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| **D&T Y11 Bridging Booklet 2020** |
| All Saints Catholic High School |
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| This booklet contains a selection of key information and tasks to be completed to enable you to progress into A-Level Product Design. |
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| **Mr P.Greenwood** |
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**Design & Technology – Key vocabulary 1**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Learn the spellings of these words and terms commonly used in Design and Technology   |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |  1. Brief 2. Research 3. Analysis 4. Joining 5. Evaluate | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Look up and write down the definitions of these words, with respect to their use in Design and Technology   |  |  | | --- | --- | | Design brief |  | | Analysis |  | | Evaluate |  | | | |
|  | Learn the spellings of these words and terms commonly used in Design and Technology   |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |  1. Manufacture 2. Modelling 3. Component 4. Properties 5. Processes | | |
|  | Look up and write down the definitions of these words, with respect to their use in Design and Technology   |  |  | | --- | --- | | Manufacture |  | | Modelling |  | | Component |  | | | |
|  | Learn the spellings of these words and terms commonly used in Design and Technology   |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |  1. Aesthetics 2. Ergonomics 3. Environment 4. Sustainability 5. Specification | | |
|  | Look up and write down the definitions of these words, with respect to their use in Design and Technology   |  |  | | --- | --- | | Aesthetics |  | | Ergonomics |  | | Specification |  | | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Key vocabulary 2**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Learn the spellings of these words and terms commonly used in Design and Technology   |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |  1. Annotation 2. Adhesive 3. Development 4. System 5. Polymer | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Look up and write down the definitions of these words, with respect to their use in Design and Technology   |  |  | | --- | --- | | Annotation |  | | Development |  | | Adhesive |  | | | |
|  | Learn the spellings of these words and terms commonly used in Design and Technology   |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |  1. Perspective 2. Mechanical 3. Production 4. Structure 5. Communication | | |
|  | Look up and write down the definitions of these words, with respect to their use in Design and Technology   |  |  | | --- | --- | | Production |  | | Mechanical |  | | Communication |  | | | |
|  | Learn the spellings of these words and terms commonly used in Design and Technology   |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |  1. Anthropometrics 2. Thermosetting 3. Convention 4. Obsolescence 5. Engineered | | |
|  | Look up and write down the definitions of these words, with respect to their use in Design and Technology   |  |  | | --- | --- | | Anthropometrics |  | | Obsolescence |  | | Engineered |  | | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Key vocabulary 3**

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| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | The following phrases are frequently used in Design and Technology. Explain their meaning.   |  |  | | --- | --- | | Aesthetically pleasing |  | | Composite material |  | | Quality control |  | | Standard conventions |  | | System diagram |  | | | |
|  | The following phrases are frequently used in Design and Technology. Explain their meaning.   |  |  | | --- | --- | | Anthropometric data |  | | Sustainable design |  | | Computer numerical control |  | | Quality assurance |  | | Risk assessment |  | | | |
|  | Look up and write down the definitions of these words, with respect to their use in Design and Technology   |  |  | | --- | --- | | Assembly drawing |  | | “Smart Materials” |  | | British standards institute |  | | Planned obsolescence |  | | Commercial viability |  | | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Health and Safety**

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| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Write five health and safety rules that should be followed when you have lessons in Design and Technology.   |  | | --- | | **1** | | **2** | | **3** | | **4** | | **5** | | | |
|  | Explain the importance of following health and safety rules when you have lessons in Design and Technology. | | |
|  | Explain what you should do if you have a minor accident when working in a Design and Technology workshop. | | |
| Explain what you would do if your friend had an accident in the workshop or if the teacher told everybody to stop work | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Hand Tools 1**

