Qualification specification

NCFE Level 1/2 Technical Award in Creative Design and Production
QN: 603/7003/8

Qualification summary

Qualification title	NCFE Level 1/2 Technical Award in Creative Design and Production		
Ofqual qualification number (QN)	603/7003/8	**Aim reference**	60370038
Guided learning hours (GLH)	138	**Total qualification time (TQT)**	152
Minimum age	14		
Qualification purpose	This qualification is part of a suite of technical award qualifications that have been developed to meet the Department for Education's (DfE's) requirements for high-quality, rigorous qualifications that: • have appropriate content for the learner to acquire core knowledge and practical skills • allow the qualification to be graded • provide synoptic assessment • enable progression to a range of study and employment opportunities		
Grading	Level 1 pass/merit/distinction Level 2 pass/merit/distinction/distinction*		
Assessment method	Externally-set: non-exam assessment (NEA) and an examined assessment (EA)		
Performance points	Please check with the DfE for the most up-to-date information, should there be any changes		

Contents

Section 1: introduction

Please note this is a draft version of the qualification specification and is likely to be subject to change before the final version is produced for the launch of the qualification.

If you are using this qualification specification for planning purposes, please make sure that you are using the most recent version.

Aims and objectives

This qualification aims to:

- focus on the study of creative design and production in the design and production industry
- offer breadth and depth of study, incorporating a key core of knowledge
- provide opportunities to acquire a number of practical and technical skills

The objectives of this qualification are to:

- place design and production in context
- understand design materials and processes
- understand design brief and production processes
- prepare for the presentation of a design solution
- undertake a review of processes and final solution
- explore working in the design production industries

Support handbook

This qualification specification must be used alongside the mandatory support handbook on the qualifications page on the NCFE website, which contains additional supporting information to help with the planning, delivery and assessment.

This qualification specification contains all of the qualification-specific information you will need that is not covered in the support handbook.

Entry guidance

This qualification is designed for learners aged 14 to 16 in schools and colleges, but is also accessible for post-16 learners.

It is a vocational qualification equivalent to GCSE grades 8.5 to 1.

There are no specific prior skills/knowledge a learner must have for this qualification.

Entry is at the discretion of the centre.

Centres are responsible for ensuring that all learners are capable of achieving the learning outcomes and complying with the relevant literacy, numeracy and health and safety requirements.

Learners registered on this qualification should not undertake another qualification at the same level, or with the same/a similar title, as duplication of learning may affect funding eligibility.

Achieving this qualification

To be awarded this qualification, learners are required to successfully achieve all learning outcomes from the single graded mandatory unit.

Qualification title		NCFE Level 1/2 Technical Award in Creative Design and Production
Qualification number (QN)		603/7003/8
Level		Combined level 1/2
Guided learning hours (GLH) (Total GLH has been rounded up to the nearest hour)		138
GLH breakdown		• 120 hours delivery • 1 hour 30 minutes examined assessment • 16 hours non-exam assessment
Non-exam assessment (NEA)	Weighting (60%)	Externally-set, internally marked and externally moderated: • synoptic project
Examined assessment (EA)	Weighting (40%)	Externally-set and externally marked: • written exam
Total	100%	Overall qualification grades: L1P, L1M, L1D, L2P, L2M, L2D, L2D*

Please refer to the content area summaries in section 2 for further information.

To achieve this qualification, learners must successfully demonstrate their achievement of all learning outcomes of the units as detailed in this qualification specification.

Progression

Depending on the grade the learner achieves in this qualification, they could progress to level 2 and level 3 qualifications and/or GCSE/A Levels.

Learners who achieve at level 1 might consider progression to level 2 qualifications post-16, such as:

- GCSE Design and Technology
- study at level 2 in a range of technical routes that have been designed for progression to employment, apprenticeships and further study; examples might include a Level 2 Technical Certificate in Design Production

Technical certificate qualifications provide post-16 learners with the knowledge and skills they need for skilled employment or for further technical study.

Learners who achieve at level 2 might consider progression to level 3 qualifications post-16, such as:

- A Level Design and Technology (this will support progression to higher education)
- Level 3 Applied General Certificate in Art and Design
- study at level 2 in a range of technical routes that have been designed for progression to employment, apprenticeships, and further study
- Level 3 Technical Level in Engineering: Design (this will support progression to higher education)
- Level 3 Technical Level in Art and Design (this will support progression to higher education)

- T Level in Design and Development for Engineering and Manufacturing (this will support progression to higher education)

Learners could also progress into employment or onto an apprenticeship. The understanding and skills gained through this qualification could be useful to progress onto an apprenticeship in the industry through a variety of occupations that are available within the industry, such as interior designer, design studio assistant or furniture maker.

Staffing requirements

There are no additional staffing requirements for this qualification. See the staffing requirements section in the support handbook.

Resource requirements

There are no mandatory resource requirements for this qualification, but centres must ensure learners have access to suitable resources to enable them to cover all the appropriate learning outcomes.

Real work environment requirement/recommendation

This is a knowledge-only qualification. Experience in the real work environment is not required.

Work/industry placement experience

This is a knowledge-only qualification. Work/industry placement experience is not required.

Purpose statement

Who is this qualification for?

