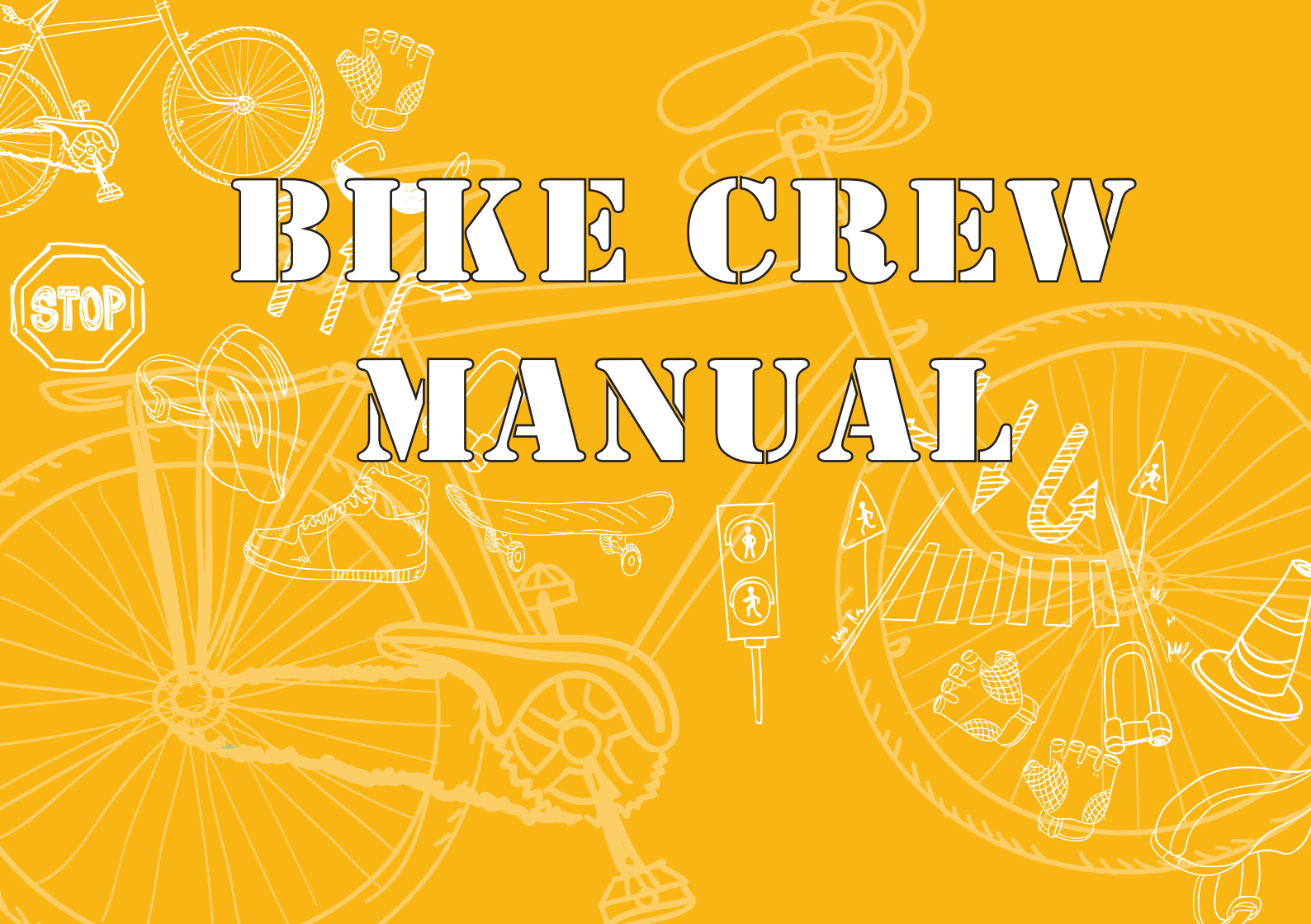


BIKE CREW MANUAL



The purpose of the ambassador programme for Intermediate students is;

- to increase your knowledge about bikes
- to enable you to bike with confidence
- to increase your awareness of cycle safety

You will be able to;

- 'M Check' your bike
- know how to fit your helmet correctly
- inflate a tyre and fix a puncture

?

