short trips to long distance tours) – all goals will determine different solutions for carrying the luggage on a bicycle.

- **Short trips** | For short trips in the city a cyclist does not need any special bike luggage. A comfortable rucksack or a properly mounted basket on the carrier or on the front of the bicycle shall be more than enough. However, the most comfortable and safest solution is to have a carrier on the back of the bicycle and cycling luggage fixed on it.

- **Cycling for leisure** | For longer trips it's good to have at least a rucksack designed for cycling, but the most comfortable solution is the cycling luggage fixed on the carrier – again.

- **Cycling tours** | To carry luggage on the bike is comfortable, and good for shorter and longer journeys also; options range from tiny seatpacks to large panniers with enough room for a week's camping kit.

- **Mountain biking** | Special MTB rucksack is the best choice for mountain biking, with a lot of pockets to bring tools, food, puncture repair kit, and with a hydration pack.

There are a lot of other solutions for carrying luggage: the pockets of a cycling jersey, saddle bags, handlebar bags, other kinds of bikepacking bags. The most important thing is to think about the goal of the ride before buying any kind of cycling luggage and then buying it. Regardless of the type of the luggage it is crucial to fix it properly, as an unfixed luggage could be really dangerous on the bicycle.

Bicycle basket

Cycling luggage

Phone calls and cycling

Riding while using a hand-held mobile is really dangerous (even in some countries it is not allowed) as a cyclist usually needs both hands for handling the bicycle. Using the brakes, changing gear, steering is much more difficult and dangerous with one hand; for an average cyclist it can be a really challenging situation.

The solution seems very simple; using headphones, earphones, earbuds, etc. allows the cyclist to grip the handlebar with both hands. Well, the problem of handling the bicycle is solved, but all these devices will limit the hearing of the cyclist. Regarding the fact that besides eyesight hearing is the most crucial sense of the cyclist, to limit hearing is not a real good idea. A cyclist shall always hear what is happening in his/her surroundings such as the proximity of vehicles or a fellow bike rider calling out instructions.

Furthermore drivers on the phone are more likely to be involved in an accident than undistracted drivers, regardless of whether they're using a hand-held or hands-free system. Distracted drivers take longer to react to hazards, miss other hazards altogether, and make poor decisions about their speed and distance from other road users. Research has also shown that the type of conversation a driver has, along with the difficulty of the driving situation, can further affect performance.

Earphones good for cycling use

Cycling route planners

There are a lot of different route planners, but a cyclist has to be careful when choosing the proper one, as not all route planners are designed for planning cycle trips. The best choice is a real bicycle route planner that takes into consideration the bicycle infrastructure (bicycle lanes, cycle pathes, pedestrian and bicycle zones, etc.), traffic-calming zones, roads where not allowed to cycle, etc.

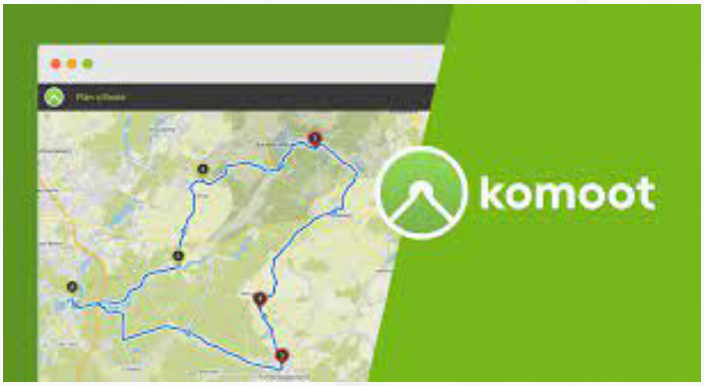
- **Google Maps** | Google Map is one of the most known online map and route planner, but cyclists have to really careful with it. The default setting will be fit for cars, and will design routes for example on highways that is not proper for cycling. In some countries cycle route planner can be chosen also, but in the majority of the countries this option is unavailable. In this case pedestrian route planner can be an alternative option also for planning cycle trips. (https://maps.google.com/)

- **Bikemap** | Bikemap is a map designed for cycle route planning, but it has some limitations, so always good to check the designed route. Users can set several layers (OpenStreetMap, Google Maps, etc) and can find also tracks recorded by registered users in a lot of regions that can be very helpful is somebody is not really familiar with the given region. (www.bikemap.net)

- mapy.cz

There are several apps that can help a cyclist in route planning and orientation also. The most important thing that a cyclist shall take into consideration regarding a route planner application is the offline availability

- Locus Map
- Komoot
- Strava
- Mapy.cz
- Természetjáró (Hungary)



Komoot application

Strava application

Activities:

1. What to do in case of an accident?
    - Check yourself for injuries
    - Check on the well-being of other people, who are involved in the accident
    - Get to safety (if you are able to)
    - Call the ambulance, and tell
        - your name
        - your phone number
        - the place of the accident
        - the number of people involved in the accident
        - how the injuries are serious
    - Wait for help
    - Create your own first aid kit!
        - Antiseptic wipes
        - Assorted bandages
        - Gauze pads in various sizes
        - Medical tape
        - Preferred pain-relief medication
        - Insect sting treatment
        - Non-stick pads
        - Tweezers
2. How do you pick your stuff for cycling?
    - Think of riding
        - in the city from home to your workplace
        - from home to do the shopping
        - in a weekend for leisure
    - What would you bring with you? What kind of luggage would you use?

3. How to plan your ride?

• There are several route planner apps and websites. Choose at least one, and get familiar with it!

• Try to find the best routes for cycling for example from home to your workplace, from your workplace to a friend, from home to do the shopping somewhere in the neighbourhood.

