Running a Bike Maintenance Workshop in Ealing Primary Schools

Ealing Council

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Ealing
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GET MOVING

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Introduction

Offering a Bike Maintenance Workshop at your school will help develop a cycling community. Children, parents, carers and staff who have access to bicycles that are in good working order and safe, will be more likely to ride to and from school. Students will also learn valuable skills.

The School Travel Team (STT) would like to offer schools a session to train a member of staff, parent or carer, enabling them to run a workshop. It could be held termly or during Bike Week for example. It will also count towards your TfL Travel For Life (STARS) accreditation.

Why offer a Bike Maintenance Workshop?

Bicycles that do not work properly can be a barrier to children, parents, carers and staff cycling to school. Developing and sharing the knowledge to do basic repairs, will help overcome this, as well as contribute to rider safety through having a correctly functioning bicycle. A workshop will appeal to children who enjoy hands-on, practical, tactile activities. It also offers participants the opportunity to learn valuable skills for the future, save money through being able to carry out repairs themselves, and enjoy a sense of community with other school cyclists.

TfL Travel for Life (STARS) Accreditation

Running a Bike maintenance workshop (tfl.gov.uk) will count towards your TfL Travel for Life (STARS) Accreditation. Perivale Primary School coincided running a drop-in cycle surgery with Bike Week, with over 50 bikes fixed, helping it towards attaining Gold status.

"During Bike Week, we held an open surgery every morning and after school where parents and children could bring their bikes in and learn basic maintenance. We learned how to maintain brakes, oil and fix slippery gears, repair punctures and adjust seats/handlebars and mudguards.

"We fixed over 50 bikes, some loose wheels on scooters and even showed some children how to grease their skateboard wheels. As a result, more children are now cycling to school and some bring their ailing bikes to see if we can help fix small problems."

If your school is new to TfL's Travel For Life (STARS) accreditation, creating an account at tfl.gov.uk is quick and simple. The website is a great place to find ideas and download free resources for your school.

Setting up a Bike Maintenance Workshop

First, you will need to find someone to run the occasional workshop at your school. They could be a staff member, a parent or carer. Some basic bicycle maintenance knowledge will help but is not essential.

A member of the School Travel Team will then visit and demonstrate how to deliver a 60-minute workshop to a group of up to 10 children, who should ideally be in Year 5 or 6. Some of the activities delivered will be familiar to them if they have done Bikeability training.

Participants will learn about the basic tools needed, how to check a bike is safe to ride and how to carry out basic repairs, including repairing a puncture.

Only a handful of tools are necessary and these could be obtained by appealing to parents and carers for donations, or by approaching a local bike shop (see appendix 7) on the understanding that bicycles in need of specialist attention could be referred to them. The council may also offer a free toolkit to participating schools.

For more information about our Bike Maintenance Workshop offer, please contact us at sta@ealing.gov.uk.

Training session outline

Time	Topics	Format
5 mins	Introduction – collect and organise the bicycles to be worked on. Explain learning objectives – check bicycle is safe, make minor adjustments or repairs, and repair a puncture.	Practical
10 mins	Talk through the M Check . Explain how important to do regularly. Identifies key points of bike, and key points where issues can arise. Quick release, brakes, saddle is secure, height is correct, pedals turn smoothly, chain is lubricated, front brakes work, handlebars are secure, tyres are sufficiently inflated. Explain will identify issues but need to be aware some will need attention at bike shop.	Demo, Q&A
10 mins	Students work through M Check/ ABCD – move round group as they work in twos on bikes	Practical
10 mins	Gather students back – collect feedback. Show how to Tighten brakes. Flip bike over to oil chain, adjust gears.	Q&A, Demo
20 mins	Input on how to repair a puncture. Have wheel ready to work on – get students to help with tyre removal, locate puncture, repair puncture, inflate and refit. Give children inner tube to practice fitting patch to.	Demo, Q&A
5 mins	Plenary: Take questions, recap knowledge and talk through Bike Maintenance Workshop formats	Q&A handout

After the children have attended the session they can be awarded a certificate and a factsheet (see Appendix 1 and Appendix 2) can be sent home with them so that their parents/carers know what they have learnt.