Do you know why women were not allowed to cycle when the bike was first invented?



Did you know.....
the first bike was
invented in 1817.
That is
200 years ago!

KEY - These symbols mean;



It's the law



Answer a Question



Practical activity



Needs expert tools and knowledge



Fun fact



'M Check'

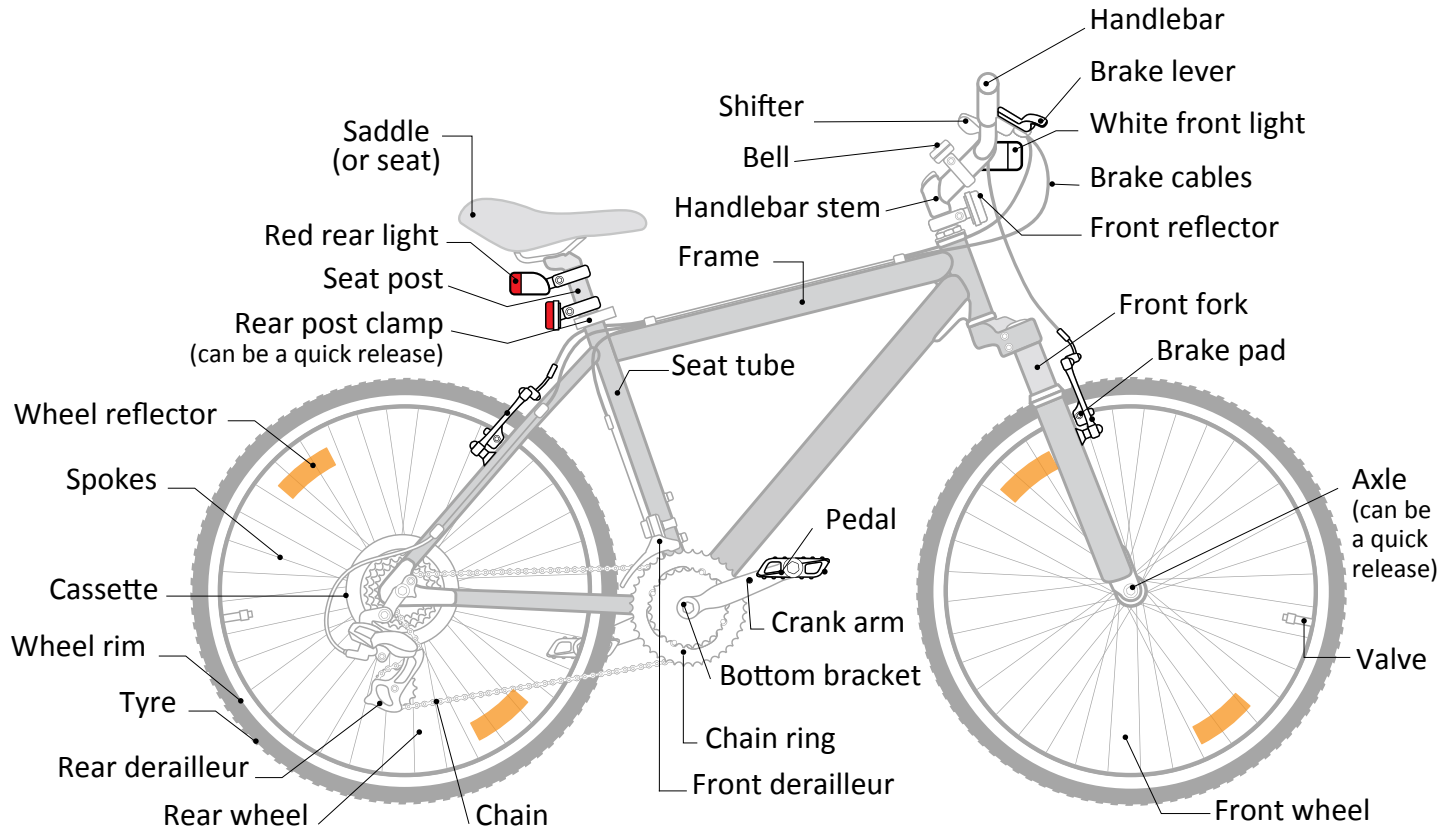
You will learn to do a 4-Point check before every ride and every week or so do an 'M Check' Follow the shape of the M to check your bike is ready to ride

