

# Product Design - Key Stage 3 Level Descriptors

	Assessment Foci 1 -	AF2 -	AF3 -	AF4 -	AF5 -	AF6 -
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. They are discriminating in their selection and use of information sources to support their work.		They develop and model ideas in an innovative way. They interpret and apply knowledge and understanding creatively in new design contexts. They communicate ideas in new or unexpected ways.		They make products that are reliable and robust. They work with tools, equipment, materials, ingredients and components to a high degree of precision. They make products that fully meet the quality requirements given in the design proposal.	They reflect critically and effectively throughout designing and making processes.
Level 8	They respond to information they have identified.	They identify conflicting demands on a product.	Pupils use a range of strategies to fully develop and model appropriate ideas. They respond creatively to briefs, suggesting ways forward and explaining how their ideas address client needs. They use their understanding of others' designing by reinterpreting and applying learning in new contexts.	They organise their work.	They carry out processes accurately and consistently. They use tools, equipment, materials, ingredients and components with precision.	They clearly relate their findings to environmental, ethical, social and cultural dimensions. They identify a broad range of criteria for evaluating their products. They use accurate testing to inform their judgements when solving technical problems.
Level 7	Pupils use a wide range of appropriate sources of information 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 They search for trends and patterns in existing solutions	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. They provide a sound explanation for any change from the design proposal. They modify their products in the light of their evaluation to improve their performance.
Level 6	They show that they understand the form and function of familiar products	They develop detailed criteria for their products and use these to explore proposals They use these criteria to explore proposals	They respond creatively to briefs, exploring and testing their design thinking 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 They show 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 5	Pupils develop ideas by drawing on and using various sources of information	They show an understanding of aesthetic and economic dimensions. They respond to briefs showing understanding of how culture and society are reflected in familiar products	They clarify their ideas through discussion, drawing and modelling They develop designs 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 They work with a range of tools, materials, ingredients, equipment, components and processes They modify plans where appropriate They work with some precision.	They work from their own detailed plans They work with a range of tools, materials, ingredients, equipment, components and processes They modify plans where appropriate They work with some precision.	They check their work as it develops, solving technical problems They 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 4	They collect and use information. They take users' views about aesthetic issues into account They consider technical issues as they respond to briefs	They show that they are aware of constraints.	They communicate alternative ideas using words, labelled sketches and models	They apply their knowledge and understanding of materials, ingredients and components They produce step-by-step plans They select a range of tools and equipment	They work with a range of tools with some accuracy. They pay attention to quality of finish and to function	They identify what is working well and what could be improved to overcome technical problems. They reflect on their designs as they develop They recognise the significance of knowledge and previous experience.
Level 3		They recognise that their designs have to meet a range of different needs	They use models to communicate the details of their designs.	They choose appropriate tools, equipment, materials, components and techniques.	They use tools and equipment with some accuracy	They identify where evaluation of the design and make process and their products has led to improvements

