



HILLSIDE
HIGH SCHOOL

Excellence in the Heart of the Community



KEY STAGE 3 Y7 - Y9



ASSESSMENT STEPS



Design & Technology

Key Stage 3 Descriptors	<p align="center">Key Knowledge Skills and Understanding for Key Stage 3 What do pupils know and what can they do?</p>				
DESIGN	MAKE	EVALUATE	TECHNICAL KNOWLEDGE	COOKING & NUTRITION	
<p align="center">+ Excelling (Projected Grade 9 at GCSE)</p>	<ul style="list-style-type: none"> I research and explore relevant information based on the users needs. I know how to use social, moral and cultural information to understand the user more clearly. I can identify and solve my own design problems and understand how to develop solutions independently. I have developed a specification that allows me to be innovative, functional and create appealing products that respond to the users needs. I have avoided stereotypical responses to the brief. I generate highly creative and demanding ideas. 	<ul style="list-style-type: none"> I can select specialist tools in my practical work and my choices are justified. I justify the reasons for my choice of materials/ingredients taking into account their properties. I justify the process that I choose to make my product. I am accurate and precise when I work. I work very safely and can demonstrate clearly and accurately to others. 	<ul style="list-style-type: none"> I compare and contrast existing products by analysing them and explaining how the information I have found will influence my own designs. I understand developments in design and technology. I can test, evaluate and refine my ideas and products against a specification. I take into account the views of intended users and other interest groups. I understand the responsibilities of designers, engineers and technologists and clearly show this in my work. I can evaluate the impact of my product and individuals, society and the environment. 	<ul style="list-style-type: none"> I have a thorough understanding of the uses and properties of materials to achieve functioning solutions. I understand how the extraction and use of materials impacts the environment, how to reduce the risk and can incorporate this into my own designs. I understand how electrical and electronic systems can be powered and used in associated products. I understand how mechanical systems are used in my product to enable changes in movement and force. I can explain designer's/design movement's work and the key design principles, using them to inform and inspire my work. I apply computing and use electronics in my product that responds to inputs and control output using programmable components. 	<ul style="list-style-type: none"> I understand and apply the principles of nutrition and health. I can confidently cook a wide range savoury dishes so that I will be able to feed myself and others a healthy and varied diet. I am competent and confident in a range of cooking techniques. For example: selecting and preparing ingredients, using utensils and electrical equipment, applying heat in different ways, using awareness of taste, texture and smell to decide how to season dishes and combine ingredients adapting and using my own recipe. I understand the source, seasonality and characteristics of a range of ingredients.
<p align="center">+ Mastering (Projected Grades 6 - 8 at GCSE)</p>	<ul style="list-style-type: none"> I understand social, moral, and cultural issues that link to the users needs. I can identify and solve a design situation with a broad design brief that allows me to be creative. I have developed a detailed design specification considering a wide range of criteria. I use research to inform my designs and have creative responses to the design brief. I have detailed planning for my final design. 	<ul style="list-style-type: none"> I can select the correct tools in my practical work and explain their function. I make good choices when I select materials. I am accurate in my work. I can explain the best processes to use when manufacturing. I work safely and can help others in their practical work. 	<ul style="list-style-type: none"> I analyse existing products and this to develop my own ideas. I can explain how new technologies will enhance my design and how they impact the user and the environment. I can test and evaluate my final product against my specification and improve on my product as a result. I know what my responsibility is as a designer and show this in my work. I understand the impact of my product on individuals, society and the environment. 	<ul style="list-style-type: none"> I understand and use the properties of materials to achieve functioning solutions. I understand how the extraction and use of some materials impacts the environment and how to reduce the risk. I understand how electrical and electronic systems can be powered and used in their products. I understand how mechanical systems are used in my product to enable changes in movement and force. I can explain designer's/design movement's work and the key design principles. I apply computing and use electronics in my product that responds to inputs and control output. 	<ul style="list-style-type: none"> I understand the principles of nutrition and health. I can cook a range of savoury dishes so that I will be able to feed myself and others a healthy and varied diet. I am competent in a range of cooking techniques . For example : selecting and preparing ingredients, using utensils and electrical equipment, applying heat in different ways, awareness of taste, texture and smell and how to combine ingredients, adapting recipes. I understand the seasonality and characteristics of a range of ingredients.

