Introduction: Key Purpose of Project

During key stage 3 pupils use a wide range of materials to design and make products. In this project pupils will work out their ideas with some precision, taking into account how products will be used, who will use them, the materials that will be used and their appearance. They will develop their understanding of designing and making and expand their practical skills. They will use both drawing and modelling as an integral part of designing and making. The main aim of this project is to develop pupils understanding of designing and manufacture.

Students are required to design and model their own modern style building using architectural methods of drawing and manufacture. The building could be used for any purpose from a home, shop, sports hall etc. Students are asked to design the outside and inside of the building, the floor plan and landscape. Students must consider the overall appearance of the building and the materials that could be used. Students will be provided with standard shaped outer walls that could be modified to fit the design of their building. The architectural model that students will produce must be high quality and accurately made. Students will be asked to produce photographic evidence of their manufacture.

The project allows pupils to understand basic principles of perspective drawing, architect drawings, anthropometrics and ergonomics. The project builds upon design and making skills previously learnt. Pupils will also be introduced to other areas of design including:

Aims of the project:
- To enable pupils to develop their practical skills.
- To develop knowledge and understanding of materials, tools, machinery and processes.
- Select and use a range of tools, equipment and processes safely and accurately.
- Understand how to take account of working characteristics of materials and components and restrictions imposed by tools and equipment.
- Accurately measure, mark out, cut and waste material. High quality finishes produced.
- Effectively join a range of materials using advanced techniques.
- To evaluate work throughout the manufacturing process.
- To develop knowledge/ skills to enable achievement of a high quality finish in practical work.

Knowledge and understanding that will be needed or acquired:
- Marking out techniques, the use of templates and accuracy.
- Understand how to take account of working characteristics of materials.
- Accuracy of modelling and scale drawings.
- Knowledge of perspective drawing, architect drawings, anthropometrics and ergonomics.

Pupils will be assessed on:
- Research, analysis and planning of making.
- Design ideas and Development.
- Modelling and making.
- Evaluations, testing and modifications/ improvements.
- Production of effectiveness of outcome (level of accuracy and finish)

Key Terms:

Areas to be covered within the Project:
During the project students will focus on Specifications, Mood Boards, Product Analysis, Research, Anthropometrics and Ergonomics, Design Ideas, Development, One Point Perspective, Two point Perspective, Architectural drawings and Elevations, Modelling, Photographic Manufacture and Evaluations.

Acknowledgment of the range of skills of year 8 will be needed in order to keep the attention of the whole class. Allowing freedom within the project to personalize the work may help to do this. Also challenging the whole class and allowing for differentiation within the class. Pupils will also be introduced to peer assessment and evaluation of their ideas and of others.
<table>
<thead>
<tr>
<th>Outline of Key Developments</th>
<th>Key Activities to Fulfil Developments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing, planning and communicating ideas</td>
<td>Developing, planning and communicating ideas.</td>
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<tr>
<td>• Generate, develop, model and communicate ideas in a range of ways, using appropriate strategies.</td>
<td>• Introduce the project and allow pupils to explore the use and possible options of the building (Mind Map).</td>
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<tr>
<td>• Respond creatively to briefs, developing their own proposals and producing specifications for products.</td>
<td>• Pupils will be required to develop and communicate a range of design ideas using appropriate strategies.</td>
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<tr>
<td>• Use their understanding of others’ designing to inform their own.</td>
<td>• Use a range of research techniques (Mood Board and Product Analysis) to develop Specifications.</td>
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<tr>
<td>• Analysing existing products and solutions to inform designing and making.</td>
<td>• Pupils will be required to develop a range of ideas. Students will practice their sketching techniques, annotating and evaluating each idea.</td>
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<tr>
<td>• Undertake focused tasks that develop knowledge, skills and understanding in relation to design and make assignments.</td>
<td>• Develop a final design idea in relation to the specification. Improving and adapting the idea.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Tools, equipment, materials and components (including CAD/CAM)</th>
<th>Tools, equipment, materials and components</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Applying knowledge of materials and production processes to design products and produce practical solutions that are relevant and fit for purpose.</td>
<td>• Demonstrations on marking out, precision and accuracy.</td>
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<tr>
<td>• Have a broad range of techniques, including handcraft skills and CAD/CAM, and use them to ensure consistency and precision when making single and multiple products.</td>
<td>• Demonstrate safe use of tools and machinery to be used. Rules and regulations of the workshop.</td>
</tr>
<tr>
<td>• Evaluate which hand and machine tools, equipment and computer-aided design/ manufacture (CAD/CAM) facilities are the most appropriate to use.</td>
<td>• Demonstrations of a selection of hand tools.</td>
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<td>• Developing, planning and communicating ideas.</td>
<td>• Increase awareness of health and safety.</td>
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<tr>
<td>• Tools, equipment, materials and components</td>
<td>• To develop knowledge and skills to enable the achievement of a high quality finish in practical work.</td>
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<tr>
<td>(including CAD/CAM)</td>
<td>• Development of marking out techniques, accuracy.</td>
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<tr>
<td>• Understanding Materials and components</td>
<td>• Explanation of tools, materials and processes.</td>
</tr>
<tr>
<td>• Apply their knowledge and understanding of a range of materials, ingredients and technologies to design and make their products.</td>
<td>• The use of quality control and quality assurance methods used throughout the project.</td>
</tr>
<tr>
<td>• Know how to use materials, smart materials, technology and aesthetic qualities to design and make products of worth.</td>
<td>• Produce a high quality and accurate product.</td>
</tr>
<tr>
<td>• Exploring and experimenting with ideas, materials, technologies and techniques.</td>
<td></td>
</tr>
<tr>
<td>• How to use materials, smart materials, technology and aesthetic qualities to design and make products of worth.</td>
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</table>

