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**Knowledge Rich Curriculum Plan**

Year 9 – Design

Unit: Workshop skills



| **Year 9****Design**  | **The purpose of our curriculum is to inspire our students to think creatively about solving problems, rather than dwelling on solutions. They will experience a wide range of technologies that will give them the knowledge and skills, to make better decisions to design and make products that will improve people’s lives. Regardless of ability or endpoint, our aim is to equip our students with the knowledge of ever developing technologies that can be applied to their chosen pathways both in and outside of the Academy.** |  |  |  |
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| **Lesson/Learning Sequence**  | **Intended Knowledge:***Students will know that…* | **Tiered Vocabulary**  | **Prior Knowledge:***In order to know this students, need to already know that…* | **Assessment**  |
| **Lesson:** **Finger joint** | * Students will know how a finger joint is used to join together timber
* Students will know how different types of joining methods are used
* Students will know how specific tools and equipment are used
 | Finger joint – A simple workshop method which used a checked style to join together two pieces of work.Tri square – Woodworking tool used for marking and checking 90-degree angles  Steel Rule – A rule manufactured from steel featuring metric and imperial measurements  | * ***Students need to already know what a right angle is.***
* ***Students need to already know what is meant by the term marking out: The application of scribing a line along a straight edge***
* ***Students need to already know how to convert cm into mm.***
 | What is the purpose of joining together two pieces of material?How secure could this particular joining method be?What are the benefits or advantages to this type of wood joint? |
| **Lesson:****Dovetail joint** | * Students will know how a dovetail joint is used to join together timber
* Students will know how to compare the differences and similarities of different wood joints
* Students will know how more complex wood joints can aid a products manufacture
 | Dovetail joint – A complicated wood joint with some similarities to a finger joint. A dovetail uses angled cuttings to help create a stronger, firmer join.Accuracy – Quality of state of being correct or precise Precision – the quality, condition, or fact of being exact and accurate. | * ***Students need to already know the term accuracy***
* ***Students need to already know how to use basic workshop tools***
 | How can the use of this wood joint aid a product?How can we ensure accuracy is being used during this wood joint? |
| **Lesson:****Half Lap Joint** | * Students will know how a half lap joint is used to join together timber
* Students will know how chisels can be used as a specialist tool
* Students will know how angles products can be constructed
 | Half lap joint – A 90-degree angle joint mainly used for corners or stud wallsChisel - a long-bladed hand tool with a bevelled cutting edge and a handle which is struck with a hammer or mallet, used to cut or shape wood, stone, or metal. | * ***Students need to already know the tools used for cutting timber***
* ***Students need to already know how a 90 degree angle is used***
 | How can the use of this wood joint aid a product?What are the risks of using tools such as chisels?How can this tool be used safely? |
| **Lesson:****Cross halving joint** | * Students will know how a cross halving joint is used to joint together timber
* Students will know how the term quality control is used in the manufacture of wooden joints
* Students will know how the combination of different workshop tools can help aid a wooden joint
 | Cross halving joint – A halved joint is a woodworking joint in which the two members are joined by removing material from each at the point of intersection so that they overlap.Tenon Saw – A small saw with a strong back for precise work | * ***Students will need to know the term quality and what it refers too***
* ***Students will need to know the use of basic workshop tools***
 | How can the use of this wood joint aid a product?How can we ensure the quality of the wooden joint?Why is QA used during the manufacture of the wooden joint? |
| **Lesson:****Bridle joint** | * Students will know how a bridle joint is used to join together timber
* Students will know how combining different aspects of wood joints can help create stronger joints
* Students will know how to use the disc sander to create a higher quality finish
 | Bridle joint – A bridle joint is a woodworking joint, similar to a mortise and tenon, in that a tenon is cut on the end of one member and a mortise is cut into the other to accept it.Disc Sander – a power tool used to smooth surfaces by abrasion with sandpaper. | * ***Students will need to know how sandpaper can be used to help ensure quality***
* ***Students will need to know how accuracy can be applied***
 | How can the use of this wood joint aid a product?What health and safety rules would we use when using the disc sander? |
| **Lesson:****Mortise and Tenon** | * Students will know how a Mortise and Tenon joint is used to join together timber
* Students will know the importance of marking out timber
* Students will know how pillar drills can be used to help aid the manufacture of wood joint
 | Accuracy – Quality of state of being correct or precise Pillar drill: Pillar drills (also referred to as drill press machines) are versatile machines that can be used on a wide range of materials where single hole drilling is required.Mortise and Tenon joint: A mortise and tenon is a type of joint that is made up of two parts. The tenon portion of the joint works as a peg, and the mortis is the hole or slot into which the tenon is inserted. | * ***Students will know how to apply quality control to their wooden joints***
* ***Students will know the basics of Pillar Drill***
 | How can the use of this wood joint aid a product?How does accuracy play a part in the wood joint? |
| **Lesson:****Dowel joint** | * Students will know how a Dowel Joint is used to join together timber
* Students will know how the stock form called dowel is used to help construct a wooden joint
* Students will know how stock forms of materials are bought and used
 | Dowel joint: a wooden joint that is partially or totally held in place by the addition of small round wooden rods called dowels.Dowel: A dowel is a cylindrical rod, usually made of wood, plastic, or metal. In its original manufactured form, a dowel is called a dowel rod. | * ***Students need to already know basic workshop safety***
* ***Students need to already know how to use specialist tools such as Pillar Drill***
 | How can the use of this wood joint aid a product?How does the use of the pillar drill help this wood joint? |