# Product Design - Key Stage 4 Grade Descriptors

	Assessment Foci 1 -	AF2 -	AF3 -	AF4 -	AF5 -
Grade A*	Detailed, analysed evidence of both the design need and intended user/users leading to a clear and precise design brief for the product.	Detailed examination of other similar products; detailed analysis of other relevant research. Intended user(s) of product examined with all significant data identified and collected; other key data identified and collected. A detailed and justified specification which fully considers the user.	A range of detailed ideas leading to the development of a full and thorough solution showing innovation, flair and / or some risk taking. Appropriate consideration given to the user, aesthetics, ergonomics, function, sustainability and / or the other design influences with few errors in spelling, punctuation and grammar. Design proposal chosen as a result of detailed and justified evaluation against the specification and product standards. Graphical, written and modelling communication will demonstrate clarity and confidence, be of a high standard and structure, and employ a wide range of appropriate techniques. ICT includes work which fully demonstrates the use of appropriate CAD or other computer applications as an integrated part of the designing activity.	Production log shows a high degree of skills, use of materials, tools and equipment; images are explained with detail and reasoning; justification of modifications and problem solving during making. Shows careful selection and economic use of materials and consideration of sustainability; high understanding of safe working practices; clear understanding of how to achieve precision. The product will be completed to a high standard and will fully meet the requirements of the design specification.	Evidence of thorough testing by a user / user group and full evaluation with reference to the design specification using written techniques of a high standard and structure, with few errors in spelling, punctuation and grammar. Design modifications / improvements of the final product are suggested in full detail. Consideration of quantity production leading to a detailed description of a suitable quantity manufacturing system including details of chosen materials for the main component(s). Marketing presentation is thorough, fully explained and uses an innovative and persuasive approach.
Grade A	Detailed evidence of both the design need and intended user/users leading to a clear and precise design brief for the product.	Detailed examination of other similar products. Intended user(s) of product examined with all significant data identified and collected. A detailed and justified specification.	A range of detailed ideas leading to the development of a full and thorough solution showing innovation, flair or some risk taking. Appropriate consideration given to the user, aesthetics, ergonomics, function, sustainability or the other design influences with few errors in spelling, punctuation and grammar. Design proposal chosen as a result of detailed evaluation against the specification and product standards. Graphical, written and modelling communication will demonstrate confidence, be of a high standard and structure, and employ a wide range of appropriate techniques. ICT includes work which demonstrates the use of appropriate CAD or other computer applications as an integrated part of the designing activity.	Production log shows a high degree of skills, use of materials, tools and equipment; images are explained with reasoning; justification of modifications and problem solving during making. Shows careful selection and economic use of materials; high understanding of safe working practices; clear understanding of how to achieve precision. The product will be completed to a fairly high standard and will fully meet the requirements of the design specification.	Evidence of quite thorough testing by a user / user group and a near full evaluation with reference to the design specification using written techniques of a fairly high standard and structure, with few errors in spelling, punctuation and grammar. Design modifications / improvements of the final product are suggested in near full detail. Consideration of quantity production leading to a fairly detailed description of a suitable quantity manufacturing system including details of chosen materials for the main component(s). Marketing presentation is quite thorough, fully explained and uses an innovative and persuasive approach.
Grade B	Evidence of analysis of both the design need and the intended user/users leading to a clear design brief for the product.	Full examination of other similar products; other relevant research. Intended user(s) of product examined with important data identified and collected; other data identified and collected. Specification identifying most of the key features and considers the user.	A range of detailed ideas leading to the development of a solution showing some innovation and flair. Consideration given to the user, aesthetics, ergonomics, function, sustainability and / or the other design influences with few errors in spelling, punctuation and grammar. Design proposal chosen, supported by clear evaluation against the specification and product standards. Graphical, written and modelling communication will demonstrate clarity, be of a good standard and structure, and employ a number of appropriate techniques. ICT includes good use of CAD or other computer applications as part of the designing activity.	Production log shows a good range of skills; use of materials, tools and equipment explained clearly; modifications and problem solving during making recorded. Materials have been used economically, with some consideration of sustainability; good understanding of safe working practices; understanding of how to achieve precision. The product will exhibit a good standard of outcome, will be complete and will function as intended.	Evidence of testing by a user / user group and evaluation with reference to the design specification, using written techniques of a good standard and structure, with few errors in spelling, punctuation and grammar. Design modifications / improvements of the final product are suggested with detail. Consideration of quantity production leading to a detailed description of a suitable quantity manufacturing system for the product prototype. Marketing presentation is explained, is interesting and uses a persuasive approach.