Understanding Materials and components

Planning

• Plan and organise activities and then shape, form, mix, assemble and finish materials, components or ingredients. |
• Solve technical problems. |
• How to prepare and assemble components to achieve functional results. |

Evaluation

• Reflect critically when evaluating and modifying their ideas and proposals to improve products throughout their development and manufacture. |
• Aesthetic, technical, constructional and relevant wider issues that may influence designing, selection of materials, making and product development. |

Communication

• Use ICT as appropriate for image capture and generation; data acquisition, capture and handling; controlling; and product realisation. |

• Present information in a form that suits its purpose, using appropriate media. |
• Develop research techniques and the selection of relevant information. |
• Able to represent designs in the form of accurate and recognised drawing forms (quality of drawings). |
• Students will be asked to produce photographic evidence of their manufacture.
## Methods of Assessment (How and When)

Assessment is an essential part of teaching and learning in all subjects. It can take many forms and be used for a range of purposes. Use of Assessment of learning (summative assessment) to judge students' performance against national standards (level descriptions), at the end of a unit of work. Assessment for learning (formative assessment) involves using assessment in the classroom to raise students' achievement. It is based on the idea that students will improve most if they understand the aim of their learning, where they are in relation to this aim and how they can achieve the aim.

Learning and undertaking activities in design and technology contribute to achievement of the curriculum aims for all young people to become:
- Successful learners who enjoy learning, make progress and achieve.
- Confident individuals who are able to live safe, healthy and fulfilling lives.
- Responsible citizens who make a positive contribution to society.

### Key characteristics of assessment for learning are:
- Using effective questioning techniques.
- Using marking and feedback strategies.
- Sharing learning goals.
- Peer and self assessment.

### Key characteristics of assessment of learning are:
- To judge students' performance against national standards.
- Measuring what has been learned in formal assessment.
- Emphasis is more on helping pupils learn.

### Good assessment:
- Helps develop successful learners.
- Recognises strengths and areas for development and clearly identifies ways for learners to progress.
- Is based around pupils’ needs and leads to improved attainment and progress.
- Encourages pupils to take a central role in their own assessment.
- Is essential in creating personalised learning.
- Helps teachers to be flexible enough to recognise learning as it happens.
- Results in decisions and actions from both day-to-day interactions with pupils and through taking a periodic overview of progress.