The Level 1/2 Technical Award in Creative Design and Production is designed for learners who want an introduction to design and production that includes a vocational and project-based element, approached from a creative perspective with regular opportunities to experiment and create. This qualification will appeal to learners who wish to pursue a career in the design and production sector or progress to further study.

The Level 1/2 Technical Award in Creative Design and Production complements GCSE qualifications. It is aimed at 14 to 16 year olds studying key stage 4 (KS4) curriculum who are interested in the design and production sector. This qualification is designed to match the rigour and challenge of GCSE study. The qualification is graded at level 1 pass, merit, distinction and level 2 pass, merit, distinction and distinction* (equivalent to GCSE grades 8.5 to 1). More information on grading can be found in section 2 of this qualification specification.

This qualification focuses on an applied study of design and production and learners will gain a broad knowledge and understanding of working in the sector.

This qualification has been designed to sit alongside the requirements of core GCSE subjects and is appropriate for learners who are motivated and challenged by learning through hands-on experiences and through content that is concrete and directly related to those experiences.

It is distinct from GCSE Design and Technology, as it gives the learner a strong foundation of contextual knowledge upon which they are encouraged to build a variety of skills through creative experimentation. It incorporates practical skills through hands-on experiences, alongside a wider understanding of employment/career opportunities and promotion skills, which develops the learner's understanding of the design and production sector more widely

This level 1/2 qualification is appropriate for learners who are looking to develop a significant core of knowledge and understanding in creative design and production and apply that knowledge through a project.

What will the learner study as part of this qualification?

This qualification will promote the learner's understanding of:

- design and production in context:
  - including design movements and design principles
- design materials and processes:
  - including investigating materials, the design process and digital design and manufacture opportunities
- design brief and production processes:
  - including interpreting a design brief and communication skills
- presentation of a design solution:
  - including purposes and methods of presentation, and presentation skills
- review of processes and final solution:
  - including review of the process and summative review
- working in the design production sector:
  - including employment and career opportunities, product promotion and self-promotion.

What knowledge and skills will the learner develop as part of this qualification and how might these be of use and value in further studies?

Learners will develop the following knowledge and skills:

- developing their own ideas and adapting in response to feedback
- evaluating their own work
- independent working
- working to deadlines
- entrepreneurial skills, including self-promotion
- communication skills

Successful completion of this qualification will enable learners to progress to level 2 or level 3 qualifications in related subjects.

The knowledge and skills gained will provide a secure foundation for careers in the design and production sector.

Learners will develop the following skills that will inform future training and work in the design and production sector:

- decision making
- observation
- resourcefulness
- problem solving
- planning
- evaluation
- reflection
- interpersonal skills
- professional behaviours
- respect and appreciation of others
- an ability to reflect upon their preferred learning style and identify relevant study skills

Successful completion of this qualification will enable learners to progress to level 2 or level 3 qualifications in related subjects.

The knowledge and skills gained will provide a secure foundation for learners to progress into career opportunities in the design and production sector and provide a valuable platform for further study.

Which subjects will complement this course?

The following subject areas will complement this course:

- maths
- English
- art and design
- history
- science

This list is not exhaustive, and a range of other subject areas may also be appropriate.

How the qualification is assessed

Assessment is the process of measuring a learner's skill, knowledge and understanding against the standards set in a qualification.

The qualification has **2** assessments externally-set by NCFE: **one** non-exam assessment and **one** written examined assessment.

Non-exam assessment	
Assessment method	**Description**
Non-exam assessment Externally-set Internally marked and externally moderated	60% of the technical award 120 marks The completion time for the non-exam assessment is 16 hours. The non-exam assessment will assess the learner's ability to effectively draw together their knowledge, understanding and skills from across the whole vocational area. The non-exam assessment will target assessment objectives (AOs) AO1, AO2, AO3, AO4 and AO5.
Non-exam assessment availability	The learner should not undertake the non-exam assessment until all content areas have been delivered. This is to ensure learners are in a position to complete the non-exam assessment successfully. A different non-exam assessment brief will be released every September.

Non-exam assessment

Non-exam assessment encourages the learner to combine elements of their learning and to show accumulated knowledge and understanding across the content areas.

Non-exam assessment enables the learner to show their ability to integrate and apply knowledge, understanding and skills with breadth and depth. It also requires them to demonstrate their capability to apply knowledge, understanding and skills across a range of units and learning outcomes that are being assessed.

The non-exam assessment is internally assessed work and should be completed by the learner in accordance with the qualification specification. Information on delivery guidance and assessment hours for the internal assessment will be available in the non-exam assessment brief. To support with this, we

have also created a sample non-exam assessment brief, which is available on the qualification page under support materials. A representative number of assessment hours should be timetabled into the scheme of work. Internal assessment hours must be administered outside of scheduled teaching and learning hours and should be supervised and assessed by the teacher.

Any work submitted for internal assessment must be completed during scheduled assessment hours in accordance with the scheme of work and must be authenticated and attributable to the learner. The teacher must be satisfied that the work produced is the learner's own and the learner must declare that the work is their own.

In practice, this means that all of the non-exam assessment will be completed in normal class time within scheduled assessment hours and kept separate from any teaching and learning hours.

The internally assessed non-exam assessment component is based on coverage of the qualification content areas, which are assessed holistically against descriptors to achieve a grade.