Key Stage 3 Descriptors	Descriptors of Key Knowledge Skills and Understanding for Key Stage 3 What do pupils know and what can they do?				
	DESIGN	MAKE	EVALUATE	TECHNICAL KNOWLEDGE	COOKING & NUTRITION
+ Securing - (Projected Grades 3 - 5 at GCSE)	<ul style="list-style-type: none"> I use research to identify the users needs. I can identify a design situation write a design brief. I use research to write a detailed design specification. I use a variety of methods to develop and improve design ideas e.g. CAD, modelling (4+ ideas). My annotation is detailed and I have a plan to make my final design. I neatly sketch my ideas. 	<ul style="list-style-type: none"> I can name the tools I use. I can name the materials/ingredients I use. I can name the processes I use in my practical work. My work is mostly accurate. I work safely. 	<ul style="list-style-type: none"> I look at existing products and use this to develop my own ideas. I know about new technology and how they can help my designs and the user of the product. I can test and evaluate my final product against my specification. I understand what my responsibility as a designer is and show this in my work. I understand how my product can impact the environment and the user. 	<ul style="list-style-type: none"> I understand the properties of some materials and know how they might benefit my product. I understand how the extraction and use of some materials impacts the environment. I understand about some mechanical systems. I understand some electrical and electronic systems. I know about designers/design movements. I understand how to apply some computing, what an input and output is and how to use it in my work. 	<ul style="list-style-type: none"> I understand the key terms nutrition and health. I can cook some savoury dishes so that I will be able to feed myself and others a healthy and varied diet. I am confident in some cooking techniques. For example: selecting and preparing ingredients, using utensils and electrical equipment, applying heat in different ways, awareness of taste, texture and smell and how to combine ingredients, adapting recipes.
+ Developing - (Projected Grades 1 - 2 at GCSE)	<ul style="list-style-type: none"> I understand the design brief and user needs. I understand what a design specification is and how to write a basic one. I can come up with 4 different ideas and develop them so they are improved. My ideas are sketched and annotated. 	<ul style="list-style-type: none"> I can name some of the tools I use. I can name some of the materials I use. I can name some of the processes I use in my practical work. On occasion my work is accurate. I work safely. 	<ul style="list-style-type: none"> I look at other products on the market to help me with my ideas. I know a bit about new technologies and how they can help the user. I can evaluate my work against my specification. I know what some of the responsibilities as a designer are and show this in my work. I understand how my product can impact the user. 	<ul style="list-style-type: none"> I understand the properties of some materials. I understand a little about the environmental impact of some materials. I understand a little about CAD CAM. I understand a little about mechanical systems. I understand a little about electronic systems. I understand a little about designers/design movements. I understand a little about computing and know what an input and output is. 	<ul style="list-style-type: none"> I understand a little about the key terms: nutrition and health. I can cook some savoury dishes so that I will be able to feed myself and others. I am confident in some cooking techniques. For example: preparing ingredients, using utensils and electrical equipment, applying heat in different ways. I understand the purpose of some ingredients.