### Assessment needs to:
- Value and include a wide range of attitudes, dispositions and skills, as well as achievement in subjects.
- Draw on a broad range of evidence, including beyond the school.
- Involve those that know the learner best – including parents, peers and members of the wider community.
Performance Criteria (National Curriculum Level Related)

**Level 4**
Pupils generate ideas by collecting and using information. They take users’ views about aesthetic and technical issues into account as they respond to briefs. They communicate alternative ideas using words, labelled sketches and models, showing that they are aware of constraints. They apply their knowledge and understanding of materials, ingredients and components, and work with them with some accuracy, paying attention to quality of finish and to function. They use some ideas from others’ designing to inform their own work. They produce step-by-step plans and then select and work with a range of tools and equipment. They identify what is working well and what could be improved to overcome technical problems. They reflect on their designs as they develop, recognising the significance of knowledge and previous experience.

**Level 5**
Pupils develop ideas by drawing on and using various sources of information. They clarify their ideas through discussion, drawing and modelling, showing understanding of aesthetic and economic dimensions. They respond to briefs showing understanding of how culture and society are reflected in familiar products when developing and communicating their own ideas. They show that they are aware of constraints as they apply knowledge and understanding of materials, ingredients and techniques. They use understanding of others’ designing as they develop their work. They work from their own detailed plans, modifying them where appropriate. They work with a range of tools, materials, ingredients, equipment, components and processes with some precision. They check their work as it develops, solve technical problems and show some evidence of creativity as they modify their approach in the light of progress. They test and evaluate their products, showing that they understand the situations in which the products will function.

**Level 6**
Pupils draw on and use a range of sources of information, and show that they understand the form and function of familiar products as they develop and model ideas. They respond creatively to briefs, exploring and testing their design thinking. They develop detailed criteria for their products and use these to explore proposals. They apply their knowledge and understanding by responding to several aspects of the problem. They recognise the significance of others’ designing and modify their approaches accordingly. They produce plans that outline alternative methods of making progress. They work with a range of tools, materials, ingredients, equipment, components and processes, showing that they understand their characteristics. They check their work as it develops and solve technical problems by modifying their approach in the light of progress. They evaluate how effectively they have used information sources, using the results of their research to inform their judgements when developing products. They evaluate their products as they are being used, and identify ways of improving them.

**Level 7**
Pupils use a wide range of appropriate sources of information when developing and modelling ideas. They investigate form, function and production processes as they respond creatively to briefs. They apply their knowledge and understanding, recognising the different needs of a range of users, and search for trends and patterns in existing solutions as they develop fully realistic products. They use their understanding of others’ designing to inform their own as they communicate creative ideas. They produce plans that predict the time needed to carry out the main stages of making products. They work with a range of tools, materials, ingredients, equipment, components and processes, taking full account of their characteristics. They adapt their methods of manufacture to changing circumstances as they solve technical problems, providing a sound explanation for any change from the design proposal. They select appropriate techniques to evaluate how their products would perform when used and modify their products in the light of this evaluation to improve their performance.

**Level 8**
Pupils use a range of strategies to fully develop and model appropriate ideas, responding to information they have identified. They identify conflicting demands on a product and respond creatively to briefs, suggesting ways forward and explaining how their ideas address these demands. When applying knowledge they make decisions on materials, ingredients and techniques based on their understanding of physical properties and working characteristics. They use their understanding of others’ designing by reinterpreting and applying learning in new contexts. They organise their work so that they can carry out processes accurately and consistently, and use tools, equipment, materials, ingredients and components with precision. They use accurate testing to inform their judgements when solving technical problems. They identify a broad range of criteria for evaluating their products, clearly relating their findings to environmental, ethical, and social and cultural dimensions.