Each learner must create a portfolio of evidence generated from appropriate assessment tasks that demonstrates achievement of all the learning outcomes associated with each unit. The assessment tasks should allow the learner to respond to a real-life situation that they may face when in employment. On completion of each unit, learners must declare that the work produced is their own and the assessor must countersign this. Examples of suitable evidence for the portfolio for each unit are provided in section 2.

Examined assessment	
Assessment method	**Description**
Examined assessment Externally-set Written examination Externally marked	40% of technical award Written examination: • 80 marks • 1 hour 30 minutes • a mixture of multiple-choice, short-answer, and extended response questions The written examined assessment is a terminal assessment and will assess the learner's knowledge and understanding of all content areas and target assessment objectives AO1, AO2 and AO3.
Examined assessment availability	The examination date is expected to take place in May/June every year. Please refer to the external assessment timetable available on the NCFE website.

Examined assessment

Examined assessments are set and marked by NCFE. The assessment assesses learners' knowledge and understanding of the content areas of this qualification. Centres must not assess, internally quality assure, or otherwise access or review any examined assessment materials or learner responses at any time and must adhere to the required exam regulations at all times.

The examined assessment is on a set date and time (invigilated). NCFE specifies the date and time that the examined assessment must be administered in the centre and also publishes in advance the dates on which external assessment results will be released.

A variety of assessment questions will be used, including multiple-choice, short-answer and extended response questions. This will enable learners to demonstrate their breadth of knowledge and understanding of the subject and ensure achievement at the appropriate level, including stretch and challenge. Questions will be written in plain English and in a way that is supportive and accessible to learners of all abilities.

As far as possible, real-world case studies and contexts that are relevant to the sector will be used. This is to engage and stimulate learners under examination conditions and to facilitate the drawing out of a wide range of knowledge and skills developed throughout their learning.

All questions will have available marks clearly identified. The examined assessment will be carefully constructed following a rigorous quality control process to ensure that the assessment is valid.

For further information, including instructions for conducting an external assessment, centres must ensure they have read/are familiar with the regulations for the conduct of external assessment, and qualification specific instructions for delivery documents available on the policies & documents page on the NCFE website.

The examined assessment material will be sent out in time for the start of the assessment. Assessment materials must be kept secure at all times in line with the requirement of the regulations for the conduct of external assessment.

You must return all examined assessment materials and partially or fully completed learner work to NCFE within one working day of the examined assessment taking place or the final timetabled supervised/invigilated session.

Rationale for synoptic assessment

Synoptic assessment encourages the learner to combine elements of their learning and to show accumulated knowledge and understanding across units and/or learning outcomes.

Synoptic assessment enables the learner to show their ability to integrate and apply knowledge, understanding and skills with breadth and depth. It also requires them to demonstrate their capability to apply knowledge, understanding and skills across a range of units and learning outcomes that are being assessed.

Enquiries about results

All enquiries relating to learners' results must be submitted in line with our enquiries and appeals about results and assessment decisions policy, which is available on the policies and documents page on the NCFE website.

External assessment conditions

For more information on external assessment conditions, please see the regulations for the conduct of external assessments and qualification specific instructions for delivery on the policies & documents page on the NCFE website.

There is one assessment window during the year. Please refer to the external assessment timetable on the NCFE website for the specific date.

For instructions on conducting external assessments, please refer to our regulations for the conduct of external assessments and qualification specific instructions for delivery documents, available on the policies & documents page on the NCFE website.

Assessment windows

For assessments sat in windows, the centre must enter learners to the specified window. This will be either a set date and time assessment or a window in which the assessment will be completed.

For qualifications with 'entry on registration', the centre will choose the assessment window at the point of registering the learner. The last date that we will accept learner work for a specified assessment window is by that assessment window's cut-off date.

Please note: the 'cut-off date' is the last day that returned scripts will be accepted for the specified assessment window.

On completing their work at the end of the assessment window, learners must sign the assessment declaration to authenticate the work produced as their own. Centres must ensure that all assessments are submitted for marking in accordance with the assessment windows.

Scheme of assessment

The Level 1/2 Technical Award in Engineering qualification is made up of 2 component parts: an examined assessment (EA) and a non-exam assessment (NEA).

Assessments	Assessment time	% weighting	Raw marks	Scaling factor	Scaled marks*	Assessment conditions	Marking
Non-exam assessment (NEA)	16 hours	60%	96	1.250	120	Supervised	Internal, with external moderation
Examined assessment (EA)	1 hour 30 minutes	40%	80	1.000	80	Invigilated	External
Assessment total	**17 hours 30 minutes**	**100%**			200		

Assessment objectives

The assessment of our technical awards is mapped against assessment objectives (AOs). These AOs provide a consistent framework for learners and are applied synoptically, allowing learners to show their knowledge, understanding and skills from across the full breadth and depth of the qualification.

The AOs that will be assessed against the content in our technical awards are:

AO1	**Recall knowledge and show understanding** The emphasis here is for learners to recall and communicate the fundamental elements of knowledge and understanding.
AO2	**Apply knowledge and understanding** The emphasis here is for learners to apply their knowledge and understanding to real-world contexts and novel situations.
AO3	**Analyse and evaluate knowledge and understanding** The emphasis here is for learners to develop analytical thinking skills to make reasoned judgements and reach conclusions
AO4	**Demonstrate the application of relevant technical skills, techniques and processes** The emphasis here is for learners to demonstrate the essential technical skills relevant to the vocational sector by applying the appropriate processes, tools and techniques
AO5	**Analyse and evaluate the demonstration of relevant technical skills, techniques and processes** The emphasis here is for learners to analyse and evaluate the essential technical skills, processes, tools and techniques relevant to the vocational sector

Assessment objective weightings

The table below shows the approximate weightings for each of the AOs in the technical award assessments.