|  |  |  |  |  |  |  |  |  |  |  |  |
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| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Name the following tools   |  |  | | --- | --- | | http://www.toolstop.co.uk/components/com_virtuemart/shop_image/product/bd972ee7790b696a2842752e7346a561.jpg |  | | http://images.beatsons.co.uk/images/products/zoom/1353588365-22031800.jpg |  | | [http://t3.gstatic.com/images?q=tbn:ANd9GcQW7NMfjonblkZivXn8Myg6UblGwgyA0uLN5sn_4EeVxhUF2tON:content.artofmanliness.com/uploads/2009/09/Ball-Pein-Hammers.jpg](http://www.google.co.uk/url?sa=i&rct=j&q=hammer&source=images&cd=&cad=rja&uact=8&docid=6Ov6VnRd8aCWQM&tbnid=bGBjngZBMxU7qM:&ved=0CAUQjRw&url=http://www.artofmanliness.com/2009/09/29/how-to-use-a-hammer/&ei=pdDHU52lEKmq0QXK1ICYCw&bvm=bv.71198958,d.d2k&psig=AFQjCNHc7U-q2Y8tXlVS5ZKsjXU1sB43Mw&ust=1405690401752323) |  | | http://cdn.toolstation.com/images/130125-UK/images/library/stock/webbig/87269.jpg |  | | | |
|  | State what each of these tools would be used for   |  |  | | --- | --- | | http://www.toolstop.co.uk/components/com_virtuemart/shop_image/product/bd972ee7790b696a2842752e7346a561.jpg |  | | http://images.beatsons.co.uk/images/products/zoom/1353588365-22031800.jpg |  | | [http://t3.gstatic.com/images?q=tbn:ANd9GcQW7NMfjonblkZivXn8Myg6UblGwgyA0uLN5sn_4EeVxhUF2tON:content.artofmanliness.com/uploads/2009/09/Ball-Pein-Hammers.jpg](http://www.google.co.uk/url?sa=i&rct=j&q=hammer&source=images&cd=&cad=rja&uact=8&docid=6Ov6VnRd8aCWQM&tbnid=bGBjngZBMxU7qM:&ved=0CAUQjRw&url=http://www.artofmanliness.com/2009/09/29/how-to-use-a-hammer/&ei=pdDHU52lEKmq0QXK1ICYCw&bvm=bv.71198958,d.d2k&psig=AFQjCNHc7U-q2Y8tXlVS5ZKsjXU1sB43Mw&ust=1405690401752323) |  | | http://cdn.toolstation.com/images/130125-UK/images/library/stock/webbig/87269.jpg |  | | | |
|  | Use notes and diagrams to explain how to mark a line on a rectangular piece of wood at a right angle to one of the sides  http://openclipart.org/image/2400px/svg_to_png/170649/wood.png | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Hand Tools 2**