**Exceptional Performance**
Pupils seek out information to help their design thinking. They recognise how products contribute to lifestyle and choices of a variety of client groups as they develop and model ideas in an innovative way. Responding creatively to briefs, they are discriminating in their selection and use of information sources to support their work. They interpret and apply knowledge and understanding creatively in new design contexts and communicate ideas in new or unexpected ways. They use understanding of others’ designing in innovative ways. They work with tools, equipment, materials, ingredients and components to a high degree of precision. They make products that are reliable and robust and that fully meet the quality requirements given in the design proposal. They reflect critically and effectively throughout designing and making processes.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic/area of study</th>
<th>Skills/knowledge acquired (including curriculum links)</th>
<th>NC PoS links</th>
<th>Activities (extension/differentiation)</th>
<th>Resources/risks</th>
</tr>
</thead>
</table>
| 1    | • Introduction to the Project (aims and objectives of the project in relation to the Nation Curriculum Levels).   
      • Understanding of Design Briefs, Specifications and Mind Mapping techniques.   
      • Development a Design Brief and Specification.   
      • Researching a range of topics in relation to the project.  
      • Understand the project and how it will evolve over the course.  
      • Knowledge and understanding of Design Briefs, Specifications and Mind Maps.  
      • Developing research skills.  
      • Knowledge and understanding of theory work.  
      Links to literacy – Knowledge and understanding of technical terms used within design.  
      Links to Citizenship – Designing for a user and development of a project to solve a problem and meet a need.  
      • Students will complete a Mind Map to determine possible solutions or aspects of the product. Research will be carried out on existing buildings and different examples of modern architecture.  
      • Students will complete a detailed Specification and include all the relevant main aspects of their design.  
      **Homework**  
      Students will complete a Mood Board of different examples of buildings that they could use for inspiration.  | 1.1a, c 2b, d 4b 4e  | • Students will complete a Mind Map to determine possible solutions or aspects of the product. Research will be carried out on existing buildings and different examples of modern architecture.  
      • Students will complete a detailed Specification and include all the relevant main aspects of their design.  
      **Homework**  
      Students will complete a Mood Board of different examples of buildings that they could use for inspiration.  | • Project Example.  
      • Graphic Materials: Paper, pencils, colouring pencils, rulers, project booklets.  
      • ICT computer room. |
| 2    | • Introduction to Generation of Design Ideas (sketching techniques and annotating ideas).   
      • Demonstration of sketching and rendering techniques.   
      • Students are asked to design the outside and inside of the building, the floor plan and landscape.   
      • Students are required to design and model their own modern style building using architectural methods of drawing and manufacture.  
      • Able to generate ideas, develop project proposals and evaluate them.  
      • Improvement of design idea generation (looking at sketching techniques and annotating ideas).  
      • Development of presentation of work, evaluation skills and technical terms.  
      • Students must consider the overall appearance of the building and the materials that could be used.  
      • Students should develop at least two of their design ideas into a final proposal. Students must remember to evaluate the final design, use 3rd views and state the changes that have been made.  
      • Students will draw their designs in both One Point Perspective and Two point Perspective.  | 1.2a 1.3a, b, c 3e 4b  | • Students will generate a range of neatly presented design ideas. Students should ensure that that include labels, colour and evaluations.  
      • Students will be required to design the outside and inside of the building. They must consider the materials that would be used and the layout.  
      **Homework**  
      Students will complete a Product Analysis of at least 2 different buildings that interest them.  | • Graphic Materials: Paper, pencils, colouring pencils, rulers. |
| 3    | • Develop a range of design ideas into a final design.   
      • Students are asked to design the outside and inside of the building, the floor plan and landscape.   
      • Students will be introduced to One Point Perspective and Two Point Perspective.  
      • Able to generate ideas, develop project proposals and evaluate them. Pupils will develop their project proposals and sketching techniques (annotations).  
      • Able to use a range of sketching techniques to explain design proposals.  | 1.3c 3k 4c  | • Students should develop at least two of their design ideas into a final proposal. Students must remember to evaluate the final design, use 3rd views and state the changes that have been made.  
      • Students will draw their designs in both One Point Perspective and Two point Perspective.  | • Graphic Materials: Paper, pencils, colouring pencils, rulers. |
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</table>
| 4 | **Begin manufacture of final project proposal.**  
   - Greater knowledge and understanding of the Health & Safety rules/behaviour within the workshop.  
   - Pupils will be able to mark out and cut / model / sand material accurately.  
   - Use a range of materials to accurately model a design. |
|   | **Health and Safety issues within a workshop (Rules, behaviour, safe working practice).**  
   - Demonstrations and Health and Safety issues regarding machinery & tools / equipment (Craft Knife).  
   - Demonstrations on marking out, accuracy and use of tools.  
   - Students will use a range of materials to create their architectural model. |
| 1.3c | **Students will be shown how to effectively create furniture and structural elements.**  
   - Students will be shown how to print images and add them to the design.  
   - Students will use a range of modelling techniques to produce their design.  
   **Homework:**  
   Students will research Anthropometrics and Ergonomics. They should state how these would impact their design. |
| 2g, 3k | **Tools and Machinery:**  
   - Coping saw  
   - Craft Knife  
   - Files  
   - Sand paper  
   - Measuring Equipment  
   **Materials:**  
   - Paper  
   - Card  
   - Foam Board  
   - Glue  
   - Blue Foam |
| 2a, b, c, 4f |   |
| 2k |   |