AOs	Non-exam assessment (%)	Examined assessment (%)	Overall weighting (%)
AO1	12.5%	40–45%	23.5–25.5%
AO2	12.5%	35–40%	21.5–23.5%
AO3	12.5%	20–25%	15.5–17.5%
AO4	33.3%	N/A	20%
AO5	29.2%	N/A	17.5%
Overall weighting of assessments	**60%**	**40%**	**100%**

The purpose of the qualification means that it is necessary to assess understanding through 2 means of assessment, an internal non-exam assessment (NEA) and an external examined assessment (EA). The variance in assessment methods used allows for a range of knowledge, understanding and skills to be assessed using the most fit for purpose method.

Non-exam assessment

Refer to the mark scheme for the current non-exam assessment where you will find the information required to mark the non-exam assessment tasks and their descriptors.

Centres will mark the non-exam assessment, and this will then be submitted to NCFE for moderation.

Examined assessment

The examined assessment will be submitted to NCFE for marking to calculate the overall grades for learners.

Overall grading descriptors

To achieve a level 2 distinction learners will be able to:

- recall and apply highly relevant knowledge and understanding in an excellent and highly comprehensive manner of design and production in context, materials, design briefs and production processes, presentation and review of design solutions, and working in the design production industries
- critically analyse and evaluate, to make excellent, reasoned judgements and reach well-supported conclusions on design and production in context, materials, design briefs and production processes, presentation and review of design solutions, and working in the design production industries
- safely and effectively demonstrate essential and excellent skills, techniques and processes, relevant to the sector, when using a wide range of materials, digital design opportunities, graphical communication, production processes and techniques, and research methods
- critically analyse and evaluate their own demonstration of relevant skills, techniques and processes relevant to the sector when creating designs, production processes (including creating prototypes), design principles and design production industry skills, in an excellent and highly comprehensive manner

To achieve a level 2 pass learners will be able to:

- recall and apply mostly relevant knowledge and understanding in a good and mostly detailed manner of design and production in context, materials, design briefs and production processes, presentation and review of design solutions, and working in the design production industries
- analyse and evaluate, to make good, mostly reasoned judgements and reach coherent conclusions on design and production in context, materials, design briefs and production processes, presentation and review of design solutions, and working in the design production industries
- safely and effectively demonstrate good and mostly relevant skills, techniques and processes, relevant to the sector, when using a range of materials, digital design opportunities, graphical communication, production processes and techniques, and research methods
- analyse and evaluate their own demonstration of relevant skills, techniques and processes, relevant to the sector, when creating designs, production processes (including creating prototypes), design principles and design production industry skills, in a good and mostly detailed manner

To achieve a level 1 pass learner will be able to:

- recall and apply some knowledge and understanding, in a reasonable manner that has some relevance and some detail of design and production in context, materials, design briefs and production processes, presentation and review of design solutions, and working in the design production industries
- analyse and evaluate, in a reasonable manner, to make some judgements and reach straightforward conclusions on design and production in context, materials, design briefs and production processes, presentation and review of design solutions, and working in the design production industries
- safely and effectively demonstrate some skills, techniques and processes, relevant to the sector, in a reasonable manner, when using some materials, digital design opportunities, graphical communication, production processes and techniques, and research methods
- analyse and evaluate their own demonstration of relevant skills, techniques and processes, relevant to the sector, when creating designs, production processes (including creating prototypes), design principles and design production industry skills, in a reasonable, straightforward manner, with some detail

Grading information

The following grades are available for the qualification; level 2 distinction*, level 2 distinction, level 2 merit, level 2 pass, level 1 distinction, level 1 merit and level 1 pass.

The qualification is linear, meaning both assessments must be taken in the same assessment series and cannot be combined across different assessment series. After all assessment is complete, the marks for each assessment are combined to give a final mark for each learner. Where raw marks do not reflect the required weighting of the assessment, a scaling factor is applied to the raw mark prior to aggregation.

Scaling factors can be found in the table below.

Assessment	Maximum raw mark	Weighting	Scaling factor	Maximum scaled mark
Non-exam assessment	96 marks	60%	1.250	120
Examined assessment	80 marks	40%	1.000	80
			Total	200

For each series, grade boundaries are set by NCFE using a variety of statistical and judgemental evidence. Each learner's overall grade is determined by comparing their combined final mark with the grade boundaries for that series.

Where a learner achieves insufficient marks across the 2 assessments in the series to achieve a level 1 pass they will be awarded an unclassified (U) result.

Section 2: unit content and assessment guidance

This section provides details of the structure and content of this qualification.

Information in the teaching content section must be covered by the teacher during the delivery of the content areas and should be considered as mandatory teaching content.

The verb 'understand' encompasses both 'knowledge' and 'understanding' within the content areas of this qualification. Each content area will read 'The learner will understand'.