• If you are interested, try to find routes for cycling for leisure, for example starting from your home, or somewhere around a popular destination for cycle tourism close to your home.

ACTIVITY PLAN

Activity title 5.1:How to plan your ride?

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Choose a proper route planner application or website

• Plan a ride with the help of the application or website

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor

Preparation of the activity (before the activity):

• Choose the route planner that is suitable for your goals, for example

- o www.bikemap.net
- o www.mapy.cz
- o www.maps.google.com
- o Locus app
- o Komoot app
- o etc.

Delivery of the activity:

• Think of your next ride and plan the route. First you can choose a well-known route to test the route planner you have chosen.

• The best choice is a real bicycle route planner that takes into consideration the bicycle infrastructure (bicycle lanes, cycle pathes, pedestrian and bicycle zones, etc.), traffic-calming zones, roads where not allowed to cycle, etc.

• Google Maps | Google Map is one of the most known online map and route planner, but cyclists have to really careful with it. The default setting will be fit for cars, and will design routes for example on highways that is not proper for cycling. In some countries cycle route planner can be chosen also, but in the majority of the countries this option is unavailable. In this case pedestrian route planner can be an alternative option also for planning cycle trips. (https://maps.google.com/)

• Bikemap | Bikemap is a map designed for cycle route planning, but it has some limitations, so always good to check the designed route. Users can set several layers (OpenStreetMap, Google Maps, etc) and can find also tracks recorded by registered users in a lot of regions that can be very helpful is somebody is not really familiar with the given region. (www.bikemap.net)

• Mapy.cz | Mapy.cz is a map designed for route planning for pedestrians, cyclist, etc. First choose the bicycle in the route planner, than type of the bicycle (Road bike/ MTB). If you choose the outdoor map, you will able to study also marked hiking or cycling paths and also cycling infrastructure and signed routes for bicycle tours – but with some limitations.

Conclusion:

• Always plan your route with the most suitable route planner.

Tips and tricks

• If you choose pedestrian option on Google Maps you will find a lot more routes that are also good options for cycling – but be careful with this trick, try to check the route on other maps also.

Useful links:

• https://www.youtube.com/watch?v=GCE-RiehX8k

Activity title 5.2:What to do in case of an accident?

Learning outcomes

By the end of this **activity,** the participants will be able to:

• Call ambulance and create an own first aid kit

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor

Preparation of the activity (before the activity):

- Create an own first aid kit – think of the items needed

Delivery of the activity:

• Create your own first aid kit, buy the items needed, as follows:
  - o Antiseptic wipes
  - o Assorted bandages
  - o Gauze pads in various sizes
  - o Medical tape
  - o Preferred pain-relief medication
  - o Insect sting treatment
  - o Non-stick pads
  - o Tweezers

• Think of an accident (hopefully you will never need this topic in your 'cyclist life') - What to do in case of an accident?
  - o Check yourself for injuries
  - o Check on the well-being of other people, who are involved in the accident
  - o Get to safety (if you are able to)
  - o Call 112, and tell
  - o your name
  - o your phone number
  - o the place of the accident
  - o the number of people involved in the accident
  - o how the injuries are serious
  - o Wait for help

Conclusion:

• Always prepare for the worst case also, and keep in mind, what to do in case of an accident.

Tips and tricks

• If you choose pedestrian option on Google Maps you will find a lot more routes that are also good options for cycling – but be careful with this trick, try to check the route on other maps also.

Useful links:

• https://www.youtube.com/watch?v=mmwso1sK-Ww

Activity title 5.3: How do you pick up your stuff for cycling?

Learning outcomes

By the end of this **activity**, the participants will be able to:

• Think of and collect all staff that is needed for cycling, taking into consideration of the cycling activity.

Duration: 10 minutes

Target ages: N/A

Type of activity: Indoor

Preparation of the activity (before the activity):

• Think of the stuff that you would like to bring it and find proper bag for carrying it

Delivery of the activity:

• Think of your next ride. Will you ride
  o in the city from home to your workplace?
  o from home to do the shopping?
  o in a weekend for leisure?

• What would you bring with you
  o in the city from home to your workplace?
    ◘ You won't need any extra stuff compared to walking for example. Just take a proper bag, and put in a small pump and a repair set for punctures.

  o from home to do the shopping?
    ◘ Well, think about your shopping list first, then decide which bag you will take. A backpack, a bicycle bag or a properly mounted basket are all good choices, depending on the length of your shopping list.

  o in a weekend for leisure?
    ◘ First think about your trip – how far do you travel? how long is the route that you have planned? how many days will you spend with cycling? For longer trips always bring

      • enough water
      • some food
      • a pump
      • a repair set for punctures
      • a multitool kit
      • a first aid kit
      • a charged mobile phone

• What kind of luggage would you use?

o **Short trips** | For short trips in the city a cyclist does not need any special bike luggage. A comfortable rucksack or a properly mounted basket on the carrier or on the front of the bicycle shall be more than enough. However, the most comfortable and safest solution is to have a carrier on the back of the bicycle and cycling luggage fixed on it.

o **Cycling for leisure** | For longer trips it's good to have at least a rucksack designed for cycling, but the most comfortable solution is the cycling luggage fixed on the carrier – again.

o **Bicycle tours** | To carry luggage on the bike is comfortable, and good for shorter and longer journeys also; options range from tiny seatpacks to large panniers with enough room for a week's camping kit.

Conclusion:

- Always prepare properly for the trip that you want to ride.

Tips and tricks

• First of all always think about your destination, your goal with cycling and the actual weather conditions, then choose the proper clothes for your ride.

Useful links:

• https://www.youtube.com/watch?v=LP2Dz0jAOek