| 5 | **Continue manufacture of product.**  
   - Pupils will be able to mark out and cut / model / sand material accurately.  
   - Use a range of materials to accurately model a design.  
   - Students should accurately measure and mark out their design onto the materials provided. |
|   | **Accurately cut, model and sand material into the desired sizes and shapes.**  
   - Join a range of materials together using a range of different techniques.  
   - Knowledge and understanding of a range of finishes that could be applied to the completed practical work. |
| 2g, 3k, 4c, 4f | **Students will use a range of modelling techniques to produce their design. Use of the laser.**  
   - Students should produce photographic evidence of each stage of the manufacture.  
   **Homework:**  
   Students will produce a final design including a range of sketches of the interior design, landscape and individual aspects of the building. |
| 2a, b, c, 4f |   |
| 2k |   |

| 6 | **Complete manufacture of product.**  
   - Pupils will be able to mark out and cut / model / sand material accurately.  
   - Use a range of materials to accurately model a design. |
|   | **Accurately cut, model and sand material into the desired sizes and shapes.**  
   - Join a range of materials together using a range of different techniques.  
   - Students will be introduced to architectural drawings and elevation drawing. |
| 2g, 3k, 4f | **Students will use a range of modelling techniques to produce their design.**  
   - Students should produce photographic evidence of each stage of the manufacture.  
   - Students will be introduced to adding finishing touches (such as adding trees, grass, paths) |
| 2a, b, c, 4f |   |
| 2k |   |

| 7 | **Produce a detailed plan of making. Include stages undertaken, tools and equipment used, health and safety and quality control.**  
   - Pupils will be able to assess and evaluate the work of others (peer assessment). |
|   | **Produce a detailed sequence of main making activities.**  
   - Evaluate the work of others and assess their own work against an original design and Specification.  
   - Understand peer assessment.  
   - Completion of all project work. |
| 2e, h | **Students will complete accurate architectural drawings and elevations of their final design.**  
   - Students will complete a detailed Plan of Making.  
   - Students should evaluate their work and that of other students. |
|   | **Graphic Materials:**  
   - Paper, pencils, colouring pencils, rulers, project booklets. |
### Workshop Health and Safety: General Health and Safety

Electric shock from machinery, loose clothing not worn, jewellery removed, eye protection (goggles) worn when working, ventilation, extraction, equipment properly adjusted / used when working and emergency stop locations in the workshop. 