To make cross-referencing assessment and quality assurance easier, we have used a sequential numbering system in this document for each content area. The numbering system used refers to a content area, subject topic, and teaching content: (for example, 1.1.1 refers to the content area (first number 1), the subject topic within that learning content (second number 1.1) and the teaching content within the subject topic (third number 1.1.1)). This will support signposting feedback and tracking.

Anything within the teaching guidance is advisory and optional and is intended to provide useful advice and guidance to support delivery of the teaching content.

The types of evidence listed are for guidance purposes only. Within learners' portfolios, other types of evidence are acceptable if all content areas are covered.

Whilst studying the qualification, learners should reflect on the importance of knowing and developing their preferred learning style. They should also be able to identify a range of individual study skills they can use in order to study effectively.

For further information or guidance about this qualification, please contact our customer support team.

Content areas

This qualification consists of one unit with multiple content areas.

The regulated unit title is 'Understanding creative design and production'.

The regulated unit number for the qualification content is J/618/6055.

Content area number	Content area title	Suggested GLH
Content area 1	Design and production in context	20
Content area 2	Design materials and processes	30
Content area 3	Design brief and production processes	40
Content area 4	Presentation of a design solution	10
Content area 5	Review of processes and final solution	10
Content area 6	Working in the design production industries	10

Content areas

Content areas
1. Design and production in context 1.1 Design movements 1.2 Design principles 1.3 Environmental impact of a product 1.4 Impact of social factors on a product
2. Design materials and processes 2.1 Investigate materials 2.1.1 Materials 2.1.2 Properties and characteristics 2.1.3 Aesthetics 2.1.4 Surface treatments and finishing techniques 2.1.5 Costs 2.2 Design process 2.3 Digital design and manufacture opportunities 2.3.1 Computer-aided design (CAD) 2.3.2 Computer-aided manufacture (CAM)
3. Design brief and production processes 3.1 Interpreting a design brief 3.2 Design proposal 3.2.1 Design solution process 3.2.2 Design solution presentation 3.3 Communication skills 3.3.1 Client communication skills 3.3.2 Graphical communication skills 3.3.3 Digital communication skills 3.4 Design solution modification in response to feedback 3.5 Production plan 3.6 Production methods, processes and techniques 3.7 Safe working practices
4. Presentation of a design solution 4.1 Purposes of presentation 4.2 Methods of presentation 4.3 Presentation skills for a design solution
5. Review of processes and final solution 5.1 Formative review of design process and production 5.2 Summative review of a final design solution
6. Working in the design production industries 6.1 Employment and career opportunities and skills in the design production industry 6.1.1 Employment and career opportunities 6.1.2 Skills for the design production industry 6.2 Product promotion 6.3 Self-promotion

Teaching content

Information in this section must be covered by the teacher during the delivery of this qualification.

1. Design and production in context

The learner will understand design movements from 1860 to the present day, the key design principles and the impact of environmental and social factors on the production processes for a design outcome.	
1.1	**Design movements**

	The learner will understand the key social factors, features and design practitioners of key design movements from 1860 to the present day:
	
	• Arts and Crafts (circa 1860–1915):
	  ○ key social factors:
	  ▪ reaction to industrialisation
	  ▪ aimed to improve the quality of design
	  ○ key features:
	  ▪ emphasis on nature as a starting point for ideas
	  ▪ often handmade, hand-crafted items which were labour intensive and expensive
	  ▪ wide range of materials (wood, metal, textiles, glass and ceramics)
	  ○ key designers:
	  ▪ William Morris
	  ▪ Charles Voysey
	• Art Nouveau (circa 1880–1914):
	  ○ key social factors:
	  ▪ desire to create 'new' or modern design for all social classes
	  ▪ showcase art for everyday life
	  ○ key features:
	  ▪ natural, organic shapes with floral and plant influences
	  ▪ use of modern materials (iron, glass, ceramics) with wood
	  ▪ asymmetrical or whiplash curved lines
	  ○ key designers:
	  ▪ Louis Comfort Tiffany
	  ▪ Charles Rennie Mackintosh
	• Art Deco (circa 1920–1940):
	  ○ key social factors:
	  ▪ reaction to World War I
	  ▪ Greek, Egyptian and Aztec influences
	  ○ key features:
	  ▪ geometric, angular shapes, flowing circles and curves
	  ▪ elegant, functional, and ultra-modern
	  ○ key designers:
	  ▪ Eileen Gray
	  ▪ René Lalique
	• Bauhaus (circa 1919–1933):
	  ○ key social factors:
	  ▪ aesthetics of fine art applied to everyday items
	  ▪ function over decoration
	  ○ key features:
	  ▪ streamlined design with little or no embellishment or ornamentation
	  ▪ mass production, use of industrial materials

