

# Attainment Criteria for Key Stage 3 Design & Technology

## Introduction

Schools use attainment criteria to facilitate the assessment of progress. However, the Secretary of State for education has disappplied the attainment criteria previously used for Key Stage Design & Technology. One of the weaknesses of the previous attainment criteria was that there was no direct link to progression at Key Stage 4/GCSE D&T. This disapplication gives the opportunity to adopt new assessment criteria, which more accurately reflect the development of skills that will be assessed in GCSE D&T subjects.

The following level descriptors have been developed by a team of senior examiners and experienced teachers from the GCSE criteria used by the two largest exam boards. They are skills based and should be suitable for use across all subject specialisms of Design & Technology, allowing standardised assessment across a department.

In broad terms, the criteria for Level 8 are equivalent to a GCSE Grade C. Similarly, Level 6 is broadly equivalent to GCSE grade E and Level 4 is broadly equivalent to GCSE grade G. With typical progress of one level per year, over a two year GCSE course a typical learner would expect to improve by two grades; i.e. a learner achieving Level 6 in year 9 could therefore be expected to achieve GCSE grade C in year 11.

These level descriptors are fully supported by a range of materials and Assessment for Learning (AfL) resources available from [www.attainmentineducation.org](http://www.attainmentineducation.org).

## Level Descriptors

At Level 1, in response to a design challenge learners should be able to recognise the characteristics of familiar products. They should be able to generate a design idea based on an existing product, using pictures and words to describe what they want to do. Learners should be able to identify the tools and equipment they use during making and use these safely, with help where needed. They should be able to talk about their own and other people's work in simple terms.

At Level 2, in response to a design challenge learners should be able to identify some of the important features needed in a design. They should be able to generate a design idea, using pictures and words to describe their idea. Learners should be able to identify the tools and equipment needed to make the product and carry out practical work safely. They should be able to demonstrate a few basic skills in shaping and combining materials, including CAM if appropriate, with limited guidance. They should be able to carry out a simple test of their product to see if it can do what it is needed to do.

At Level 3, in response to a design challenge learners should be able to write down a simple list of design criteria that includes a variety of different types of need. They should be able to generate a range of design ideas, identifying the important features and suggesting materials that they could be made from. They should be able to develop their ideas to produce a final design proposal. They should be able to put the processes needed to make a product in order and identify the tools and equipment needed. Learners should be able to carry out practical work safely and independently, demonstrating some basic skills in a few processes, including CAM if appropriate. They should be able to test a product they have made to see if it can do what it is needed to do and explain any differences between the design and the final product.

At Level 4, in response to a design challenge learners should be able to identify the important design features and constraints. They should consider these when generating ideas, along with the needs of the user and environmental issues. They should make some use of modelling to test their designs and be able to select a material or component that could be used in the product based on some of its properties. Learners should be able to identify some of the main stages needed to make a product, identifying the tools and equipment needed. During practical work, they should be able to make simple products that are correctly assembled, demonstrating basic skills and awareness of safe working practices with a variety of tools or processes, including CAM if appropriate. They should be able to carry out a simple evaluation of a product they have made and suggest improvements that could be made to it.

At Level 5, in response to a design challenge learners should be able to use research, including product analysis, to identify and explain a few of the design criteria. They should be able to generate design ideas that satisfy a few of the design criteria, and refer to social, moral, environmental or sustainability considerations. They should be able to identify a variety of modelling methods that can be used to develop their design and use modelling to test a few design features against the design criteria. They should select a few of the materials that could be used in their product based on some of their properties. Learners should be able to prepare step-by-step instructions for making a product which include some details of the processes and techniques to use and appropriate safety notes, identifying

which activities could affect how well the final product will meet the general requirements of the design. During practical work, they should be able to make products that are generally well assembled and with a good finish, demonstrating skills in a wide variety of tools or processes, including CAM if appropriate. Their evaluation should include testing at least one feature of the final product against the design criteria and explaining how and why the product was tested this way. They should also be able to comment about how suitable the final product is for the target user.

At Level 6, in response to a design challenge learners should be able to generate a wide range of design criteria, explaining the implications of some of these by targeted research, including product analysis. They should be able to generate design ideas that satisfy some of the design criteria, giving reasons for the main features and making some consideration of either social, moral, environmental or sustainability issues. They should use more than one type of modelling (including CAD where appropriate) to develop and evaluate their design against the design criteria, and be able to describe how their design ideas have developed. Learners should select some of the materials that could be used in their products based on their properties. They should be able to prepare instructions for making a product which include alternative tools and processes to use and some quality control checks, identifying some of the individual activities that could affect how well the final product will meet each of the design criteria. During practical work, they should be able to assemble and make products that offer some challenge, demonstrating good skills in the selection and use of a wide variety of tools or processes, including CAM if appropriate. Their evaluation should include testing at least a few features of the final product against the design criteria and explaining improvements needed to the final product.

At level 7, in response to a design challenge learners should be able to generate a wide range of design criteria, explaining many of these by targeted research, including detailed product analysis. They should be able to show how all of their design criteria link to their research, and explain how some of their research will influence their designs. They should be able to generate design ideas that satisfy many of the design criteria, showing how they have been influenced by social, moral, environmental and sustainability issues. They should objectively evaluate their design ideas against some of the design criteria, making use of modelling or computer simulation, and consider the needs of the user. They should be able to explain how their design ideas have been developed and improved. Learners should select most of the materials that could be used in their products based on their properties. They should be able to prepare detailed instructions for making a product, including operating parameters, process times and quality control checks, identifying most of the individual activities that could affect how well their final product will meet each of the design criteria. During practical work, they should be able to assemble, make and finish products that offer good challenge, demonstrating good skills in the selection and use of a wide variety of different tools, processes and finishing techniques, including CAM if appropriate. They should select and justify a suitable method to evaluate their product, based upon its use, and test at least some features of the final product against the design criteria, improving their product after testing. Learners should also be able to show that the product would be suitable for the target user.

At level 8, in response to a design challenge learners should be able to identify the target market for a product and research the design features. This should include detailed product analysis explaining the design features of related products. They should be able to explain how the outcomes of this research will influence their own designs and generate a wide range of design criteria, explaining these in detail and showing how they link to their research and analysis. They should be able to generate design ideas that satisfy most of the design criteria, explaining in detail their main features, how they could be made using the available equipment, and showing how they have been influenced by their research and a range of social, moral, environmental or sustainability issues. They should objectively evaluate their design ideas against most of the design criteria using scale models and/or computer simulation, making useful and effective changes during development. They should select the materials that could be used in their products based on their properties. Learners should be able to prepare detailed instructions for making that could be used by a third party to successfully make the product, including appropriate forms of quality control and identifying all of the individual activities during making that could affect how well the product will meet each of the design criteria. During practical work, they should be able to assemble, make and finish demanding products, demonstrating very good skills in the selection and use of a wide variety of different tools, processes and finishing techniques, including CAM if appropriate. They should show how quality control checks were applied during making. Their evaluation should include justified and appropriate testing of most features of the product against the design criteria. Learners should also be able to show that the outcome would be suitable for the target market and evaluate the commercial viability of the final product.