

Tools

Select, use, and maintain tools, equipment and machinery for a Stage 3 BCATS project.





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Introduction

School gives you the opportunity to build a good understanding of a range of tools, equipment and machinery and of how to use and maintain them. Some are used in almost all the building, construction, and allied trades, such as tape measures and screwdrivers. Others are used almost solely by those in a particular trade, such as nail guns and paint sprayers.

You will need to find out more about the particular tools, equipment and machinery required of your Building, Construction and Allied Trades Skills (BCATS) project.

A successful BCATS student...

Knows:

- The right tools to use for a job
- The standard that is expected for a finished job
- The questions to ask to inform a job
- When to ask questions and when to give advice
- The skills needed to complete a Level 3 BCATS Project

Does:

- Turn up on time everyday
- Follow instructions
- Follow Health and Safety procedures and show 'due care'
- Their work in a timely manner and to a high standard

Is:

- Honest and trustworthy
- A good timekeeper
- A team player
- Willing to learn
- Hardworking
- An outstanding representative of the school
- A confident communicator

Select, use and maintain tools, equipment and machinery for a Stage 3 BCATS project.

Evidence requirements

Outcome 1 – Select, safely use, and maintain tools and equipment for a Stage 3 BCATS project

1.1	Tools and equipment required for a Stage 3 BCATS project are selected in accordance with the BCATS project documentation, specifications and workplace practice.
1.2	Selected tools and equipment are inspected and used safely, in accordance with specifications and workplace practice.
1.3	Selected tools and equipment are maintained in accordance with specifications and workplace practice.
1.4	Tools and equipment are cleaned and cleared after use, in accordance with workplace practice.

Outcome 2 – Select, set up, safely operate and maintain machinery for a Stage 3 BCATS project

2.1	Machinery required for a Stage 3 BCATS project is selected in accordance with the BCATS documentation, specifications and workplace practice.
2.2	Selected machinery is set up in accordance with specifications and workplace practice.
2.3	Selected machinery is operated in accordance with specifications and workplace practice.
2.4	Machinery and work area are cleaned and cleared after use, in accordance with workplace practice.
2.5	Machinery is maintained in accordance with specifications and workplace practice.

Assessment evidence and judgement

Assessment that you have achieved this unit standard must be supported by evidence collected as you do your Stage 3 BCATS project. You can record this in your student work diary and add photos of the results of using the tools, equipment, and machinery.

You will need to use:

- hand and power tools
- mechanical and non-mechanical equipment
- fixed or mobile machinery.

You will need to record how you have selected, checked, safely used, and looked after the tools, equipment and machinery. This includes recording that you:

- selected tools, equipment, and/or machinery needed for the different stages of your project
- safely used them for their intended purposes, including getting proper training before use and wearing/using safety gear
- maintained the tools, equipment, and machinery (and know when specialist maintenance is required).

Your teacher (or employer if you are doing Gateway) will also need to formally declare they have observed you selecting, safely using, and maintaining the tools, equipment and machinery.

Different schools have different rules about the use of machinery such as circular saws, mitre saws, and thicknessers. You do not have to use these to achieve this standard if the project needs them but your school allows only the teacher to use them. However, you will need to know how to set them up and remember how your teacher uses them, and you will need to use other machinery to achieve this standard.

If you are being assessed against this unit standard on your Gateway placement, you can spend some class time researching why certain tools, equipment and machinery (rather than others) were used.

While your teacher (or employer) will show you how to use tools, equipment, and machinery correctly, you will also need to refer to how you used manufacturers' specifications. Manufacturers' specifications set out how the manufacturer expects people to safely use and look after their product. Being able to read and follow them is especially important when choosing whether or not to buy the product and when becoming competent in using and caring for it. Even after leaving school, you must ask for help if you are not sure about how to use it properly.

Tools of the trade

Studying and getting to know all the tools and materials of your trade while you're still at school will give you a real advantage if you go on to become an apprentice. As a BCATS student, you'll be assessed on the way you select, use and maintain tools and machinery.

It will also help you when you go on to buying your own good quality tools and taking care of them. You will know the correct names for the tools you use, the exact function they perform, and what Personal Protective Equipment (PPE) or safety regulations or procedures are required when using them.

Using the right tool for the right job in the right way isn't only good practice for the workplace, it's critical to getting the right result for your BCATS project.

Selecting tools, equipment and machinery

During a BCATS project you will be assessed on the way you select and use tools. The term 'tools' is used in this section to refer to tools, equipment and machinery.

Your teacher will be able to advise you on selecting the best tools and confirm your selection. If you're completing your project in a workplace, your employer will give you clear direction on what you'll need to use.