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| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Name the following tools   |  |  | | --- | --- | | http://upload.wikimedia.org/wikipedia/commons/0/08/Chisels_(PSF).png |  | | http://cdn.toolstation.com/images/130125-UK/images/library/stock/webbig/83084.jpg |  | | http://www.nextdaydiy.com/images/products/zoom/1291912836-35887800.jpg |  | | http://i21.geccdn.net/site/images/n-picgroup/84946.jpg |  | | | |
|  | State what each of these tools would be used for   |  |  | | --- | --- | | http://upload.wikimedia.org/wikipedia/commons/0/08/Chisels_(PSF).png |  | | http://cdn.toolstation.com/images/130125-UK/images/library/stock/webbig/83084.jpg |  | | http://www.nextdaydiy.com/images/products/zoom/1291912836-35887800.jpg |  | | http://i21.geccdn.net/site/images/n-picgroup/84946.jpg |  | | | |
|  | Use notes and diagrams to explain how a thread is cut on a bar using one of the tools identified above. | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Hand Tools 3**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Name the following tools   |  |  | | --- | --- | | http://www.flinn-garlick-saws.co.uk/acatalog/Parkstone-tenon-saw-copy.jpg |  | | [http://t0.gstatic.com/images?q=tbn:ANd9GcSPxm0b5qLVGmUar5iXkkwmWNYWCc2u-N55820xuEQkHmYDC67G:https://www.cromwell.co.uk/images/product/KEN/597/KEN5976290K_0.jpg](http://www.google.co.uk/url?sa=i&rct=j&q=bench+hook&source=images&cd=&cad=rja&uact=8&docid=Eg6_neYVq_ThcM&tbnid=4nE8lU_h4WhxbM:&ved=0CAUQjRw&url=https://www.cromwell.co.uk/shop/031704/mitre-blocks-bench-hooks&ei=Cc_HU7iQLsXY0QX90ICwCQ&bvm=bv.71198958,d.d2k&psig=AFQjCNEjRZIF04b0cg4pzvGRKm4u0TPQ6Q&ust=1405689981999765) |  | | [http://t3.gstatic.com/images?q=tbn:ANd9GcQOtYXF6XCyxfoj1lxak1T-vj0WYkCp1d1JwwokG6ONofxRjDg0Qg:https://www.cromwell.co.uk/images/product/KEN/539/KEN5392740K_1.jpg](http://www.google.co.uk/url?sa=i&rct=j&q=g+clamp&source=images&cd=&cad=rja&uact=8&docid=M3pBUnDbs2ewlM&tbnid=7kGXu1pqc1RRxM:&ved=0CAUQjRw&url=https://www.cromwell.co.uk/KEN5392740K&ei=Zc_HU7aeNuqr0QXQ5YHICg&bvm=bv.71198958,d.d2k&psig=AFQjCNFybDCWhoanH53o94RuYsiTKPtOAw&ust=1405690078225746) |  | | http://static.axminster.co.uk/media/catalog/product/cache/1/image/9df78eab33525d08d6e5fb8d27136e95/2/2/220040_xl.jpg |  | | | |
|  | State what each of these tools would be used for   |  |  | | --- | --- | | http://www.flinn-garlick-saws.co.uk/acatalog/Parkstone-tenon-saw-copy.jpg |  | | [http://t0.gstatic.com/images?q=tbn:ANd9GcSPxm0b5qLVGmUar5iXkkwmWNYWCc2u-N55820xuEQkHmYDC67G:https://www.cromwell.co.uk/images/product/KEN/597/KEN5976290K_0.jpg](http://www.google.co.uk/url?sa=i&rct=j&q=bench+hook&source=images&cd=&cad=rja&uact=8&docid=Eg6_neYVq_ThcM&tbnid=4nE8lU_h4WhxbM:&ved=0CAUQjRw&url=https://www.cromwell.co.uk/shop/031704/mitre-blocks-bench-hooks&ei=Cc_HU7iQLsXY0QX90ICwCQ&bvm=bv.71198958,d.d2k&psig=AFQjCNEjRZIF04b0cg4pzvGRKm4u0TPQ6Q&ust=1405689981999765) |  | | [http://t3.gstatic.com/images?q=tbn:ANd9GcQOtYXF6XCyxfoj1lxak1T-vj0WYkCp1d1JwwokG6ONofxRjDg0Qg:https://www.cromwell.co.uk/images/product/KEN/539/KEN5392740K_1.jpg](http://www.google.co.uk/url?sa=i&rct=j&q=g+clamp&source=images&cd=&cad=rja&uact=8&docid=M3pBUnDbs2ewlM&tbnid=7kGXu1pqc1RRxM:&ved=0CAUQjRw&url=https://www.cromwell.co.uk/KEN5392740K&ei=Zc_HU7aeNuqr0QXQ5YHICg&bvm=bv.71198958,d.d2k&psig=AFQjCNFybDCWhoanH53o94RuYsiTKPtOAw&ust=1405690078225746) |  | | http://static.axminster.co.uk/media/catalog/product/cache/1/image/9df78eab33525d08d6e5fb8d27136e95/2/2/220040_xl.jpg |  | | | |
|  | Use notes and diagrams to explain how to make a comb or finger joint in wood using some of the tools identified in the table above. | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Machine tools 1**