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	DESIGN	MAKE	EVALUATE	TECHNICAL KNOWLEDGE	COOKING & NUTRITION
Emerging + (Below GCSE Grading)	<ul style="list-style-type: none"> I have some understanding of the design brief and user needs. I have some understanding of what a design specification is and how to write a basic one. I can come up with some ideas and develop them so they are improved but I often get design fixation. My ideas are sketched with limited annotations. 	<p>At this stage:</p> <ul style="list-style-type: none"> I can name a few of the tools I use. I can name a few of the materials I use. I can name a few of the processes I use in my practical work. My work is accurate on occasion. I work safely but sometimes require assistance. 	<ul style="list-style-type: none"> I can look at other products on the market to help me with my ideas but often copy existing work. I have limited understanding of new technologies and how they can help the user. I can carry out a basic evaluation of my work against my specification. I have some understanding of what the responsibilities as a designer are and occasionally show this in my work. I have some understanding of how my product can impact the user. 	<p>At this stage:</p> <ul style="list-style-type: none"> I understand the properties of some materials. I have some understanding of the environmental impact of some materials. I have some understanding of CAD CAM. I have some understanding of mechanical systems. I have some understanding of electronic systems. I have some understanding of designers/design movements. I have some understanding of computing and know what an input and output is. I find it hard to write my answers but can articulate them with some prompts. 	<ul style="list-style-type: none"> I have some understanding of nutrition and health. I can cook some savoury dishes with assistance. I have some confidence in some cooking techniques for example preparing ingredients, using utensils and electrical equipment, applying heat in different ways but often require assistance. I have some understanding of the purpose of some ingredients.



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KEY STAGE 4 Y10 - Y11



ASSESSMENT STEPS



Design & Technology

Grade Descriptors for Key Stage 4

Key Stage 4 Descriptors	Grade Descriptors for Key Stage 4			
	AO1	AO2	AO3	AO4
8-9	<ul style="list-style-type: none"> • Design possibilities identified and thoroughly explored, directly linked to a contextual challenge demonstrating excellent understanding of the problems/opportunities. • A user/client has been clearly identified and is entirely relevant in all aspects to the contextual challenge and pupil has undertaken a comprehensive investigation of their needs and wants, with a clear explanation and justification of all aspects of these. • Comprehensive investigation into the work of others that clearly informs ideas. • Excellent design focus and full understanding of the impact on society including; economic and social effects. • Extensive evidence that investigation of design possibilities has taken place throughout the project with excellent justification and understanding of possibilities identified. • Comprehensive design brief which clearly justifies how they have considered their user/client's needs and wants and links directly to the context selected. • Comprehensive design specification with very high level of justification linking to the needs and wants of the client/user. Fully informs subsequent design stages. 	<ul style="list-style-type: none"> • Imaginative, creative and innovative ideas have been generated, fully avoiding design fixation and with full consideration of functionality, aesthetics and innovation. • Ideas have been generated, that take full account of on-going investigation that is both fully relevant and focused. Extensive experimentation and excellent communication is evident, using a wide range of techniques. Imaginative use of different design strategies for different purposes and as part of a fully integrated approach to designing. • Very detailed development work is evident, using a wide range of 2D/3D techniques (including CAD where appropriate) in order to develop a prototype. Excellent modelling, using a wide variety of methods to test their design ideas, fully meeting all requirements. • Fully appropriate materials/components selected with extensive research into their working properties and availability. Fully detailed manufacturing specification is produced with comprehensive justification to inform manufacture. • The correct tools, materials and equipment (including CAM where appropriate) have been consistently used or operated safely with an exceptionally high level of skill. A high level of quality control is evident to ensure the prototype is accurate by consistently applying very close tolerances. • Prototype shows an exceptionally high level of making/finishing skills that are fully consistent and appropriate to the desired outcome. An exceptionally high quality prototype that has the potential to be commercially viable has been produced and fully meets the needs of the client/user. 	<ul style="list-style-type: none"> • Extensive evidence that various iterations are as a direct result of considerations linked to testing, analysis and evaluation of the prototype, including well considered feedback from third parties. • Comprehensive testing of all aspects of the final prototype against the design brief and specification. • Fully detailed and justified reference is made to any modifications both proposed and undertaken. • Excellent ongoing analysis and evaluation evident throughout the project that clearly influences the design brief and the design and manufacturing specifications. 	<ul style="list-style-type: none"> • Demonstrates and effectively applies comprehensive knowledge and understanding of the principles of design and technology in a range of familiar and unfamiliar situations. • Effectively employs sophisticated technical language and a range of communication methods such as schematic and exploded diagrams, and mathematical modelling. • Use a range of mathematical skills and scientific knowledge to make accurate calculations and inform choices.

