KS3 Level Descriptor Statements Derived from GCSE 9-1 Design & Technology

Introduction

Schools use attainment criteria to facilitate the assessment of progress. However, the Secretary of State for education has disapplied the attainment criteria previously used for Key Stage 3 Design & Technology. This disapplication gives the opportunity to adopt new assessment criteria, which more accurately reflect the development of skills that will be assessed in GCSE 9-1 Design & Technology.

The following descriptor statements are based on the NEA assessment criteria in the new GCSE 9-1 Design & Technology specification. They were developed by a group of examiners for use in their own classrooms. They were not prepared by, and have not been approved by, any exam board.

Important notes on the Interpretation of These Levels:

These descriptors represent attainment levels in year 9. They are based on 'working at' levels, derived from the GCSE Design & Technology criteria. They can be used to identify the current status of levels of pupils in other year groups. 'Normal' progression is assumed to be one level per year. This means that the 'working at' assessment for the end of year 7 is 2 levels higher than the stated level. I.e. A pupil who should achieve a level 8 in year 9 should be achieving a level 6 in year 7.

Note on interpretation, based on experience of a senior examiner: where a criteria is quantified as 'a few' this typically means 2-5; 'most' typically means 5+, or over half of the relevant points.

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

Level 1 descriptor Y9

At level 1, pupils can identify at least one design possibility for a provided context. They can identify a user/client and they produce a simple statement of what is required as the design brief. They consider the work of others, although this may make little contribution to their design thinking. They produce a simple design specification, listing a few criteria. They generate a design idea, labelling this with a few descriptive comments about aesthetics. They use a single design strategy and communicate their ideas using a single method. They can use a 2D or 3D modelling technique (including CAD if appropriate) and test one aspect of their design. They select a few of the materials or components to make their prototype (which may not be appropriate) and identify the main process that is required to make it. Pupils work safely, demonstrating a low level of skill, often requiring individual support or guidance. They use a few tools (including CAM where appropriate) and a single material and make a prototype of low quality. They measure a feature of their prototype. Pupils test the overall performance of their prototype and make a simple assessment of its performance.

Level 2 descriptor Y9

At level 2, pupils can identify a few design possibilities for a provided context. They identify a user/client and at least one of their needs and wants. They carry out basic investigation into the work of others. They produce a simple design brief and design specification, explaining a few criteria in the design specification. They generate a few design ideas with obvious design fixation, labelling these with a few descriptive comments about functionality and aesthetics. They use a single design strategy and communicate their ideas using one or two techniques. They can use one or two 2D/3D modelling techniques (including CAD if appropriate) and use one method to test if their design idea meets one of the requirements. They select some of the materials or components to make their prototype (which may not be appropriate) and produce simple manufacturing instructions. Pupils work safely, demonstrating a low level of skill with a few tools

and materials (including CAM where appropriate). They make a prototype of low quality and make a single measurement for quality control purposes. Pupils test one feature of their prototype against a design brief or design specification and make a limited evaluation of their final prototype, identifying at least one feature of the prototype that needs to be modified.

Level 3 descriptor Y9

At level 3, pupils can identify some design possibilities for a provided context in the initial stages of a project. They identify a user/client and state a few of the user/client's needs and wants. The pupil produces a basic design brief and design specification, justifying a few of the criteria in their design specification in terms of the needs and wants of the user/client. They carry out a basic investigation into the work of others and state a few social and economic effects that their design possibilities could have on society. They generate a few design ideas, although there is a high degree of design fixation, annotating these with a few comments about functionality, aesthetics and innovation. They use a single design strategy and use a few techniques to experiment with and communicate their ideas. Pupils use a few 2D/3D modelling techniques (including CAD if appropriate) and use a few methods to test that their design ideas meet a few of the requirements. They select the materials or components to make their prototype, which may not be appropriate, and produce a basic manufacturing specification. Pupils work safely and demonstrate a basic level of skill with a few tools and materials (including CAM where appropriate). They make a few measurements for quality control purposes and make a prototype of basic quality. Pupils test a few features of the prototype against the design brief and design specification and make a basic evaluation of their final prototype, identifying at least one design or manufacturing change made during the development of the design.