	○ key designers: ▪ Marcel Breuer ▪ Marianne Brandt • Modernism (circa1914-1939): ○ key social factors: ▪ social improvement through functionality and good design ▪ rapid development of cities and modern industrial societies ○ key features: ▪ experimentation with new and old technologies ▪ adoption of technology in daily life ○ key designers: ▪ Ludwig Miles van der Rohe ▪ Alvar Aalto • Memphis (circa 1981–1988): ○ key social factors: ▪ Italian design group described as kitsch, garish and retro ▪ reaction to the design of the 1970s and dominated the 1980s ○ key features: ▪ bold, colourful, unusual pieces ▪ block use of colour, white space ▪ distinctive black lines and repetitive geometric patterns ○ key designers: ▪ Ettore Sottsass ▪ Nathalie du Pasquier • Post-modernism (1945–late 20th century): ○ key social factors: ▪ a broad movement, celebrates the unconventional ▪ a pick-and-mix culture, no single definition of style ○ key features: ▪ links to retro, techno punk and grunge ▪ ridicules convention ○ key designers: ▪ Alberto Alessi ▪ Vivienne Westwood
1.2	**Design principles**
	The learner will understand key design principles, good design and the function and aesthetics of design: • key principles of design: ○ emphasis ▪ focal point of the design ○ balance: ▪ arrangement of different elements: • symmetrical • asymmetrical ○ contrast: ▪ the difference between 2 or more elements in a design ○ harmony: ▪ how elements complement each other to form the design: • similar or related elements • dissimilar or unrelated elements

	○ repetition: ▪ recurrence of a design element ○ texture: ▪ tactility ▪ visual representation ○ proportion: ▪ relative size and scale of elements within a design ○ scale: ▪ sizing of elements in a design ○ movement: ▪ directs the eye of the viewer through different elements of the design ○ space: ▪ the area around, within or between design elements ○ good design: ▪ Dieter Rams' 10 Principles of Good Design: • is innovative • makes a product useful • is aesthetic • makes a product understandable • is unobtrusive • is honest • is long-lasting • is thorough down to the last detail • is environmentally friendly • is as little design as possible ○ how good design influences everyday life: ▪ architecture ▪ fashion ▪ product design ▪ furniture ▪ sustainable design ○ function: ▪ purpose for which a design is developed ▪ theory of form follows function ○ aesthetics: ▪ theory of beauty and taste ▪ visual communication ▪ key factors: • balance • colour • movement • pattern • scale • shape • visual weight ▪ using aesthetics to complement designs' usability ▪ enhance functionality with attractive appearance
1.3	**Environmental impact of a product**
	The learner will understand the product lifecycles of both sustainable and unsustainable designs. The learner will also understand approaches to sustainable design and potential

	impacts of unsustainable design:
	
	• product lifecycles:
	  o inception of the idea
	  o design and manufacture of the product
	  o use of the product
	  o disposal/recycling of the product
	• planned obsolescence:
	  o designed to fail/be replaced after period of use
	• sustainable design:
	  o the 6 Rs:
	  ▪ recycle
	  ▪ reuse
	  ▪ repair
	  ▪ rethink
	  ▪ reduce
	  ▪ refuse
	• unsustainable design:
	  o removal of trees for use in raw materials
	  o loss of habitat for wildlife
	  o finite resources
	  o pollution from manufacturing processes
	  o damage to the environment in resource obtainment
	  o transportation of resources/ecological footprint
	  o damage to the environment in product disposal
	  o pollution from waste materials
	  o increased disposal in landfills

1.4	**Impact of social factors on a product**

	The learner will know and understand how social factors influence design and design products in the past and present:
	
	• social factors:
	  o age
	  o disability
	  o economic status
	  o family size
	  o gender
	  o location

2. Design materials and processes

The learner will understand the properties, characteristics and costs of the materials used in the design process for a range of design production disciplines, including digital design and manufacture processes.	
2.1	**Investigate materials**
	The learner will understand the properties, characteristics, aesthetics, surface treatments, finishing techniques, environmental factors, and costs of materials.
2.1.1	**Materials**
	The learner will understand that designs can be made with a range of materials: • textiles • papers, card and board • wood • plastics • metals • smart materials
2.1.2	**Properties and characteristics**

	The learner will understand properties and characteristics of materials and understand that not all of the properties and characteristics will be present in all materials:
	
	• strength:
	  ○ a material's ability to withstand stresses and strains
	• elasticity:
	  ○ a material's ability to return to its original size and shape
	• plasticity:
	  ○ a solid material's ability to permanently change shape or flow when under stress or strain
	• malleability:
	  ○ a material's ability to bend or shape
	• density:
	  ○ how much space an object or substance takes up (its volume) in relation to the amount of matter in that object or substance (its mass)
	• ductility:
	  ○ the degree to which a material can undergo tensile stress before failure
	• durability:
	  ○ a material's ability to withstand use over time

2.1.3	**Aesthetics**
	The learner will know and understand the aesthetic factors of materials: • finish • colour • texture • form
2.1.4	**Surface treatments and finishing techniques**
	The learner will understand the processes involved for different surface treatments and finishing techniques for a range of materials: • textiles materials: ○ dyeing

	○ printing techniques: ▪ traditional: – screen printing – roller printing – hand block printing ▪ digital printing ○ chemical additives, applied to fabric in order to resist: ▪ flames ▪ water ▪ staining ▪ creasing ○ embroidery techniques: ▪ by hand ▪ digital • papers and boards: ○ printing techniques: ▪ hand ▪ relief ▪ stenciling ▪ embossing ▪ digital ○ painting: ▪ oil-based ▪ water-based ▪ solvent-based ○ applying strengthening/resisting techniques: ▪ spraying ▪ varnishing ▪ laminating ○ collage: ▪ hand ▪ photographs ▪ digital ▪ relief • wood: ○ sanding: ▪ hand ▪ machine ○ painting: ▪ oil-based ▪ water-based ▪ solvent-based ▪ staining ○ varnishing and lacquering ○ preservatives: ▪ oil treatments ▪ waxing • plastics: ○ polish ○ vinyl decals ○ printing