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| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Name the following machines often found in school workshops   |  |  |  | | --- | --- | --- | | http://static.axminster.co.uk/media/catalog/product/cache/1/image/9df78eab33525d08d6e5fb8d27136e95/5/0/501210_xl.jpg | http://www.daltonsmachines.com/uploads/images/osb/L2-FLOOR.JPG | http://wood.baileighindustrial.com/media/catalog/product/cache/4/base/9df78eab33525d08d6e5fb8d27136e95/w/b/wbs14-wood-band-saw.png | |  |  |  | | | |
|  | Explain the use of these machines, giving examples of tasks they would be used to carry out   |  |  |  | | --- | --- | --- | | http://static.axminster.co.uk/media/catalog/product/cache/1/image/9df78eab33525d08d6e5fb8d27136e95/5/0/501210_xl.jpg | http://www.daltonsmachines.com/uploads/images/osb/L2-FLOOR.JPG | http://wood.baileighindustrial.com/media/catalog/product/cache/4/base/9df78eab33525d08d6e5fb8d27136e95/w/b/wbs14-wood-band-saw.png | |  |  |  | | | |
|  | Use notes and diagrams to explain how you would mark out the position and accurately drill a hole in a piece of wood. | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Machine tools 2**

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| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Name the following machines often found in school workshops   |  |  |  | | --- | --- | --- | | http://toolco.co.uk/media/1022GB.jpg | http://www.thegardeningwebsite.co.uk/images/screwfix_ae235.jpg | http://www.westwirralworks.co.uk/Images/Resources/machines/imgvacformer.jpg | |  |  |  | | | |
|  | Explain the use of these machines, giving examples of tasks they would be used to carry out   |  |  |  | | --- | --- | --- | | http://toolco.co.uk/media/1022GB.jpg | http://www.thegardeningwebsite.co.uk/images/screwfix_ae235.jpg | http://www.westwirralworks.co.uk/Images/Resources/machines/imgvacformer.jpg | |  |  |  | | | |
|  | Use notes and diagrams to explain how you would form a sheet of HIPs using one of the machines above. | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Machine tools 3**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Name the following machines often found in school workshops   |  |  |  | | --- | --- | --- | | http://t0.gstatic.com/images?q=tbn:ANd9GcTjpviHZKY65pKp04B5ZH4CpO0aiV8hDlSfglgu2S4DWeN0Gre7 | http://t2.gstatic.com/images?q=tbn:ANd9GcQORNBDSNwAnKNWjifPLjSR1k1iPOGEZJDV_Ql3r4sFTW7afHd6:www.ectinschools.org/images/manufacturing/techniques32.gif | http://t3.gstatic.com/images?q=tbn:ANd9GcRFfroo8G7VObFOD-77RJVrEFFXZOjexory8-Llw7quW0e7sGRMeQ:blogs.gre.ac.uk/architecture/files/2010/07/lasercutter.jpg | |  |  |  | | | |
|  | Explain the use of these machines, giving examples of tasks they would be used to carry out   |  |  |  | | --- | --- | --- | | http://t0.gstatic.com/images?q=tbn:ANd9GcTjpviHZKY65pKp04B5ZH4CpO0aiV8hDlSfglgu2S4DWeN0Gre7 | http://t2.gstatic.com/images?q=tbn:ANd9GcQORNBDSNwAnKNWjifPLjSR1k1iPOGEZJDV_Ql3r4sFTW7afHd6:www.ectinschools.org/images/manufacturing/techniques32.gif | http://t3.gstatic.com/images?q=tbn:ANd9GcRFfroo8G7VObFOD-77RJVrEFFXZOjexory8-Llw7quW0e7sGRMeQ:blogs.gre.ac.uk/architecture/files/2010/07/lasercutter.jpg | |  |  |  | | | |
|  | Research milling machines. Explain what they do and what they might be used for. Give examples of products that might be made with a milling machine. | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Softwoods**