Level 4 descriptor Y9

At level 4, pupils can identify some design possibilities, explaining how a few of these link to the opportunities of the provided context. They can identify a user/client that is partially relevant to the provided context, investigating a few of the user/client's needs and wants. Their investigation of the work of others has a few influences on their design thinking. Pupils state some social and economic effects that their design possibilities could have on society, explaining at least one of these. Their investigation of design possibilities should extend beyond the initial stage of the project. Pupils can produce an adequate design brief that shows some relevance to the context and includes at least one user/client need or want. They produce a design specification with several criteria, justifying a few criteria in terms of the needs and wants of the user/client. Their specification has some influence on subsequent design stages. They generate a few imaginative design ideas, although there may be some design fixation. They label their ideas with a few comments about functionality, aesthetics and innovation. They indicate at least one way that their investigative work has influenced their design thinking. They use a few techniques to carry out experimentation and use some techniques to communicate ideas. They use a design strategy and may refer to other design strategies. Pupils use a few 2D/3D modelling techniques (including CAM if appropriate) to develop their ideas and use some methods to test that their ideas meet a few of the requirements. They carry out basic research into the working properties or availability of materials and select the materials and components to make their prototype, a few of which are suitable for the purpose. They produce a manufacturing specification and explain the reasons for using one of the processes included in this. Pupils work safely, demonstrating an adequate level of skill, and mostly using the correct tools, materials and equipment (including CAM where appropriate). They carry out a few measurements and test the prototype for quality control purposes. They make a prototype of sufficient quality, which meets at least one of the needs of the user/client. Their prototype could be commercially viable, although significant further development would be needed. There is some, but limited, evidence of analysis and evaluation at a few different stages in the project and evidence of iterative design. Pupils test a few features of the design against the design brief and design specification and analyse and evaluate their final prototype. They

consider at least one point of feedback from a third party and identify a few modifications to the design which were a result of testing, analysis and evaluation.

Level 5 descriptor Y9

At level 5, pupils can identify some design possibilities, explaining how some of these link to the opportunities of the provided context. They can identify a user/client that is partially relevant to the provided context, investigating some of the user/client's needs and wants, and explaining a few of these. They investigate the work of others and state how this had some influence on their design thinking. Pupils can explain a few of the social and economic effects that their design possibilities could have on society. Their investigation of design possibilities continues beyond the initial stages of the project and is used to explain some design decisions. Pupils can produce an adequate design brief that shows some relevance to the context provided and includes a few of the user/client's needs and wants. They produce a design specification with several criteria, justifying some criteria in terms of the needs and wants of the user/client. Their specification has some influence on some subsequent design stages. They generate some imaginative design ideas, although there may be a fair degree of design fixation. They label most of their ideas with some comments about functionality, aesthetics and innovation. They indicate a few ways that their investigative work has influenced their design thinking. They use some different techniques to carry out experimentation and communicate ideas and explore the use of at least two different design strategies. Pupils use some 2D/3D modelling techniques (including CAM if appropriate) to develop their ideas and use a range of methods to test that their design ideas meet some of the requirements. They carry out some research into the working properties and availability of a few materials and select the materials and components to make their prototype, some of which are suitable for the purpose. They produce a manufacturing specification and explain the reasons for using a few of the process is included in this. Pupils work safely, demonstrating an adequate level of skill and mostly using the correct tools, materials and equipment (including CAM where appropriate). They carry out some measurements and a few tests on the prototype for quality control purposes. They make a prototype of sufficient quality, which meets a few of the needs of the user/client. The prototype could be commercially viable with further development. There is some evidence of analysis and evaluation at some different stages of the project and evidence of iterative design. Pupils test some of the main features of the design against the design brief and design specification and analyse and evaluate their final prototype. They consider a few points of feedback from third parties. They identify a few modifications to the design which were a result of testing, analysis and evaluation.

