

Bicycle Wheel Building (1-day workshop)

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Time: 10 am to 5 pm

Duration: 1 day

Location: Queen Edith Community Primary School, Godwin Way, Cambridge, CB1 8QP (in the Community Room)

Max students: 8

Course level: Suitable for those with no experience of wheel building.

Course content: A knowledge of wheelbuilding can be invaluable to any cyclist who wishes to do their own maintenance and repair. This is a practical course where you learn to lace, build and true hand built wheels. Where necessary, the underlying theory behind the practice is also introduced, based on the accepted standard textbook¹.

This course teaches you sound wheelbuilding principles and skills by building durable wheels in the 'standard' pattern (36 spoke cross-3). This provides a solid foundation for those wishing to try building wheels with alternative patterns in future. (**Note** Radial, half-radial and other exotic lacing patterns are not covered on this course.)

Numbers are restricted to eight students per instructor so that you get all the assistance you need in a small intimate group. Apart from being prepared to get your hands dirty, you should anticipate having a satisfying and enjoyable day. By the end of the course, you will have sufficient knowledge and skill to build reliable front and rear wheels.

Course aims: After the workshop you will be able to:

1. hand-build strong and durable front and rear wheels;
2. optimise 'machine-built' wheels to make them more durable;
3. replace spokes and retrue wheels with confidence.

Topics:

- components and tools
- dismantling and rebuilding wheels
- lacing 36H wheels in a cross-3 pattern
- tensioning
- correcting spoke line
- lateral and radial truing
- centering (dishing)
- stress relieving

¹ *The Bicycle Wheel* Jobst Brandt ISBN: 0-9607236-6-8

Teaching method: Practical. It is advisable to wear suitable (old) clothes.

Learning objectives: By the end of the workshop you will be able to:

1. Select appropriate components for building wheels.
2. Correctly lace and true cross-3 wheels.
3. Correct spoke line and avoid spoke wind up.
4. Tension spokes evenly and sufficiently for maximum strength.
5. Stress relieve wheels to ensure durability.
6. Replace broken spokes and/or retrue your existing wheels.

Mandatory equipment:

- 1 fully-assembled, functional *rear* wheel (700C or 26" MTB size, 36 spoke cross-3 lacing is ideal) for rebuilding during the workshop. It is **vital** that this wheel a) is 'true' and b) that none of the nipples are corroded or 'frozen' in place (which makes dismantling impossible). A new 'budget price' wheel would be a good solution.
- Spoke key. The 'Spokey' type is strongly recommended in the 3.40mm size (black or yellow). It features a comfortable plastic body with a hardened metal insert.
- Screwdriver 3mm x 80mm flat-bladed. (A "jeweller's screwdriver" is ideal.)
- 1 or 2 old rags (for wiping greasy hands)
- Pair of leather gloves (optional protection during stress-relieving)

Optional equipment:

- Hubs, spokes and rims to assemble during the workshop. (You need to bring a fully-assembled wheel in any case.) If you intend building your own components please contact the trainer well before the workshop to discuss this with him.
- Truing stand
- Note-making materials

Equipment provided: Practice components
Lubricants and hand cleaner
Truing stand
Dishing gauge
Handout

Lunch and refreshments: Lunch is *not* provided, but tea and coffee are. Please bring your own packed lunch and mug.

Getting there: Queen Edith Primary School is south east of Cambridge city centre. There is plenty of car parking on site, access from Godwin Way. From the Railway station, it takes about 10 minutes via Citi1 bus service (Stagecoach) to Wulfstan Way, running every 10 minutes. The school is 5 minutes walk from the bus stop.

The Community Room faces the school entrance.