Grade Descriptors for Key Stage 4

Key Stage 4 Descriptors	Grade Descriptors for Key Stage 4			
	AO1	AO2	AO3	AO4
6-7	<ul style="list-style-type: none"> • Design possibilities identified and explored, linked to a contextual challenge demonstrating a good understanding of the problems/opportunities. • A user/client has been identified that is mostly relevant to the contextual challenge and pupil has undertaken an investigation of their needs and wants, with a good explanation and justification of most aspects of these. • Detailed investigation into the work of others that has influenced ideas. • Good design focus and understanding of the impact on society including; economic and social effects. Evidence of investigation of design possibilities at various stages in the project with good justification and understanding of possibilities identified. • Good design brief with an attempt to justify how they have considered most of their client's needs and wants and has clear links to the context selected. • Detailed design specification with good justification linking to the needs and wants of the client/user. Largely informs subsequent design stages. 	<ul style="list-style-type: none"> • Imaginative and creative ideas have been generated which mainly avoid design fixation and have adequate consideration of functionality, aesthetics and innovation. Ideas have been generated, taking into account on-going investigation that is relevant and focused. • Good experimentation and communication is evident, using a wide range of techniques. Effective use of different design strategies for different purposes as an approach to designing. • Good development work is evident, using a range of 2D/3D techniques (including CAD where appropriate) in order to develop a prototype. Good modelling which uses a variety of methods to test their design ideas, largely meeting requirements. • Materials/components selected are mostly appropriate with good research into their working properties and availability. Largely detailed manufacturing specification is produced with good justification to inform manufacture. • The correct tools, materials and equipment (including CAM where appropriate) have been used or operated safely with a good level, of skill. • Detailed quality control is evident to ensure the prototype is mostly accurate through partial application of tolerances. • Prototype shows a good level of making/finishing skills that are largely consistent and appropriate to the desired outcome. A good quality prototype that may have potential to be commercially viable has been produced which mostly meets the needs of the client/user. 	<ul style="list-style-type: none"> • Good evidence that various iterations are as a result of considerations linked to testing, analysis and evaluation of the prototype, including some consideration of feedback from third parties. • Good testing of most aspects of the final prototype against the design brief and specification. • Detailed reference is made to any modifications either proposed or undertaken. • Good analysis and evaluation at most stages of the project that influences the design brief and the design and manufacturing specifications. 	<ul style="list-style-type: none"> • Demonstrates and effectively apply sound knowledge and understanding of the principles of design and technology in a range of familiar and unfamiliar situations. • Effectively employs technical language and a range of communication methods such as schematic and exploded diagrams, and mathematical modelling • Uses a range of mathematical skills and scientific knowledge to make mostly accurate calculations and inform choices.