#### Workshop rules and behaviour (safe working practice).
- Aprons and Goggles must be worn at all times when using machinery.
- Loose hair tied back and jewellery taken off. Shirt / pullover sleeves pulled up.
- Know where the Emergency stops are - locations within the room.
- Workshops should be kept clean and tidy. Scrap material should be put in bins.
- Never run in a workshop. Stools under desks if practical work is being undertaken.
- Never blow dust – sweep into a bin.
- Excess tools and materials put away after use. Carrying tools the correct way.
- Main risk when people do not know or understand how to use something correctly – if not sure always ask.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ALL</th>
<th>Adhesives</th>
<th>RISK LEVEL</th>
<th>LOW</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Hazards</td>
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<td></td>
<td></td>
<td>• Adhesives in contact with the eyes can cause permanent injury.</td>
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<td></td>
<td></td>
<td>• Adhesives in contact with the skin can cause irritation. Hot adhesives can cause burns.</td>
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<td></td>
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<td>• Inhalation of solvents, fumes and vapours can present a hazard and can cause respiratory sensitization. Adhesives containers can spill or leak. Adhesives vapours can be highly flammable.</td>
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<td>Risk Control Measures</td>
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<td></td>
<td>• Adhesives should be used in accordance with the manufacturer’s instructions.</td>
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<td></td>
<td></td>
<td>• Sufficient ventilation should be provided, in accordance with the manufacturers recommendations.</td>
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<td>• Local exhaust ventilation should be provided if required.</td>
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<thead>
<tr>
<th>LOCATION</th>
<th>IC3 &amp; D7</th>
<th>Laser Cutters</th>
<th>RISK LEVEL</th>
<th>LOW</th>
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<tr>
<td></td>
<td></td>
<td>Hazards</td>
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<tr>
<td></td>
<td></td>
<td>• The equipment can present an electric shock hazard.</td>
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<td>• Leads could be tripped over.</td>
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<td></td>
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<td>• Fumes from materials being cut might be harmful.</td>
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<td>• Looking into the light source when working on reflective materials might be harmful.</td>
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<td>• Moving parts might present a tripping hazard.</td>
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<td>Risk Control Measures</td>
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<thead>
<tr>
<th>LOCATION</th>
<th>ALL</th>
<th>Graphics Tools</th>
<th>RISK LEVEL</th>
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<td>Hazards</td>
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<td></td>
<td></td>
<td>• Sharpe blades on cutting tools and craft knives can cause cuts.</td>
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<td>Risk Control Measures</td>
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<td>• Unsere all tools are collected at the end of a lesson.</td>
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<td>• Blades should only be extended to a minimum length required.</td>
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<td>• When not in use blades should be covered or retracted.</td>
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<tr>
<th>LOCATION</th>
<th>ALL</th>
<th>Hot Melt Glue Gun</th>
<th>RISK LEVEL</th>
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<td></td>
<td>Hazards</td>
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<tr>
<td></td>
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<td>• Electric Shock from tools.</td>
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<td>• Leads could cause a trip hazard.</td>
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<td>• Hot glue nozzle tips can cause burns.</td>
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<td>• Splashes of glue can cause burns.</td>
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<td></td>
<td>Risk Control Measures</td>
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<td></td>
<td>• Supply leads for glue guns should be heat resistant. Care should be taken to ensure that trailing leads do not become entangled with the operator, others in the vicinity or the hot glue nozzle.</td>
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<td>• Suitable eye protection should be worn.</td>
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### Portable Drills

**Hazards**
- Loose hair and clothing which can become entangled in moving parts of the drill should be tied back. Electric shock from tools.
- Be aware of chuck keys, broken drill bits, swarf and work pieces that could be violently ejected.
- Be aware of sharp edges on drill bits, work pieces and swarf which can cause cuts.
- Leads could cause a trip hazard.
- Drill jamming could produce a torque reaction.
- Dust produced could be inhaled and other particles could be ejected.

**Risk Control Measures**
- Trailing leads should not become entangled with the operator or others in the vicinity or the drill.
- Long hair and loose clothing should be tied back and jewellery taken off.
- Suitable eye protection should be worn.
- The chuck key should only be used to tighten and loose the chuck, and otherwise kept safely away from the drill.
- Training should be given on how to remove burrs from material.

### Hand Tools

**Hazards**
- Sharp tools, falling tools, tools breaking or coming apart in use, slipping tools (which can occur when pressure is applied to them) can all cause injury.

**Risk Control Measures**
- Hand tools should be stored at a suitable height for access. Hand tools should not be left projecting from a bench.
- Faces of hammer heads and hammer shafts should be frequently inspected.
- Edged tools should be kept sharp and in good condition. Sharp or pointed tools should be handled with care (with cutting edges protected or pointing downwards).
- Bench hooks should be maintained in good condition.
- Tools should not be carried in pockets or under belts.

### Disk Sanding / Belt Sanding Machines

**General Health and Safety**
- Work can become jammed in the machine.
- Hands or clothing can become jammed in the sanding machine.
- Wood dust can be inhaled.
- Inadvertently starting the machine.
- The belt can break and lash out.
- Hands can come in to contact with the abrasive surface.

**Risk Control Measures**
- The machine has a means of isolation, emergency stop.
- Fixed or locked guards to enclose the drive mechanism.
- Belt should be narrower than the belt support plate and pulleys, to protect the user from the belt edges. Belt should be set in the correct direction of rotation.
- The standing table on the vertical belt sander should be of rigid metal construction. The gap between the table and the belt should be sufficient to clear the debris but small enough to ensure sufficient support for the timber.
- For angled sanding it should only be possible to tilt downwards away from the belt to avoid jamming between the table and the belt.
- Eye protection (goggles) should be worn when the machine is in operation. Long hair should be protected from entanglement.
- Abrasive belts should be examined before use, torn belts should be discarded. Fingers should be kept 40mm away from the sanding belt.