Contents

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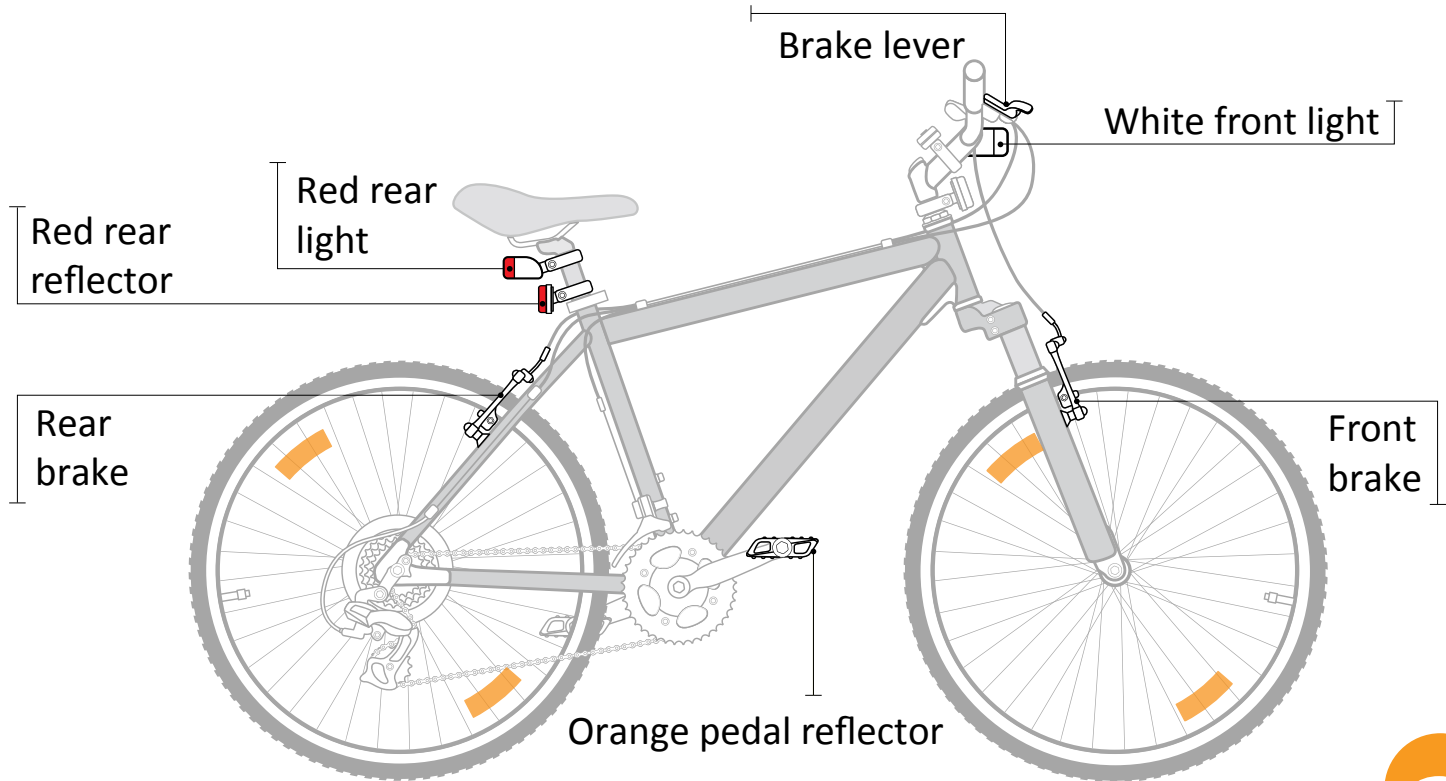


Naming the parts of your bike





Equipment your bike needs to have by law



In New Zealand you **MUST** wear a helmet when riding, it's the law.