Grade Descriptors for Key Stage 4

Key Stage 4 Descriptors	Grade Descriptors for Key Stage 4			
	AO1	AO2	AO3	AO4
3-5	<ul style="list-style-type: none"> • Design possibilities identified and explored with some link to a contextual challenge demonstrating adequate understanding of the problems/ opportunities. • A user/client has been identified that is partially relevant to the contextual challenge. • pupil has undertaken an investigation of their needs and wants, with some explanation and justification of some aspects of these. • Some investigation into the work of others that has had some influence on their ideas. • Some design focus and understanding of the impact on society including; economic and social effects. • Investigation of design possibilities goes beyond the initial stages of the project but only some justification and understanding of possibilities identified. • Adequate design brief with some consideration of their client’s needs and wants is evident, as is the relevance to the context selected. • Adequate design specification lacking some detail. Some justification linking to the needs and wants of the client/user. Informs subsequent design stages to some extent. 	<ul style="list-style-type: none"> • Imaginative ideas have been generated with a degree of design fixation and having some consideration of functionality, aesthetics and innovation. • Ideas have been generated that take some account of investigations carried out but may lack relevance and/or focus. • Experimentation is sufficient to generate a range of ideas. Communication is evident, using a range of techniques. • Different design strategies explored but only at a superficial level with the approach tending to be fairly narrow. • Development work is sufficient, using some 2D/3D techniques (including CAD where appropriate) in order to develop a prototype. • Modelling is sufficient, using a variety of methods to test their design ideas, meeting some requirements. • Materials/components selected with some research into their working properties and availability. Some of these may not be fully appropriate for purpose. Adequate manufacturing specification contains sufficient detail with some justification to inform manufacture. 	<ul style="list-style-type: none"> • Some evidence that various iterations are as a result of considerations linked to testing, analysis and evaluation of the prototype, including basic consideration of feedback from third parties. • Adequate testing of some aspects of the final prototype against the design brief and specification. • Some reference is made to modifications either proposed or undertaken. • Adequate analysis and evaluation is present at some stages of the project but does not have sufficient influence on the design brief and the design and manufacturing specifications. 	<ul style="list-style-type: none"> • Demonstrate and apply mostly accurate and appropriate knowledge and understanding of the principles of design and technology in familiar and some unfamiliar situations. • Use appropriate technical language and methods of communication, such as formal drawings and annotated sketches. • Use some mathematical skills and scientific knowledge to make mostly accurate calculations and inform choices.

Key Stage 4 Descriptors		Grade Descriptors for Key Stage 4			
		AO1 - Identify, investigate and outline design possibilities to address needs and wants	AO2: Design and make prototypes that are fit for purpose.	AO3: Analyse and evaluate	AO4: Demonstrate and apply knowledge and understanding
1-2	<ul style="list-style-type: none"> • Basic design possibilities identified. Link to a context is unclear. • An attempt to identify a user/client. Not relevant to the contextual challenge. Basic investigation of their needs and wants, but little explanation. • Basic investigation into the work of others does not inform ideas. • Limited design focus and impact on society. • Investigation of design possibilities only takes place in the initial stages and there is very little justification and understanding of possibilities identified. • Basic design brief that contains only limited consideration of their client's needs and wants and has little or no relevance to the context selected. Basic design specification has minimal detail. Limited justification linking to the needs and wants of the client/user. Very little influence on subsequent design stages. 	<ul style="list-style-type: none"> • Basic ideas have been generated with clear design fixation and limited consideration of functionality, aesthetics and innovation. • Ideas generated taking little or no account of investigations carried out. • Basic experimentation and communication is evident, using a limited number of techniques. Basic use of a single design strategy. • Basic development work is evident, using a limited range of 2D/3D techniques (including CAD where appropriate) in order to develop a prototype. • Modelling is basic, using a limited number of methods to test their design ideas meeting requirements only superficially. • Materials/components selected with minimal research into their working properties or availability and may not be fully fit for purpose. Basic manufacturing specification that lacks detail and has minimal justification to inform manufacture. • Tools, materials and equipment (including CAM where appropriate) have been used or operated safely at a basic level. Basic quality control is evident through measurement only. Prototype shows a basic level of making/finishing skills which may not be appropriate for the desired outcome. A prototype of basic quality has been produced with little or no potential to be commercially viable and does not meet the needs of the client/user. 	<ul style="list-style-type: none"> • Limited evidence that various iterations are as a result of considerations linked to testing, analysis and evaluation of the prototype. • Basic testing of some aspects of the final prototype against the design brief and specification. • Little reference is made to any modifications either proposed or undertaken. • Superficial analysis and evaluation. • Little influence on the design brief and the design and manufacturing specifications. 	<ul style="list-style-type: none"> • Demonstrate and apply basic knowledge and understanding of the principles of design and technology in familiar situations. • Use everyday language and simple drawings or sketches to explain an idea. • Use some simple mathematical skills and scientific knowledge to make basic calculations. 	