Bike maintenance resources

Below are a set of resources to help with the running of a Bike Maintenance Workshop. A PowerPoint is also available.

- Appendix 1 Essential tools
- Appendix 2 M Check guide
- Appendix 3 ABCD Check guide
- Appendix 4 Puncture repair guide
- Appendix 5a Bike part worksheet
- Appendix 5b Bike part worksheet answers
- Appendix 6 Bike Maintenance Workshop Attendance Certificate
- Appendix 7 Ealing bike shops
- Appendix 8 Useful links

Appendix 1 Essential tools

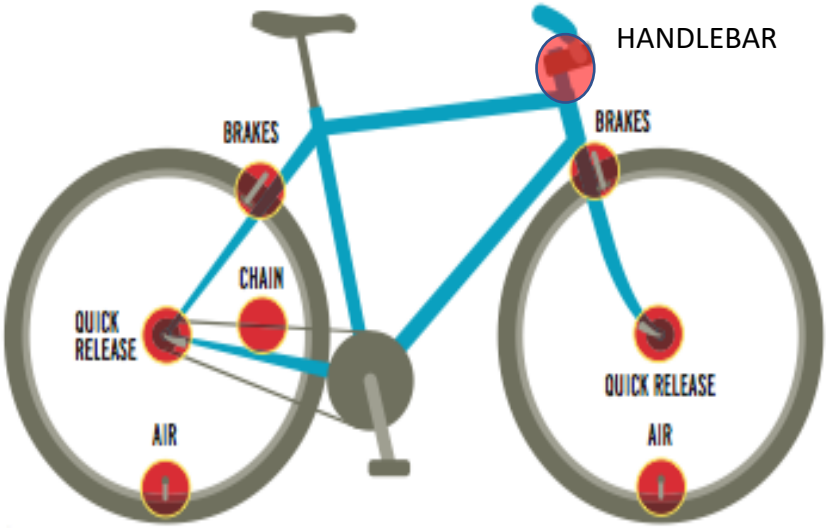
Tool Type	Why use
Tyre levers 	To remove and refit the tyre when you have a puncture
Allen keys 	Many components can be adjusted or replaced using a set of bike-specific Allen keys
Track pump 	Essential for ensuring tyres are correctly inflated. Tyres should feel firm when you squeeze the sidewalls. Tyres that are too soft can be more prone to punctures or have a puncture. The pressure of the tyre also affects the handling of the bicycle.
Adjustable spanner 	Many bikes have Allen key bolts but also standard bolts. An adjustable spanner should be able to fit most.
Puncture repair kit 	Includes the essential bits to repair a tube. However, the glue does come with health warnings that need to be observed.
Bike oil 	Chains will rust if neglected, severely hampering how the bike will ride. The oil can also be used to improve the function of other moving parts on the bike.
Rubber gloves 	Fixing bikes can be dirty work, so a pair of rubber gloves can be useful to save hands from stubborn to shift oil and grease.
Cloth 	An old cloth or rag can be very useful to clean hands and wipe off excess oil and grease.