Types of bikes

The right bike makes cycling more fun.

Below are the most common types of bike, can you think of any other types?
Which of these bikes is like yours, or which bike would you want to ride to school?

?

Did you know
that different
bikes are made
for different
purposes?

?



Mountain bikes

Designed for riding off-road trails.
Mountain bikes do not go as fast as road bikes but are generally more comfortable.



Road bikes

Designed for riding on paved streets and going fast. Also known as a racing bike



Hybrid bikes

Part road bike and part mountain bike. Almost as fast as road bikes but are tougher and a bit easier to control.



BMX bikes

Their small size is great for various styles of trick and stunt riding or BMX racing.

Mountain bikes

are designed for riding off-road trails.

Any type of off-road riding, as well as riding around town, is great on a mountain bike, and they are usually more comfortable than road bikes. The big spongy tyres and upright frame geometry of mountain bikes can be harder on long road rides.



Road bikes

These bikes are made so that you can ride fast on the road or for racing.



BMX bikes

Used for stunts & tricks or to race.

These bikes are typically smaller and lighter, allowing the rider a great deal more springiness when riding around the street and skateparks.

Due to their low frame, they make great bikes for those who are learning to ride and are used by both adults and children.

The seat tube is short to allow enough space between the rider and bike, this is important when performing jumps and stunts

BMX frames are compact and very sturdy

BMX almost always have only 1 gear

Small wheels are not designed for riding long distances comfortably

Stunts pegs on the front and back wheel enable the rider to do tricks


Small size bike that are very sturdy with great ability to change direction quickly



Hybrid bikes

A cross between road & mountain bikes.

Well suited to riding on bike paths and short-distance trips to school or the park. Easy to ride on the road, but are not as lightweight as road bikes. Good for riding around town or the park but are not suited to rough off-road mountain bike trails.



Can have a comfy seat, carry tray, mud guards and skirt guards, and a basket

Often have upright handlebars and provide a comfortable riding position

Medium-width tyre with a semi-smooth tread

Some hybrid bikes have only 3 gears, fine for the flat but maybe not for hilly areas

Some hybrid bikes have front suspension to smooth out small bumps, but some are fully 'rigid' with no suspension

Which is the right bike for you?



Which would be the best bike for you to ride from your house to school on?

What do you like about this kind of bike ?

What else can you do on this kind of bike ?



Bike maintenance check: M Check



On top of the four point check, every week or so you should perform an M check

Hub

The wheel's hub, does it spin smoothly? Does it feel loose when the wheel is wobbled sideways?

Spokes

Are there any missing?
Are the wheels wobbling as they go around?



Tyres

Do they have tread?
Worn out? Cracks?
Need air?

Wheels

Do they spin freely?

Why is it called an
an
'M Check'?

All about wheels

Bikes come with many different wheel sizes.



The size is usually printed on the side of the tyre

Can you tell from the picture what size the tyre is?



There are different ways wheels are attached:

Wheel Nuts



Both wheel nuts and stunt pegs need the correct sized spanner to remove or replace



BMX Stunt Pegs



How does a quick release work?

If fitted correctly quick releases are very safe.

You need to be able to check that they are done up correctly.

No special tools are required, see below;



Quick release handles are slightly curved.

The word 'close' is on one side of the handle, the other side has 'open'.



When the curve is pointing away from the bike (and the word open is visible) the quick release is loose and your bike is unsafe to ride.



Which of these two pictures shows the quick release in the right position?



The wheels on you bike must be attached properly for you to be safe when riding it!



Inflating Your Tyres

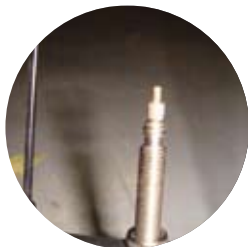
For the best rides your bike tyres need to be a certain pressure. The pressure or PSI your tyre should be can be found on the tyre.

There are 2 main types of valve on modern bikes



1. Schrader

This is the most common type of valve used. This one is shown without the valve cap.



