| Year/Grade | | | **DESIGN & TECHNOLOGY PROGRESS MAP**: Learning and Assessment Objectives | | | |
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| Y7 | Y8 | Y9 | Knowledge – I know:<br>*(Explore and Develop)* | Understanding – I understand:<br>*(Respond and Resolve)* | Skills – I can:<br>*(Plan and Prototype)* | Analyse and Evaluate – I can:<br>*(Plan and Prototype)* |
| | | 9 | * and use the properties and qualities of materials of my choice, and understand the performance of structural elements to achieve functioning products<br>* how more advanced mechanical systems are used in my product to enable changes in movement and force<br>* how more advanced electrical and electronic systems can be powered and used in my products<br>* how more advanced textile processes can be adapted and used in my products<br>* more advanced drawing methods can be manipulated and used in my work | * Research, and explore relevant information based on the user's needs<br> * how to use social, moral and cultural information to understand my user more clearly<br>* identify and solve my own design problems and understand how to develop problems given to me<br>* How to write a hierarchical specification with clear headings and justifications linked to my research. | * select specialist tools in my practical work and my choices are justified<br>* justify the reasons for my choice of materials and components, taking into account their properties<br>* justify the process that I choose to make my product | * compare and contrast existing products by analysing them and explaining how the information I have found will influence my own designs<br>* understand developments in design and technology. This includes the use of smart materials<br>* test, evaluate and refine my ideas and products against a specification, I take into account the views of intended users and other interested groups |
| | 9 | 8 | * and use the properties and qualities of materials and the performance of structural elements to achieve functioning products<br>* how advanced mechanical systems are used in my product to enable changes in movement and force<br>* how advanced electrical and electronic systems can be powered and used in my products<br>* how advanced textile processes can be adapted and used in my products<br>* advanced drawing methods can be manipulated and used in my work | * and have developed a design specification that allows me to be innovative, functional and create appealing products that respond to the user needs<br>* and have used a variety of approaches, for example, bio mimicry and user centred design, which has generated creative ideas and avoided stereotypical responses to the brief<br>* How to write a hierarchical specification with clear headings linked to my research. | * be accurate and precise when I work<br>* work very safely and can demonstrate to others | * understand the responsibilities of designers, engineers, and technologists and clearly show this in my work<br>* evaluate the impact of my product on individuals, society and the environment. |
| 9 | 8 | 7 | * and use the properties and qualities of materials and structural elements to achieve functioning products<br>* how mechanical systems are used in my product to enable changes in movement and force<br>* how electrical and electronic systems can be powered and used in my products<br>* how textile processes can be adapted and used in my work<br>* how drawing methods can be manipulated and used in my work | * social, moral and cultural issues that link to the user's needs<br>* identify and solve a design situation with a broad design brief that allows me to be creative<br>* How to write an ordered specification with clear headings linked to my research. | * select the correct tools in my practical work and explain their function<br>* make good choices when I select the materials and components I use | * analyse existing products and use this to develop my own ideas<br>* explain how new technologies and smart materials will enhance my design and how they impact on the user and the environment |
| 8 | 7 | 6 | * and use the properties and qualities of materials to achieve functioning products<br>* how mechanical systems are used in my product to enable changes in movement and force<br>* how electrical and electronic systems can be powered and used in my products<br>* how textile processes can be adapted and used in my work | * and have developed a design specification that allows me to respond to the design situation in a creative way<br>* and use research to inform my designs and have creative responses to the design brief<br>* How to write an ordered specification with clear headings linked to my research. | * explain the best process to use when making<br>* be accurate in my work | * test and evaluate my final product against my specification and improve it as a result<br>* know what my responsibility is as a designer and show this in my work |

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| | | | * some drawing methods can be manipulated and used in my work | | | |
| 7 | 6 | 5 | * and use the properties and qualities of materials to achieve functioning products<br>* how mechanical systems are used in my product to enable changes in movement and force<br>* how electrical and electronic systems can be powered and used in my products<br>* how textile processes can be adapted and used in my work<br>* some drawing methods can be manipulated and used in my work | * and have detailed planning for my final design<br>* and can present my ideas using more than two techniques<br>* How to write an ordered specification linked to my research. | * work very safely and can help others to be so in their practical<br>* name the tools I use | * understand the impact of my product on individuals, society and the environment.<br>* look at existing products that are relevant to my work and use them for ideas |
| 6 | 5 | 4 | * the properties and qualities of some materials and know how they might improve my product if used<br>* some mechanical and electrical systems and how I may include them in my work<br>* some textile processes and how I may include them in my work<br>* some drawing methods and how they may be included in my work | * how to use research to identify the user's needs<br>* and can identify a design situation and write a design brief<br>* How to write a specification linked to my research. | * name the materials and components I use<br>* name the processes I use in my practical work | * use and know about new technology and smart materials and how they can help my design and the user of my product<br>* test and evaluate my final product against my specification |
| 5 | 4 | 3 | * the properties and qualities of some materials and know how they might benefit my product<br>* some mechanical and electrical systems<br>* some textile processes<br>* some drawing methods | * and use research to write a detailed design specification based on the main areas of design and technology<br>* and use a variety of methods to develop and improve design ideas e.g CAD, modelling (4+ ideas) | * my work is mostly accurate<br>* work very safely | * understand what my responsibility is as a designer and show this in my work<br>* understand how my product can impact the environment and the user |
| 4 | 3 | 2 | * The properties and qualities of some materials<br>* a little about mechanical systems and electronic systems<br>* a little about textile processes<br>* a little about drawing methods | * my annotation has to be detailed and I have a plan to make my final design<br>* what a design specification is and how to write a basic one | * name some of the tools I use<br>* name some of the materials and components I use | * look at other products on the market to help me with my ideas<br>* use and have learnt a bit about new technologies and smart materials and how they help the user |
| 3 | 2 | 1 | * The properties of some materials<br>* a little about mechanical systems and electronic systems<br>* a little about textile processes<br>* a little about drawing methods | * the design brief and user needs<br>* and can come up with simple ideas and develop them so they are improved<br>* why my ideas are sketched and annotated | * name some of my processes I use in my practical work<br>* make my work accurate sometimes<br>* work safely | * evaluate my work against my specification<br>* understand what some of my responsibilities as a designer are and show this in my work<br>* understand how my product can impact the user |
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