Appendix 2 M Check

1. Begin with the back wheel. Check that the wheel is securely fitted with the quick release (a lever mechanism on the hub) turned in towards the pedal area, or the bolts are tightly fastened. Also check the spokes on the rear wheel by squeezing them in pairs between your fingers – this will reveal if any are broken, possibly causing the wheel to not rotate or rub on the brakes or frame.
2. Move on to the saddle, top of the seat tube, rear brake area. Check the wear on the brake pads – should be plenty rubber. Check they are engaging evenly with the back wheel. Check the saddle post clamp is secure by seeing if possible to rotate the saddle, also that it is level. The saddle height, the upper surface should be level with their hip for efficient, pain-free pedalling. Be aware there is a saddle height limit on the seat post which should not be exceeded – if it is, time for a replacement bike. The saddle post height etc can be adjusted by using an allen key on the seat post clamp, or spanner if there is a bolt. Avoid over –tightening. Think about turning a tight doorhandle strength. Check the tyre by squeezing the walls between two fingers. It should be firm. If not, reach for the pump. Also check the tyre for wear, and any objects piercing it.
3. Move on to the pedal area. Check the chain is well oiled – this will have a major impact on how the bike rides, changes gear. Hold both pedals and push up and down simultaneously to see if there is any movement in the bottom bracket area. If there is, the bike will need attention at a bike shop, to replace the bottom bracket.
4. Move on to the handlebar area. Check that there are plugs in the ends of the bars. Put the front wheel between the knees and squeeze – see if possible to move the bars from side to side with the wheel straight ahead. If not, the headset will need tightening. Use an Allen key to slacken off the side bolts. Check the top bolt is tight – though not over tight, just until you feel resistance, then tighten up the side bolts, similar tension as if opening a tight door handle.
5. A final useful brake check is to apply the front brake and push forward – the rear wheel should begin to rear up like a bucking bronco. Then apply the rear brake and pull back – the front wheel should pull up as if pulling a wheelie.
6. NB: All parts should be tightened in a clockwise direction Remember “Righty Tighty, Lefty Loosy”.

Appendix 3 ABCD Bike Safety Check List

✗ If your child's bike does not pass this checklist, it is not safe to ride.



A = AIR

- ✓ Is there air in the tyres? They should feel firm when you squeeze the sidewalls.
- ✓ Are the tyres in good condition?

B = Brakes

- ✓ Pull the front brake and push the bike forward – does the rear wheel lift up?
- ✓ Pull the rear brake and pull the bike backward – does the front wheel lift up?
- ✓ Do the wheels spin freely?

Note: Bikes are required to have working brakes or they are not roadworthy.

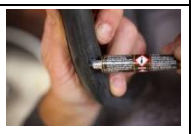
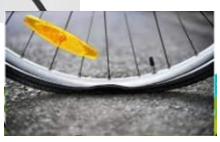
C = Chains

- ✓ Turn the pedal backwards – does it run smoothly or does the chain catch?

