

- be creative and innovative when designing;
- design products to meet the needs of clients and consumers;
- understand the design principles of form, function and fitness for purpose;
- understand the role that designers and product developers have, and the impact and responsibility they have on and to society;
- **analyse and evaluate existing products**, including those from professional designers;
- develop and use design briefs and specifications for product development;
- consider the conflicting demands that moral, cultural, economic, and social values and needs can make in the planning and in the designing of products;
- consider environmental and sustainability issues in designing products;
- **consider health and safety** in all its aspects;
- anticipate and design for product maintenance where appropriate;
- design for manufacturing in quantity and to be aware of current commercial/industrial processes;
- generate design proposals against stated design criteria, and to modify their proposals in the light of on-going analysis, evaluation and product development;
- Reflect critically when evaluating and modifying their design ideas and proposals in order to improve the products throughout inception and manufacture;
- use, where appropriate, a range of graphic techniques and ICT (including digital media), including CAD, to generate, develop, model and communicate design proposals;
- investigate and select appropriate materials/ ingredients and components;
- plan and organise activities which involve the use of materials/ingredients and components when developing or manufacturing;
- devise and apply test procedures;
- check the quality of their work at critical/key points during development, and to indicate ways of modifying and improving it when necessary;
- communicate the design proposal in an appropriate manner;
- be flexible and adaptable when designing;
- test and evaluate the final design proposal against the design specification;
- **evaluate the work** of other designers to inform their own practice;
- the advantages of working collaboratively as a member of a design team;
- understand the need to protect design ideas

select and use tools/equipment and processes to produce quality products;

- consider the solution to technical problems in the design and manufacture process;
- **use tools and equipment safely** with regard to themselves and others;
- work accurately and efficiently in terms of time, materials/ingredients and components;
- manufacture products applying quality control procedures;
- have knowledge of Computer Aided Manufacture (CAM) and to use as appropriate;
- ensure, through testing, modification and evaluation, that the quality of their products is suitable for intended users and devise modifications where necessary that would improve the outcome(s);
- the advantages of working as part of a team when designing and making products