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| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. From what type of trees do we obtain softwoods?  Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. Describe what these type of trees are usually like | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. Name three examples of softwoods  |  | | --- | |  | |  | |  | | | |
|  | 1. Give examples of typical uses of three different types of softwood  |  |  | | --- | --- | | Name | Use | | Name | Use | | Name | Use | | | |
|  | 1. Explain the properties and characteristics usually associated with softwoods | | |
|  | 1. Wood is available in different forms: rough sawn and ready-machined, which is available as PBS or PAR.   Explain the meaning of PBS and PAR. | | |
|  | 1. Wood is available in standard sizes and shapes. State typical sizes for the following shapes.  |  |  | | --- | --- | | Plank |  | | Board |  | | Squares |  | | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Polymers**

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| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. a) What natural resources are most polymers made from?  Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  b) What other resources are sometimes used to make polymers?  Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. What are the two main types of polymers (plastics)? Answers: i) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. Name three common types of plastics. Answers: i) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  iii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | 1. What is the difference between the two types? | | |
|  | 1. Describe one advantage of using plastics in the manufacture of products. | | |
|  | 1. Describe one impact on the environment that has resulted from the increased use of plastics. | | |
|  | 1. What impact has the use of plastics had on the development of new products? | | |
|  | 1. What impact has the use of plastics had on the consumer? | | |
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**Design & Technology – Ferrous Metals**

|  |  |  |  |
| --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. a) What is a ferrous metal? | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. Name three types of ferrous metals Answers: i) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  iii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | 1. What is the material added to iron to make steel? | | |
|  | 1. Describe the effect that the added material has on the properties of the steel. | | |
|  | 1. State some typical uses for the different types of metal you identified in question 2.  |  |  | | --- | --- | | **Metal** | **Typical uses** | |  |  | |  |  | |  |  | | | |
|  | 1. Make a list of products made from steel and for each product explain the material properties that you think make it suitable for that product.  |  |  | | --- | --- | | **Product** | **Properties** | |  |  | |  |  | |  |  | |  |  | |  |  | | | |
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**Design & Technology – Non-ferrous Metals**

|  |  |  |  |
| --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. a) What is a non-ferrous metal? | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. Name three types of non-ferrous metals Answers: i) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  iii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | 1. In general, non-ferrous metals have better ***corrosion resistance*** than ferrous metals. Explain what this means. | | |
|  | 1. State some typical uses for the different types of metal you identified in question 2.  |  |  | | --- | --- | | **Metal** | **Typical uses** | |  |  | |  |  | |  |  | | | |
|  | 1. Make a list of products made from non-ferrous metals and for each product explain the material properties that you think make it suitable for that product.  |  |  | | --- | --- | | **Product** | **Properties** | |  |  | |  |  | |  |  | |  |  | |  |  | | | |
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**Design & Technology – Alloys**

|  |  |  |  |
| --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. a) What is an alloy? | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. Name three types of alloy. Answers: i) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  iii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | 1. What are the advantages of using alloys instead of pure metals? | | |
|  | 1. Complete this table of information about alloys.  |  |  |  |  | | --- | --- | --- | --- | | **Name** | **Properties** | **Composition** | **Uses** | | Brass |  |  |  | | Bronze |  |  |  | | Solder |  |  |  | | | |
|  | 1. Identify and sketch two metal objects that are made from an alloy. List the benefits of using an alloy in each of your chosen objects. | | |
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**Design & Technology – Soldering**

Complete this page with details about the process of soldering electronic components. Add any labels or information that you think should be included.

|  |
| --- |
| Draw the soldering iron in the correct position for soldering the component in place.  **To be successful you must:**  Component  **Example of good and bad soldered joints**  **Health & Safety**         **Soldering Stages** |

**Design & Technology – Design Briefs**

A **design brief** is an essential part of the design process. It outlines the intention of the project, the intended outcome and identifies the potential user of the product to be developed.