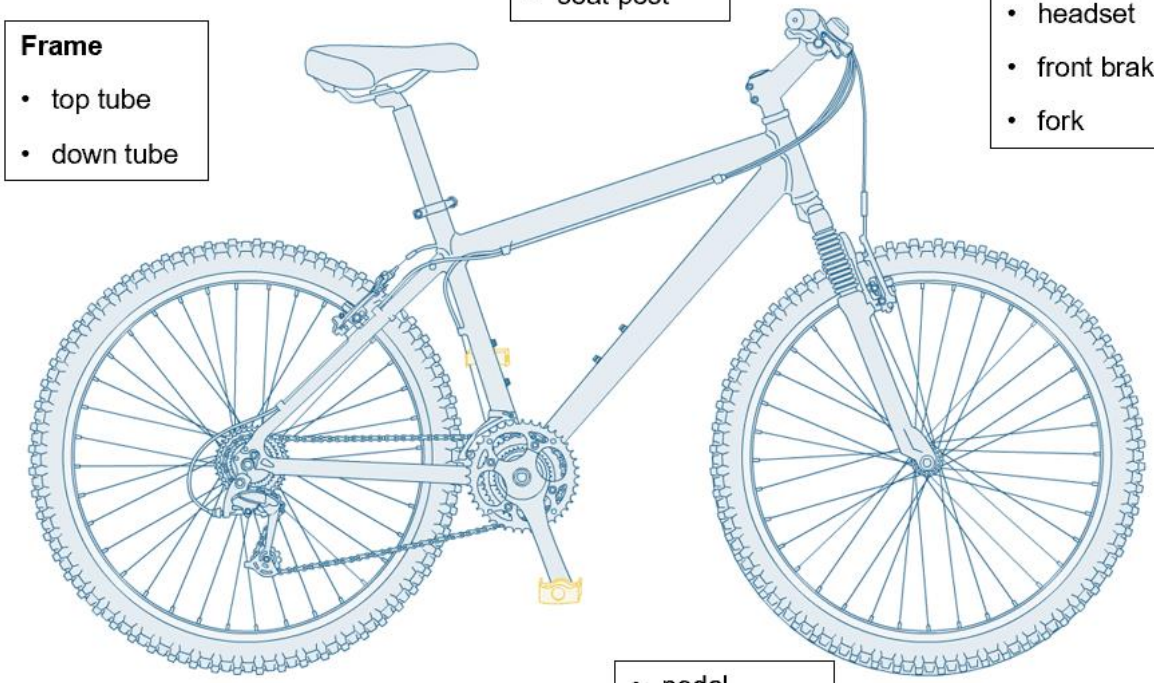
D = Direction and dangling bits

- ✓ Do the handlebars move from side to side and are they tight?
- ✓ Are the saddle, handlebar and wheels held firmly by the bolts/quick releases (in 'close' position)?
- ✓ Check that the "minimum insertion" line isn't visible on seat post.
- ✓ Are there any loose bolts or obvious broken parts?
- ✓ Check bar end plugs on handlebar are installed and not lose or damaged.

Appendix 4 How to repair a puncture

Step	Action
1	Remove the wheel and use the tyre levers to remove the tyre from the rim. Gloves will help as it can be a dirty job. 
2	Check the tyre and remove the object that caused the flat (line up the inner tube to where it was in the tyre and look or feel gently around the inside of the tyre with your fingers). 
3	Locate the puncture in the tube. You may need to inflate it using a pump to find the puncture. If problematic, you will need to put the inflated tube in tub of water, or a sink, to find the hole. Once located, mark it with chalk, usually included wi puncture repair kit. Or just replace the tube. 
4	Roughen the inner tube around puncture. Use the sandpaper to do this. The area you roughen should be bigger than the patch you are applying.  
5	Apply rubber solution - only a pea size amount and don't be tempted to add too much. 
6	Apply the patch. 
7	Dust the patch and surrounding area with fine dust or chalk 
8	Pump a small amount of air back into the tube. Refit the tyre to the wheel with one side not fitted inside the rim. Return the tube to inside the tyre, inserting the valve first. Once inside the outer tyre, begin to refit the edge of the tyre back inside the wheel of the rim. This job is best done by hand, working the tyre lip back inside the rim. You need to check it's seated perfectly and not nipping the inner tube once fully re-fitted. Try to avoid using tyre levers for the final bit, as you can burst the inner tube. Finally, pump up the tyre, and spin it in between your hands to check it's seated perfectly on the rim. If no bumps or bulges, refit it to the bike.  