2. Presta Valve

Mostly used on road bikes as it can be easily inflated to a higher pressure.

How do you deflate a tyre?

With the Schrader valve you press the centre down - you may need to use a pen or small stick to do this.

With the Presta, unscrew the little barrel at the end before you do as above.

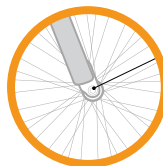
TIP: You must undo the barrel at the end to inflate this as well.

About the HUB.

The hub is the central part of your bike's wheels (front and rear), which joins to the wheel's rim via the spokes and through which the axle is fitted, letting the wheel freely spin. Hubs are specific to front and rear wheels.

About the SPOKES

The spokes on your bike may look like little more than metal toothpicks that fill space between the axle and wheel but, really, these mighty little dudes have some important jobs:



- Add strength to your rim
- Transfer your leg power from the hub to the wheel
- Support your weight on the wheel

What pressure do your tyres need to be? What does PSI stand for?

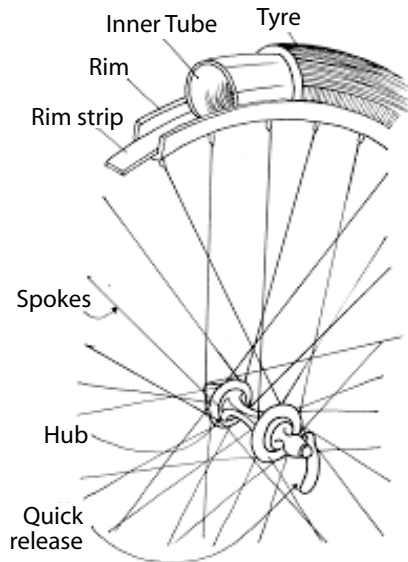


The Anatomy of a Bike Wheel

Most bike wheels you see have 4 parts:

- The tyre
- The inner tube
- The wheel itself, which includes the hub, spokes and rim.
- The rim strip.

Let's look at each in more detail:



Tyre:

The tyre is the outer rubber casing. By itself, the tyre won't hold air. It is open in the center, and has two hard and sharp edges that stand on the rim. These edges are called "beads" and these sit within the rim of the tyre.

Inner tube:

The inner tube is a soft, pliable rubber donut with an air valve underneath, this lets air be pumped in and can also let air out.

When the tube develops a hole for any reason, it will lose air, and need to be patched or replaced.

Rim:

There are many different types of bike rims. As well as holding the tyre onto the wheel, the rim also serves as the anchor for spoke heads. (the bits that attach spokes to the metal rim)

Rim strip

Is to prevent damage to the inside and possibly puncturing of the inner tube by the spoke heads.

This can be a fitting rubber strip, or gummed cotton tape that is on the rim surface.

To do its job, the rim strip has to go all the way around the rim, and cover all the spoke heads or holes (except the valve hole).

Fixing a Puncture

Knowing how to fix a puncture is a great skill.

Punctures are easy to fix with a puncture repair kit and pump, a bike repair shop can fix it for you as well. Reduce the risk of getting a puncture by ensuring your tyres are always fully inflated.

TIP: If you don't want to repair a puncture on your journey, carry a spare inner tube, some tyre levers and a pump so you can change the tube, then fix the puncture when you get home.

You will need:

- puncture repair kit
- bike pump.



Step 1 – Remove the Wheel

REFER BACK TO PAGE 13 - 14



Before you remove the flat tyre, let all the remaining air out. You can do this by taking off the valve cap then pressing the valve down at an angle. (REFER TO PAGE 14)

Puncture
repair kit;
tyre levers
metal rasp
glue
repair patches



Is the
wheel held on
by nuts or a
quick release?
Refer page 13



What other
name is given to a
puncture?



How do I find the puncture in my tube?

Tip - keep the valve of the inner tube in the wheel and put some air into the tube. If you can find the hole by doing this, look and see if you can find what punctured your tube and see if it's still stuck in the tyre. If it is still there it will puncture your tyre again!

If it's a big hole you may just be able to see it. An easier way to do it is to pump air into the tube and listen/look/feel for air escaping. Sometimes the only way to find the hole is to put air into the tube, submerge it in water and look for any bubbles.