On the back of the sheet write design briefs based on the project titles and the information provided for each one. Make sure to use the following:

**Example**

**Task  
Write a design brief** for a project that will involve designing and making a device that will help prevent the theft of bicycles from public places.

**Design brief***I have been asked to design, develop and make device that can be used to help prevent the theft of bicycles from public places. The product must be easy to use, small and portable so that cyclists can easily carry it with them when riding their bicycles. It must also be lightweight but made with materials that are strong so that it is not easy to remove. The intended market for this product is any cyclist who uses a bicycle, perhaps to commute to work, and needs to lock their bicycle in a public place.*

Suggestions for VCOP are given below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Openers** | | **Easy vocabulary** | | |
| I have been asked.  I will be.  It is required.  I am going to.  It is my understanding that. | My design will be.  My concept must.  In this project I will.  My design shall.  I believe that.  I think. | Brief  project  thought  check list  important  rules  essential  desired | must have  must include  should have  detailed  design  want  designing  inspired by | |
| **Connectives** | | **Hard vocabulary** | | |
| To begin with  next  in conclusion  firstly  finally  above all  again  also  similarly  thus  in addition  since  because | of  so that  consequently  accordingly  as a result  previously  although  even if  initially  from now on  often  hence | Requirements  Necessary  Vital  Importance  design cycle  concept | Considerations  Analysis  Inspirations  Favourable  Preferred  Irrelevant | |
| **Punctuation**  **! ? ‘ …. ( ) - : ; , “ ” .** | | | | |
| 1. **Write a design brief** for a project that can be used to support smart phones and tablets in a car, either by the driver, e.g. for satnav, or for passengers. | | | |
| 1. **Write a design brief** for developing a product for a company who manufacture torches and have decided to expand their product range. They already manufacture a range of torches and want you to design a holder that will enable one of them to be clipped easily on and off a bike. | | | |
| 1. **Write a design brief** for a project to develop a product for a local company that manufacture health and safety equipment for the building trade and who want you to design a device that could be attached to a ladder for holding small tools. | | | |

**Design & Technology – Design Specifications**

A **design specification** for a product is an essential part of the design process. It is a list of all of the needs that the product must meet.

On the back of the sheet write design specifications based on the project titles and the information provided for each one.

**Example**

**Task**Write a design specification for a portable reading lamp that can be secured to different objects.

**Design specification**The reading lamp should meet the following criteria:

* The lamp should be lightweight. This is to make it easily portable so that the user can move it around the room, house or to another location.
* The lamp should be small and compact. This is so the user can put it in a bag or pocket and easily transport it to different locations, making it highly portable.
* The lamp should have a clamp that is easy to operate. This is to allow the user to secure the lamp to objects when it is being used.
* The lamp should have a flexible ‘neck’. This is to allow the user to position the lamp so that light can be directed onto the book they are reading.
* The lamp should be battery powered.
* Etc.

Suggestions for VCOP are given below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Openers** | | **Easy vocabulary** | | | | |
| My design must  I have been asked  I will be  It is require  I am going to  It is my understanding that  My design will be | My concept must  In this project I will  My design shall  I believe that  I think.  My initial thoughts are  I am looking to | specification  project  thought  check list  important  rules  essential | desired  must have  must include should have  detailed  design  user | | include  because  possible likely  themed  trend  aimed | |
| **Connectives** | | **Hard vocabulary** | | | | |
| therefore  that is why  for this (that) reason  hence  because  so  since  as  because of | on account of  so that  consequently  if  unless  suppose that  in case that  providing that | requirements  necessary  vital  importance  design cycle  considerations  analysis | | inspirations  favourable  preferred  irrelevant  foreseeable  proceeding  development | | |
| **Punctuation**  **! ? ‘ …. ( ) - : ; , “ ” .** | | | | | | |
| 1. **Write a specification** for a product that can be used to support smart phones and tablets in a car, either by the driver, e.g. for satnav, or for passengers. | | | | | |
| 1. **Write a specification** for a product for a company who manufacture torches and have decided to expand their product range. They already manufacture a range of torches and want you to design a holder that will enable one of them to be clipped easily on and off a bike. | | | | | |
| 1. **Write a specification** for a local company that manufacture health and safety equipment for the building trade and who want you to design a device that could be attached to a ladder for holding small tools. | | | | | |