Appendix 5a Bike Anatomy Worksheet



Saddle area
- saddle
- seat post

Front set
- handlebar
- headset
- front brakes
- fork

Frame
- top tube
- down tube

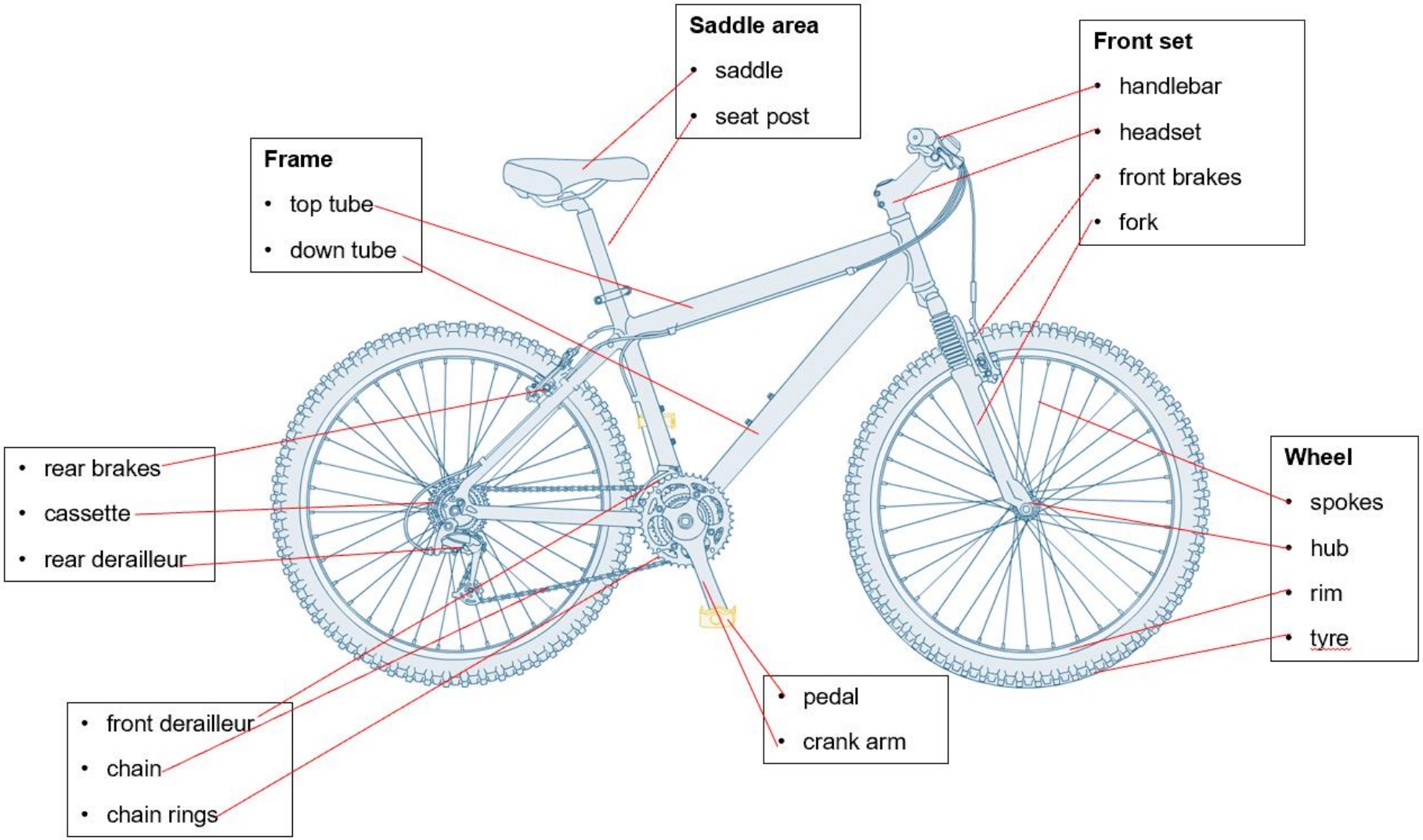
- rear brakes
- cassette
- rear derailleur

Wheel
- spokes
- hub
- rim
- tyre

- front derailleur
- chain
- chain rings

- pedal
- crank arm

Appendix 5b. Bike Anatomy – answer sheet



Appendix 6 Example attendance certificate

Basic Bike Maintenance

Awarded to

_____

xxx Primary School

for having fun saving bicycles

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Appendix 7 Ealing Bike Shops

- Wheelpower bike shop, 112 Broadway, W13 0SY
- The Bike Shop Greenford
- London Bike Hub, UB6 9BX
- The London Cycle Workshop, W5 5AS
- Woolsey of Acton, W4 5DH
- Bicycle Repair Shop, W3 7SH

Appendix 8 Useful links:

- Bike maintenance skills – Transport for London
- The M check for your bike in 11 steps - Sustrans.org.uk

Acknowledgements

This guide to schools has been produced by Ealing Council's School Travel Team. Resources, some adapted, from TfL STARS and established cycling organisation **Sustrans** have been included.