

Metal and Wood Centre Lathes

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Machinery & Power Tools



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A centre lathe holds a workpiece between a headstock chuck and a tailstock centre and spins it while a cutting tool removes material. Metal lathes turn steel, brass and aluminium; woodturning lathes spin timber for bowls, spindles and handles. Both teach the fundamentals of subtractive machining.

Key Features

- Swing over bed around 200-330 mm for school metal lathes
- Wood lathes commonly 350-450 mm swing
- Gear or belt-driven spindle speed ranges
- Compound tool rest for setting cut depths
- Tailstock with dead or live centre for long work

Typical Uses in the Workshop

- Turn cylinders, tapers and shoulders on metal rods
- Cut screw threads with the correct tool geometry
- Turn spindles, handles and bowls on the wood lathe
- Face off and drill centred holes in stock

Safe Operation

1. Mount work securely in the chuck or between centres
2. Set the tool rest close and the tool at centre height
3. Start slow and increase speed as control improves
4. Take light cuts and let the tool do the work
5. Switch off, stop the spindle and brush chips away

SAFETY NOTES

- Tie back hair and remove jewellery before starting
- Wear eye protection; chips, not swarf gloves, are the rule
- Never measure or touch work while it is spinning
- Keep tools sharp and handles secure
- Turners must not wear gloves when working on a lathe

Maintenance & Consumables

- Clean and oil the ways after every session
- Check chuck jaws and centres for damage
- Keep cutting tools sharp and correctly ground
- Cover the lathe when not in use
- Service the belt or gear drive annually

Specification & Buying Notes

For teaching, buy a robust machine with a proper chuck guard, an emergency stop and a well-documented service manual. Wood lathes need a tool rest and chisel set included; metal lathes need a 3-jaw chuck, change gears and a faceplate.