	○ self-finishing • metals: ○ preparation: ▪ dip-coating ▪ powder coating ○ protective: ▪ galvanising ▪ sprays ○ painting: ▪ oil-based ▪ water-based ▪ solvent-based ○ etching ○ engraving • smart materials: ○ increase function ○ thermochromic pigments ○ photochromic pigments ○ shape memory polymer ○ reactive: ▪ changes in the environment ▪ UV protective ○ sensory: ▪ electronic ▪ mechanical ▪ thermal ▪ magnetic
2.1.5	**Costs**
	The learner will understand the costs involved in materials, surface treatments and finishing techniques: • bulk buy costs • one-off purchase cost • bespoke materials costs • staff costs • hidden costs • overheads • specialist hire costs: ○ studio hire ○ equipment hire
2.2	**Design process**
	The learner will understand the stages of the design process, to include defining the need of a product, research purposes and methods, developing ideas, prototyping, testing and redesigning: • defining the need of a product: ○ identify a problem ○ redesign of an existing product ○ brand new product ○ client specification • purpose of research:

	○ to contextualise ○ to inform and inspire design ○ to understand the market ○ to gain feedback from clients and product users ○ to understand sustainability • research methods and techniques: ○ primary: ▪ interviews ▪ real-world observations ▪ questionnaires ▪ work of others ○ secondary: ▪ books ▪ magazines ▪ websites ▪ work of others ○ validity, accuracy, and reliability of sources ○ product analysis ○ potential materials ○ target audience ○ resource availability ○ costs • development of ideas: ○ draft sketches ○ mood boards/colour schemes ○ conceptualisation ○ specifications ○ applying principles of good design ○ form vs function ○ review of initial ideas ○ develop design ideas ○ visual communication of ideas ○ feedback ○ evaluation of ideas ○ modifying design ideas ○ refining design ideas ○ select final design • prototyping: ○ templates ○ model ○ maquette ○ toile ○ mock-up • testing: ○ performance tests ○ simulation testing ○ human testing • redesigning: ○ modify design ideas based on testing ○ finalise design idea

2.3	**Digital design and manufacture opportunities**
	The learner will understand digital design and manufacture processes and techniques, to include computer-aided design (CAD) and computer-aided manufacture (CAM).
2.3.1	**Computer-aided design (CAD)**

	The learner will understand CAD techniques and their application, to include digital design software, advantages and disadvantages:
	
	• digital design software:
	  ○ development of ideas:
	  ▪ conceptual design
	  ▪ virtual modelling
	  ○ working in wireframe:
	  ▪ CAD drawings
	• advantages:
	  ○ fast development of ideas
	  ○ can view designs from all angles
	  ○ designs can be viewed in many materials
	  ○ testing and user feedback can be sought before the design is manufactured
	• disadvantages:
	  ○ high associated setup costs
	  ○ technology can date quickly
	  ○ requires skilled operators

2.3.2	**Computer-aided manufacture (CAM)**

	The learner will understand CAM techniques and their application, to include specialist CAM equipment, advantages and disadvantages:
	
	• CAM techniques:
	  ○ rapid prototyping
	  ○ modelling
	  ○ prototyping
	• specialist CAM equipment:
	  ○ 3D printer
	  ○ laser cutter
	  ○ computer numerical controlled (CNC) miller
	• advantages:
	  ○ fast production
	  ○ accurate production
	  ○ CAM machines can undertake repetitive tasks
	• disadvantages:
	  ○ high associated setup costs
	  ○ requires skilled operators

3. Design brief and production processes

The learner will understand the importance of working in response to design brief requirements. They will understand design proposals and how these are created. The learner will also understand the importance of communication skills and modification of a design solution in response to feedback.	
3.1	**Interpreting a design brief**

	The learner will understand different elements of a design brief, to include interpreting key information, types of client and client needs.
	
	• interpreting key information:
	  ○ product purpose
	  ○ audience
	  ○ resources required
	  ○ constraints
	  ○ budget
	  ○ timescales
	  ○ copyright issues
	• types of client:
	  ○ commercial
	  ○ independent
	  ○ corporate
	  ○ non-profit
	  ○ charity
	  ○ public sector
	• client needs:
	  ○ solve a problem
	  ○ increase sales
	  ○ increase online presence
	  ○ increase product or brand awareness
	  ○ influence behaviour
	  ○ educational

3.2	**Design proposal**
	The learner will understand the stages of the design solution process and how the design solution is presented.
3.2.1	**Design solution process**

	The learner will understand the stages involved in the design solution process:
	
	• design solution process:
	  ○ task analysis
	  ○ research
	  ○ initial ideas
	  ○ idea development
	  ○ financial considerations:
	  ▪ costs associated with the production of designed items
	  ○ health and safety considerations:
	  ▪ risk assessment:
	  • hazards
	  • risks
	  • control measures
	  ▪ personal protective equipment (PPE)
	  ○ final design production.