Professional tradespeople select tools based on their own experience, knowledge and trade specific expertise. Below are some prompts to help you build this expertise in selecting yours.

Things to consider when selecting tools

- Appropriateness for the job – are you going to be able to use the right tool in the right way?
- Quality – is the tool in good condition, made of strong materials, and fit for purpose?
- Safety – is the tool safety certified (power tools), up to current standards and undamaged?
- Weight – can you use the tool for long periods without causing strain or injury?
- Comfort of use – does the tool have a good grip, padded handles or a harness?
- Available space for use – do you have a safe and clear work area for using the tool with enough clearance to keep yourself and your classmates/workmates safe?

Things to consider when planning to use and store tools

- Duration of use – are you likely to be pushing the tool past its limits?
- Storage – where will you store the tool when it's not in use, including during lunch breaks?
- Security – how will you keep the tools secure in the classroom at the end of lessons or if you're off site?
- Power and fuel requirements – will you need to get a generator or petrol?
- Maintenance and breakdowns – who's responsible for the upkeep of tools and what should you do if something breaks?
- Standards and regulations – are all the tools you're using safety checked and tagged (if required)?
- Potential to cause nuisance – can you mitigate (reduce) the risk to yourself and others if you're going to cause a lot of noise, dust or vibrations?
- Health and safety – do you have the required PPE to safely use the tools?
- Weather – is it too hot, cold, dry or wet to use it safely and without affecting its performance?



Care and maintenance

It's really important that you see cleaning and maintaining your tools as part of the project you are working on. Good practice in tool maintenance means knowing how to correctly clean, maintain and store all your tools, from your smart phone through to the largest machine.

Although it may not seem like it at times, looking after your tools – or your school's or employer's tools – is not a chore to suffer through at the end of the day but part of your day. A job isn't finished until all the tools are checked, cleaned and put away.

Developing good habits of care, maintenance, and storage preserves the life of the tool. It also allows you to start the next day without having to waste time finding or replacing tools, repairing or arranging repairs, or unravelling messes that could already have been dealt with.

Hints for keeping tools in good repair

- Keep your tools dry. Power tools need to be kept away from water, hand tools need to be dried (and often oiled) after getting wet, and even equipment intended for use around liquids (such as cement mixers) needs to be dried after use.
- Inspect your tools before you use them. Make sure that they are safe and fit for purpose. If in doubt, check with your teacher/employer.
- Make sure your power cords are not frayed, or otherwise damaged, and have a current safety inspection tag.
- Only use the right tool for the job – using the wrong tool will frequently result in it (or you) getting damaged.
- Keep your sharp tools sharp – it's much more dangerous to have a blunt tool than a sharp one.
- Operate tools according to the manufacturers' instructions – they are there to keep you safe and to do a good job.
- Make maintaining your tools regularly part of your daily routine. Doing so with your school's/employer's tools will give you good practice for when you have your own.

Never throw your tools to a class or workmate, drop them from one level to another or leave them on shelves, scaffolds, platforms or other locations where they could fall and break or fall and injure someone.

Never pull your power tools out by the chord – it's not safe and it will cause damage.

The difference between tools, equipment, and machinery

Tools

All trades and professions use tools of some description. Doctors use stethoscopes, butchers use knives, hairdressers use scissors – and all of those people use smart phones and computers.

‘Tools’ is the term that’s usually used to describe the handheld devices or ‘things’ that help us to do our jobs.

In the building and construction industries, tools are usually separated into ‘hand tools’ and ‘power tools’.

Hand tools are things like: hammers, screwdrivers, brushes, trowels, wrenches, knives, crimpers, clamps etc.

Power tools are powered by cord, battery pack, petrol (or similar), hydraulic force or compressed air. They are things like: mixers, saws, cutters, drills, grinders, nail guns, laser measurers, etc.

Equipment

Equipment is a general term for gear that is not a ‘tool’ or ‘machinery’ and is used for a specific task or trade.

In the BCATS environment, equipment might be a small or large set of ‘things’ that you use to complete a project. Examples of equipment common across many of the building, construction and allied trades are:

- Tape measures
- Electric leads and residual-current devices (RCDs)
- Mitre rulers
- Wheelbarrows
- Ladders
- Tarpaulins
- Levels (eg spirit or laser)

Machinery

'Machinery' is the heavy or larger tools that are needed to carry out work. 'Mobile machinery' (or 'portable machinery') can be carried for use on a job on-site.

You may sometimes hear the term 'plant'. This refers to immovable equipment that stays in the workshop or factory but is referred to as 'fixed machinery'.

Machinery is almost always unique to a trade.