Level 6 descriptor Y9

At level 6, pupils can identify some design possibilities, explaining how they link to the opportunities of the provided context. They can identify a user/client that is at least partially relevant to the provided context, investigate the user/client's needs and wants, and explain some of these. They investigate the work of others and state how this had some influence on their design thinking. Pupils can explain some social and economic effects that the design possibilities could have on society. Their investigation of design possibilities continues beyond the initial stages of the project, to explain and justify design decisions. Pupils can produce an adequate design brief that shows some relevance to the context provided and includes some user/client needs and wants. They produce a design specification with several criteria, justifying several criteria in terms of the needs and wants of the user/client. Their design specification has some influence on subsequent stages in the design process. They generate some imaginative design ideas, although there may be a degree of design fixation. They label almost all their ideas with some comments about functionality, aesthetics and innovation. They show how their investigative work influenced their design thinking. They use a range of techniques to carry out experimentation and communicate their ideas. They explore the use of a few different design strategies. Pupils use some 2D/3D modelling techniques (including CAD if appropriate) to develop their ideas and use a variety of methods to test that their ideas meet some of the requirements. They carry out some research into the working properties and availability of materials and select the materials and components to make their prototype, most of which are

appropriate. They produce a manufacturing specification with enough information to allow manufacture and explain the reasons for using the processes included in this. Pupils work safely, demonstrating an adequate level of skill and using the correct tools, materials and equipment (including CAM where appropriate). They carry out some measurement and testing for quality control purposes. They make a prototype of sufficient quality, which meets some of the needs of the user/client. There is evidence of analysis and design at some different stages of the project and evidence of iterative design. Pupils test the main features of the design against the design brief and specification and analyse and evaluate their final prototype. They consider a few points of feedback from third parties. They identify some modifications to the design which were a result of testing, analysis and evaluation.

Level 7 descriptor Y9

At level 7, pupils can identify a range of design possibilities, explaining how some of these link to the provided context. They also explain a few of the problems and opportunities offered by the context. They identify a user/client that is mostly relevant to the provided context, investigate the user/client's needs and wants and explain some of these. They investigate the work of others in some detail and show how this has influenced their design thinking. Pupils can explain some social and economic effects that the design possibilities could have on society. Their investigation of design possibilities continues beyond the initial stages into a few other stages of the project, to explain and justify design decisions. Pupils produce a good design brief that shows some relevance to the context and considers several user/client needs and wants. They produce a detailed design specification, justifying most criteria in terms of the needs and wants of the user/client. They use their design specification to inform some subsequent stages in the design process. They generate imaginative design ideas which largely avoid design fixation. They label their ideas with comments about functionality, aesthetics and innovation. They continue their investigative work beyond the initial stages of the project and use this to generate a few new ideas. They use a range of techniques to carry out experimentation with their ideas and communicate ideas using a wide range of techniques. They explore different design strategies, using a few different strategies for different purposes. Pupils use a range of 2D/3D modelling techniques (including CAD if appropriate), producing good models. They develop their ideas and use a variety of methods to test that their ideas meet most of their requirements. They carry out research into the working properties and availability of materials and select the materials to make their prototype, almost all of which are appropriate. They produce a manufacturing specification with enough information to allow manufacture, with details on some of the manufacturing methods and processes and explanations of the reasons for using the processes included in this, justifying some of their choices. Pupils work safely, demonstrating a good level of skill and using the correct tools, materials and equipment (including CAD where appropriate). They carry out quality control in some detail and apply a few tolerances when making their prototype. They make a prototype of good quality, which meets some of the needs of the user/client. Their prototype could be commercially viable with minimal further development. There is evidence of analysis and evaluation at several stages of the project and evidence of iterative design. Pupils test most features of the design against the design brief and design specification and analyse and evaluate their final prototype. They consider a few points of feedback from third parties. They identify some modifications to the design which were a result of testing, analysis and evaluation, describing these in some detail. They identify a few changes or influences on their design brief, design specification and manufacturing specification which were a result of testing, analysis and evaluation.