Grade C	Evidence of both the design need and the intended user/users leading to a clear design brief for the product.	Full examination of other similar products. Intended user(s) of product examined with important data identified and collected. Specification identifying most of the key features.	A range of ideas leading to the development of a solution showing some innovation and flair. Consideration given to the user, aesthetics, ergonomics, function, sustainability or the other design influences with few errors in spelling, punctuation and grammar. Design proposal chosen, supported by an evaluation against the specification and product standards. Graphical, written and modelling communication will demonstrate some clarity, be of a fair standard and structure, and employ a number of appropriate techniques. ICT includes fair use of CAD or other computer applications as part of the designing activity.	Production log shows a fairly good range of skills; use of materials, tools and equipment explained clearly; modifications and problem solving during making recorded.  Materials have been used economically, with some consideration of sustainability; quite good understanding of safe working practices; understanding of how to achieve precision.  The product will exhibit a fairly good standard of outcome, will be complete and will function as intended.	Evidence of some testing by a user / user group and evaluation with reference to the design specification, using written techniques of a good standard and structure, with few errors in spelling, punctuation and grammar. Design modifications / improvements of the final product are suggested with some detail. Consideration of quantity production leading to a fairly detailed description of a suitable quantity manufacturing system for the product prototype. Marketing presentation is explained, is interesting and partly uses a persuasive approach.
Grade D	Some analysis and details of the design need or the intended user/users leading to a design brief for the product.	Examination of other similar products. Intended user(s) of product examined with some data identified or collected. Specification identifying some key features.	Several solutions proposed showing some detail but with little innovation or flair. Some consideration given to the user, aesthetics, ergonomics, function, sustainability or the other design influences with errors in spelling, punctuation and grammar. cursory evaluation of designs against specification and product standards. Graphical, written and modelling communication will be of a reasonable standard and structure, but using a limited range of techniques. ICT includes basic CAD or other computer applications.	Production log shows a satisfactory range of skills, use of materials, tools and equipment. Work shows some economic use of materials or some consideration of sustainability; reasonable understanding of safe working practices; indication of how to achieve precision. The product will exhibit a reasonable standard of outcome, be mainly complete and will satisfy the specification with a limited degree of success.	Evidence of evaluation with reference to the design specification and a user / user group, using written techniques of a reasonable standard and structure, with errors in spelling, punctuation and grammar. Design modifications / improvements of the final product are suggested with some detail. Consideration of quantity production leading to limited but clear details of a suitable quantity manufacturing system for the prototype product. Marketing presentation highlights key points yet is dull and uninspiring.
Grade E	Some details of the design need or the intended user/users leading to a design brief for the product.	Consideration of the examination other similar products. Intended user(s) of product examined with important data identified. Specification identifying few key features.	Several solutions proposed showing little detail, with little innovation or flair. Consideration given to the user, aesthetics, ergonomics, function, sustainability or the other design influences with errors in spelling, punctuation and grammar. cursory evaluation of designs against specification and some product standards. Graphical, written and modelling communication will be of a reasonable standard and structure, but using few techniques. ICT includes basic CAD or other computer applications.	Production log shows evidence of a range of skills, use of materials, tools and equipment. Work shows evidence of economic use of materials or some consideration of sustainability; reasonable understanding of safe working practices; indication of how to achieve precision. The product will exhibit a satisfactory standard of outcome, be mainly complete and will satisfy the specification with a limited degree of success.	Evidence of evaluation with some reference to the design specification and a user / user group, using written techniques of a fairly reasonable standard and structure, with errors in spelling, punctuation and grammar. Design modifications / improvements of the final product are suggested with little detail. Consideration of quantity production leading to limited details of a suitable quantity manufacturing system for the prototype product. Marketing presentation has key points covered yet is dull and uninspiring.
Grade F	A statement of the design need.	Cursory examination of other similar products. Limited research of intended user(s). Specification identifying some basic requirements.	One or more solutions proposed. Little consideration given to the user, aesthetics, ergonomics, function, sustainability or the other design influences, with noticeable errors in spelling punctuation and grammar. Little or no evaluation of designs against specification and product standards. Work displays a low standard of graphical communication, structure, written communication and modelling techniques. ICT limited to word or data processing or simple drawing.	Production log shows a limited range of skills, use of materials, tools and equipment. Work shows little economic use of materials or consideration of sustainability; no clear understanding of safe working practices; no indication of how to achieve precision. The product will exhibit a low standard of outcome and may not be successfully completed.	Superficial evidence of user-group testing and evaluation with no reference to the design specification, using a low standard of written techniques, with noticeable errors in spelling, punctuation and grammar. Design modifications / improvements of the final product are suggested but lack detail. Consideration of quantity production leading to a statement identifying a suitable quantity manufacturing system for the prototype product. Marketing presentation addresses some key points.

# Product Design - Key Stage 5 Grade Descriptors

	Assessment Foci 1 – Materials and components	AF2 – Design and market influence	AF3 – Processes and manufacture
Grade A*			
Grade A	Demonstrate specific knowledge of the working characteristics of materials, Analyse and assess information, creative and innovative use of materials	Understand quality issues, demonstrate clear strategies for testing and evaluation taking into account form, function and style, reflects environmental, cultural, ethical and moral issues.	Use correct technical terminology, clear understanding of health and safety issues, appropriate, creative and innovative use of processes, demonstrate an understanding of commercial practices
Grade B	Demonstrate a clear knowledge and understanding of the characteristics of a wide range of materials. Analyse information gained and show creative application of materials	Demonstrate strategies for test and evaluation, reflecting on form, function and style and the need for quality control, Consider the impact with respect to environmental and cultural issues.	Demonstrate innovative application of commercial processes, a clear understanding of health and safety and the stages of production in a commercial setting
Grade C	Demonstrate a knowledge of the working characteristics of a range of materials, analyse information gained, show some creativity in the use of materials	Demonstrate the use of some strategies for testing and evaluating their own and others work, refer to the environmental and social impact of product design	Correct use of technical terminology and processes, show a clear understanding of health and safety in a range of settings and some commercial processes
Grade D	Demonstrate some understanding of the working characteristics of a small group of materials, show how those characteristics can be used	Demonstrate clear communication of ideas and information that reflects social and environmental issues, consider form and function of design	Show an understanding of the key stages of production, health and safety and commercial practices
Grade E	Demonstrate some understanding of how their knowledge and understanding of materials and their uses meet general design criteria	Communicate ideas and information appropriately, demonstrate some strategies for testing and evaluation taking into account form and function of a product	Demonstrate an understanding of at least one feature of industrial and commercial practices and some stages of production