**Design & Technology – Careers using D&T 1**

There are many careers and jobs that make use of skills developed in Design and Technology. In the space below identify a range of different D&T related jobs/careers and explain the D&T skills that would be used in those jobs.

|  |
| --- |
|  |

**Design & Technology – Careers using D&T 2**

1. Carry out research to find out about the wide range of jobs available for people who study Design and Technology.
2. Create a poster in the space below to a wide range of D&T related jobs.

|  |
| --- |
|  |

**Design & Technology – Careers using D&T 3**

There are many career paths available for people who study Design and Technology or D&T related subjects. Investigate the study paths available that would lead to careers related to D&T or Engineering and in the space below produce a diagram that shows different paths that are available, giving examples of different qualifications and careers.

|  |
| --- |
|  |

**Design & Technology – Motion**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | Name the types of motion indicated by these symbols   |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  |  |  |  | | | |
|  | Find examples of products that make use of the different types of motion listed above. Write a list of products here. | | |
|  | Draw detailed diagrams of products that use motion. On the diagrams indicate the input and output and state the types of motion involved. | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |

**Design & Technology – Levers and Linkages**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | There are three classes of lever. Draw each class, labelling the fulcrum, load and effort.   |  |  |  | | --- | --- | --- | | Class 1 | Class 2 | Class 3 | | | |
|  | List some examples of products that use levers.   |  |  |  | | --- | --- | --- | | Class 1 examples | Class 2 examples | Class 3 examples | | | |
|  | Levers can be used to connect other parts of a mechanical system and form linkages. Draw and name examples of linkages, indicating the position of the lever in each example. | | |
|  | Produce a design for a child’s toy that makes use of levers and linkages. Explain how your design would work and clearly label the input, output and position of the mechanisms used. | | |
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**Design & Technology – Design Influences  
Social and cultural influences**

**Social influences**Society now demands that products are designed and manufactured to improve the quality of our lives and the environment in which we live. Society demands products that are newer, better, faster, smarter and greener (more environmentally friendly).

Example: Young people view mobile personal technology as a ‘must have’ item. This has led to rapid development in products such as the mobile phone and personal hi-fi. Each new version includes another feature that ensures the last version will be seen as being **obsolete**.

**Inclusive design**  
It is very important that all members of our society are taken into consideration when we are designing and making products. This is known as **inclusive design**.

**Cultural influences**  
**Culture** is the way particular groups of people have developed their beliefs, fashion, music and lifestyles. Our modern society is made up of people from a wide variety of cultures and we should use this to enrich our lives.

|  |  |  |  |
| --- | --- | --- | --- |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmf | 1. Explain the meaning of the term: **obsolete.** (Look it up if you need to). 2. Search the internet or magazines for images of the following: a. sports car b. family car Identify and label the features that make these cars unique.  |  |  | | --- | --- | | **Sports car** | **Family car** |  1. What features do you think are most important to the users of:  a. the sports car?    b. the family car? |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1. What is built-in obsolescence? 2. Search the internet or magazines for images of the following: a. sports car b. family car c. off-road vehicle Identify and explain the features that make these cars unique.  |  |  |  | | --- | --- | --- | | **Sports car** | **Family car** | **Off-road vehicle** |  1. How do you think society and culture have influenced the design of each of the cars? | | |
|  | 1. For each of the examples of car in the table above, explain the social and cultural influences on the design features included in each design. Identify typical users and explain what you think would be the features that those users consider to be most important in the design of the cars. | | |
| C:\Users\jason\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\YK8IR1J2\MC900038648[1].wmfMild | | Medium | Hot |