Step 2 - Removing the Inner Tube

The easy way to get the punctured tube out of the tyre is with tyre levers.



1. Use the tyre lever. Push the lever end under the bead of the tyre. Between the rim and the tyre.
2. Then push down on the hook end, lift tyre up, hook onto the spokes, insert second lever next to the first.
3. Slide the tyre lever around inside the bead of the tyre, pulling it all out of the rim.
4. Once you have half of the tyre completely out of the rim, you can remove the tube.

Step 3 - Repairing the Tube



Follow These Steps

1) Use metal rasp to lightly rub around the puncture. This roughens the surface and let's the patch grip better.



2) With your finger, apply a thin layer of the glue to the tube, a little bit larger than the size of the patch.

3) Leave for 30-60 seconds. You want the glue to be tacky. While waiting, get patch ready. Pull the silver foil off the back, but don't touch the side it needs to be clean.



4) Carefully apply the patch to the tube. Do not crease your patch otherwise it will not stick down properly.

5) Hold the patch in place with your thumb for 30 more seconds so that it stays in place.

It is easier
to put the tube
back into the tyre if
there is a LITTLE
air in the tube.



6) Pump a little air into the tube to ensure that you have fixed the puncture properly and that the patch is doing its job.



7) Put the tyre back onto the wheel rim. Start with putting the valve in the hole on the wheel.

Use your thumbs to push the tyre bead inside the rim.



Once the tyre is back on, pump up the tyre to the correct pressure.

Put your wheel back onto the bike and secure the nuts or quick release. (See page 13)



Make sure that your brakes are working correctly.



Bike maintenance check: M Check



Handle bars / Headset

Are they firmly
attached?
If they wobble/twist
they won't be safe
when riding

Brakes levers / Hand grips

Are they all firmly
attached to the
handlebars?



Brakes

Do both front and back
brakes work when the
brake levers are pulled?

Brake Pads

Are they contacting the
rim evenly, are the pads
not overly worn?

Brakes

There have been many types of bike brakes since the bike was invented. You can control your speed and slow down, and come to a stop.

Types of Brakes

The 4 most common brakes on modern bikes;



V- Brakes

These are a common type of brake and are called V-Brakes due to their 'V' shape.



Cantilever Brakes

These Brakes are also common. They can be trickier to set up than V-Brakes.



Caliper Brakes

These can be found on all kinds of bikes - BMX, Hybrid, Mountain Bikes and Road Bikes - but they can look quite different.

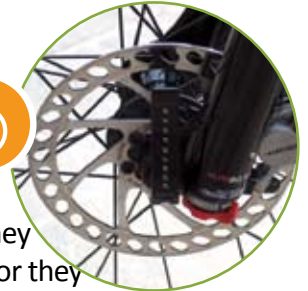


The picture above on the left is a mountain bike, the next picture is a caliper brake on a road (racing) bike.



Disc Brakes

These are common on mountain bikes. They are either hydraulic (they use fluid instead of a brake cable) or they use a regular bike brake cable to make them work.



There are many more kinds of brakes for bikes - the one thing they have in common is they all must be maintained. So if you have to stop quickly and easily, you can.

How do Brakes Work

They all slow your bike using friction. This means that the wheel (and the bike) is slowed by the brakes rubbing against the wheel rim, brake disc or brake hub.



**Squeeze the
brake lever on
the handlebar.**

You squeeze the brake lever. Thin metal cables running to the back and front wheels pull on small calipers, forcing thick rubber blocks (brake pads) to press against the wheels. As they do so, friction between the blocks and the metal wheel rims generates heat, reducing your moving energy, and bringing you safely to a stop.

Checking your Brakes

A quick check can help keep you safe.



Brake Cables

Are they in good condition?
Are they frayed or rusty?
If they are they should be checked for safety and may need to be replaced.



Brake Hoses

Some bikes have hydraulic disc brakes. This means that the brake lever pushes a fluid to the brake 'calliper' which pushes small pads against the brake disc.