Level 8 descriptor Y9

At level 8, pupils can identify a range of design possibilities, explaining how these link to the provided context. They also explain some of the problems and opportunities offered by the context. They identify a user/client that is mostly relevant to the context, investigate the user/client's needs and wants and explain several of these. They investigate the work of others in detail and show how this influenced their design thinking. Pupils can explain several social and economic effects that the design possibilities could have on society. Their investigation of design possibilities continues beyond the initial stages into a few other stages

of the project, to explain and justify design decisions. Pupils produce a good design brief that has clear links to the context and considers several of the user/client needs and wants. They produce a detailed design specification, justifying almost all of the criteria in terms of the needs and wants of the user/client. They use their design specification to inform several subsequent stages in the design process. They generate imaginative and creative design ideas which mainly avoid design fixation. They label their ideas with comments about functionality, aesthetics and innovation. They continue their investigative work beyond the initial stages of the project and use this to generate some new ideas. They use a wide range of techniques to both experiment with and communicate their ideas. They use different design strategies for different purposes. Pupils use a range of 2D/3D modelling techniques (including CAD where appropriate) to develop their ideas, producing good models. They use a variety of methods to test that their ideas meet almost all of the requirements. They carry out detailed research into the working properties and availability of materials and select the materials to make their prototype, almost all of which are appropriate. They produce a manufacturing specification with enough information to allow manufacture, with detail on most of the manufacturing methods and processes. They justify their choices of manufacturing method and processes. Pupils work safely, demonstrating a good and consistent level of skill and using the correct tools, materials and equipment (including CAD where appropriate). They carry out detailed quality control and apply some tolerances when making their prototype. They make a prototype of good quality, which meets most of the needs of the user/client. The prototype could be commercially viable. There is evidence of analysis and evaluation at several different stages of the project and evidence of iterative design. Pupils test most features of the design against the design brief and design specification and analyse and evaluate their final prototype. They consider some feedback from third parties. They identify modifications made to the design which were a result of testing, analysis and evaluation, describing these in detail. They identify some changes to, or influences on, their design brief, design specification and manufacturing specification, which were a result of testing, analysis and evaluation.

Level 9 descriptor Y9

At level 9, pupils can identify a range of design possibilities, explaining how these link to the provided context. They also explain the problems and opportunities offered by the context. They identify a user/client that is mostly relevant to the context, investigate the user/client's needs and wants and explain almost all of these. They investigate the work of others in detail and show how this has influenced their design thinking. Pupils can explain several social and economic effects that the design possibilities could have on society. They investigate design possibilities at several points in the project, to explain and justify design decisions. Pupils produce a good design brief that has clear links to the context and considers most of the user/client needs and wants. They produce a detailed design specification, justifying each criteria in terms of the needs and wants of the user/client. The subsequent stages in the design process are largely informed by their design specification. They generate imaginative and creative ideas with minimal design fixation. They label their ideas with comments about functionality, aesthetics and innovation, some of which are detailed. They continue their investigative work beyond the initial stages of the project, focusing on some features, and use this to generate some new ideas. They use a wide range of techniques to carry out experimentation with their ideas. They communicate ideas to a high standard using a wide range of techniques. They make imaginative use of different design strategies for different purposes, explaining why they were used. Pupils use a wide range of 2D/3D modelling techniques (including CAD where appropriate) to develop their ideas, producing good models. They carry out detailed development work covering a few aspects of their final prototype. They use a variety of methods to test that their ideas meet all of the requirements. They carry out research in great detail into the working properties and availability of materials and select the materials to make their prototype, all of which are fully appropriate. They produce a manufacturing specification detailing the manufacturing methods and processes, providing detailed justifications for their choices. Pupils work safely, demonstrating a high level of skill and using the correct tools, materials and equipment (including CAD where appropriate). They carry out detailed quality control and apply some very tight tolerances when making the prototype. They make a prototype of high quality,

which meets the needs of the user/client. Their prototype could be commercially viable. There is evidence of analysis and evaluation at every stage of the project and evidence of iterative design. Pupils test almost all aspects of the final prototype against the design brief and design specification and analyse and evaluate their final prototype. They respond to feedback from third parties, modifying their design if needed. They include comments at most stages of the project detailing and explaining modifications made to the design which were a result of testing, analysis and evaluation. They identified a number of changes to their design brief, design specification and manufacturing specification, which were a result of testing, analysis and evaluation.