These brakes require specialist knowledge and tools to fix. If they are not slowing you down properly or show any fluid leaks then you should take your bike to a cycle shop that does repairs to have checked and or repaired

When you pull your brake lever. Brake pads should NOT touch the tyre it is the rim they press on.

Hydraulic Disc Brakes require specialist knowledge and tools. Take these to a cycle shop



Brake Pads.

These need to touch the rim of the wheel properly to slow the bike down. If you pull the brake lever are the brake pads touching the rim of the wheel?

Rim Brakes VS Disc Brakes



Can you see what is different in the two bikes above?



Brake Disc Pads.

These are harder to check for wear as they are hidden away inside the brake 'caliper'. The pads are very particular to your bike so you should take your bike to a bike shop that does repairs if your brakes are not slowing you down.





Bike maintenance check: M Check



Frame

Is there anything loose on it, are there any visible cracks in it?

Pedals/ Crank

Are they firmly attached and don't wobble sideways?



Chain

Is it clean and oiled?
If it's rusty or stiff it won't work well

Seat

Is it firmly attached and at a good height for the rider?

Seat Post and Handle Bar Stem.



The seat post can be held in place by either a nut and bolt, an Allen key bolt or a quick release. You can check that these are tight by grabbing the seat and giving it a twist. It should be firm and not move when you twist it with your hands.



Your handlebars are connected to the front wheel with a stem. If these are not tight then your front wheel can move, whilst your handle bars don't. This is very dangerous.

A good way to check if your stem is tight is to hold the front wheel between your knees and try and turn the handlebars. If the handlebars turn and your front wheel doesn't then you should not ride your bike until the stem has been properly tightened.



Is your seat in the right position for you?
How do you know?



How can you check to see if your handlebars are tight enough?

Frame

Is anything loose, worn, rusty or broken? Check your frame for damage or issues to keep yourself safe and your bike in good condition.

Pedals / Crank



Are they firmly attached and not wobbly? Is there any rust?

Chain and Gears.

Check that your chain is clean and oiled and not rusty. Keeping your chain clean and oiled is important for the smooth running of your bike. If you allow your chain to go rusty it will cause the cogs on the cranks and wheel to wear out quickly, which can be expensive to repair.

Tip: Don't use too much oil as this will pick up more dirt and make the chain more difficult to clean.

Helmet Check



Helmet Check

In New Zealand, bike helmets must be worn, meet an approved Standard and be securely fastened.



AS/NZS 2063 is New Zealand's bike helmet Standard.

As you get ready to put on your helmet, hold it like a bowl in front of you to make sure there are no cracks on the outer shell or inner surface.

Check too, that the straps are all connected and that you can adjust them if you need too. You may need an adults help with this.

Look for the Safety sticker inside the helmet.

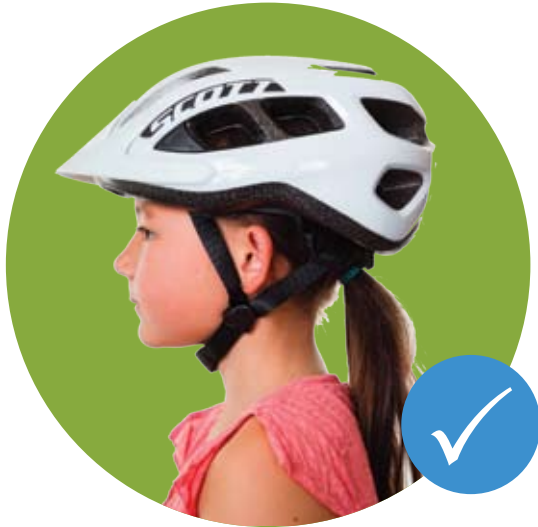
Important

Second-hand helmets are not recommended but if you are thinking of getting one, check it for cracks and make sure it has not been dropped, mistreated or involved in a crash. Check straps for wear and tear or fraying.

Make sure the buckles work and that the helmet can still be adjusted.

Wearing your helmet

Your helmet should be level and secure on your head



Two fingers above your eyebrows to the bottom of your helmet



Four fingers to make a V-shape around the bottom of your ears



One finger under the strap beneath your chin

What's wrong with these helmets?

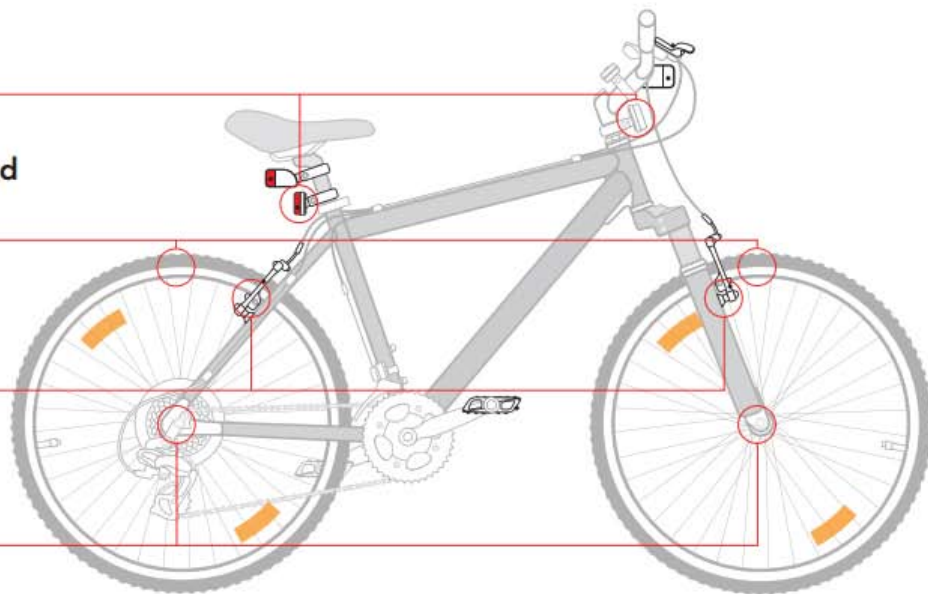




4-Point Bike Safety Check

Before every ride you should check these four things

- 1** Are your reflectors clean and visible?
- 2** Are both tyres pumped up with good tread?
- 3** Do the front and back brakes work?
- 4** Are the quick release levers tight?



Ready for the Ride

What you need to do; It's up to you to make sure that:

- ☐ Your bike has lights, brakes and reflectors that are legal (REFER TO PAGE 5)
- ☐ Wear a bike helmet
- ☐ Closed in shoes
- ☐ Courtesy on the footpath, shared-paths and public spaces



It is important to ride with courtesy and respect for all other riders, walkers and drivers.

Did you know...
there is a Cyclists
Road Code?

What to wear on your bike

- ☐ Hi Vis
It is important that others can see you when you're on your bike.
You can make yourself more visible to other road users by doing the following:
 - ☐ Wear a Hi Vis vest or jacket and back pack cover.
 - ☐ Wear bright coloured clothing.

What else could you add to your bike or yourself to make you more visible to other road users?

**Most importantly
KEEP SAFE!**

WOF with the M Check

Hub

- ☐ Does it spin smoothly
- ☐ Loose or wobbly

Spokes

- ☐ Are any missing
- ☐ Are the wheels wobbling as they go around

Handlebars / headset

- ☐ Are they firmly attached

Brake levers / hand grips

- ☐ Are they firmly attached to the handlebars

Tyres

- ☐ Do they have tread
- ☐ Wear & tear / cracks
- ☐ Need air

Wheels

- ☐ Do they spin freely

Brakes

- ☐ Do both front and back brakes work, when the brake levers are pulled

Brake Pads

- ☐ Do they touch the rim and not the tyre



Every week or so
check your wheels,
tyres, hub
and spokes

Being prepared

Make a list of things that you should take with you on a bike ride with friends to keep yourself safe, dry and prepared for a flat tyre.

About my bike



What is the 4 Point check? ?



How often should you do the 4 point check?





Sharing the path

Take care on shared paths, looking out for pedestrians and other cyclists

- Ring your bell to alert others and slow down when passing
- Keep left and allow others to pass
- Share the path, it's for everyone to enjoy