3.2.2	**Design solution presentation**

	The learner will understand how research and design solutions can be presented, to include presentation format and appropriate information:
	
	• presentation format:
	  ○ physical:
	  ▪ sketches
	  ▪ design notes
	  ○ digital:
	  ▪ word processing
	  ▪ PDF
	  ▪ presentation
	• appropriate information:
	  ○ relevant research results
	  ○ design ideas that meet the design brief

3.3	**Communication skills**
	The learner will understand the importance of effective communication skills that can be used when presenting a design solution in response to a design brief, to include client, graphical and digital communication skills.
3.3.1	**Client communication skills**

	The learner will understand relevant client communication skills, to include effective communication skills and agreeing a design solution:
	
	• effective communication skills:
	  ○ written
	  ○ graphical
	  ○ digital
	  ○ verbal
	  ○ online/virtual
	  ○ face-to-face
	  ○ personal presentation
	  ○ interview
	  ○ survey
	• agreeing a design solution:
	  ○ communicate to the client the creative intentions of the product
	  ○ explain how the target audience will be engaged
	  ○ agree product timeline and milestones
	  ○ agree budget

3.3.2	**Graphical communication skills**

	The learner will understand graphical communication skills, to include techniques, output and qualities:
	
	• techniques:
	  ○ drawing
	  ○ sketching
	• output:
	  ○ diagrams
	  ○ working drawings
	• qualities:
	  ○ isometric
	  ○ oblique

	○ perspective.
3.3.3	**Digital communication skills**
	The learner will understand how to communicate using digital skills, to include client communication and development and presentation of ideas: • digital client communication: ○ email ○ slides ○ video conferencing • digital development and presentation of ideas: ○ modelling ○ prototyping ○ spreadsheets
3.4	**Design solution modification in response to feedback**
	The learner will understand how feedback can impact the modification of design solutions, to include types of feedback: • types of feedback: ○ client ○ audience • review of design ideas: ○ review ideas in response to feedback ○ reject feedback ○ accept feedback • modification of design ideas: ○ refine ideas in response to feedback ○ make improvements ○ review production plans
3.5	**Production plan**
	The learner will understand the purpose of production planning, its stages, and budget requirements: • resources and equipment: ○ physical resources ○ human resources ○ availability of resources ○ subcontracting ○ hire of specialist equipment • time management: ○ milestones ○ review points ○ production deadlines: ○ including testing ○ contingency ○ final deadline ○ pitching final design • production stages: ○ sourcing materials and equipment ○ selection of tools and equipment ○ production techniques and processes to be used ○ testing

	○ quality assurance ○ contingency ○ risk assessments • budget requirements: ○ cost: ▪ material/resource cost ▪ fixed cost ▪ profit/loss ▪ buying cost ○ minimising material use and waste ○ contingency
3.6	**Production methods, processes and techniques**
	The learner will understand a range of production methods, processes, and techniques in response to a design brief using the production plans: • production methods: ○ mass production ○ one off production ○ continuous production ○ just-in-time production ○ batch production ○ bespoke production • production process: ○ using the design proposal to plan production processes ○ risk assessment ○ applying safe working practices ○ source materials ○ creating a prototype ○ testing ○ undertake production techniques ○ quality control: ▪ random sampling ▪ visual ▪ testing ▪ measuring ▪ tolerances ○ quality assurance: ▪ digital designing ▪ computer aided manufacture ▪ templates ▪ jigs ▪ responding to defects ▪ inspection procedures ▪ materials: • buying • testing • checking ○ evaluation throughout the production process • production techniques: ○ cutting, joining and construction techniques ○ forming shape techniques

	○ tools and equipment used for production techniques ○ surface treatments and finishing techniques ○ ongoing review and evaluation: ▪ quality control ▪ quality assurance ○ modifications and refining/making improvements
3.7	**Safe working practices**
	The learner will understand risk management and health and safety requirements when working in design production disciplines, to include personal protective equipment (PPE) at work: • risk assessment: ○ hazards: something that can cause harm ○ risks: the likelihood that the hazard will cause harm ○ control measures: actions, activities and/or equipment used or taken to prevent, eliminate or reduce the risk of a hazard occurring ○ PPE • health and safety legislation: ○ The Management of Health and Safety at Work Regulations 1999 • PPE at work: ○ eyes: ▪ safety goggles ○ ears: ▪ ear plugs ○ head and face: ▪ face shield ▪ face mask ▪ safety helmet ○ hands, arms and feet: ▪ protective gloves ▪ leather gauntlets ▪ steel toe-capped boots ○ lungs: ▪ respiratory filtered system ○ whole body: ▪ disposable overalls ▪ boiler suit ▪ apron

4. Presentation of a design solution

The learner will understand the purposes and methods of presentation, and presentation skills for a design solution.	
4.1	**Purposes of presentation**

	The learner will understand the purposes of presenting design solutions to different types of audiences, to include current customer, potential customer and peers.
	
	• current customer:
	  ○ approval
	  ○ update
	  ○ review:
	  ▪ feedback
	• potential customer:
	  ○ showcase portfolio
	  ○ secure new work
	  ○ display
	• peers:
	  ○ review
	  ○ support
	  ○ evaluating
	  ○ testing

4.2	**Methods of presentation**

	The learner will understand the methods of presentation used when presenting design solutions:
	
	• methods of presentation:
	  ○ digital portfolio
	  ○ physical portfolio
	  ○ online presence:
	  ▪ websites
	  ▪ blogs
	  ▪ social media
	  ○ promotional video
	  ○ events:
	  ▪ launch events
	  ▪ exhibitions
	  ○ digital presentation slides

4.3	**Presentation skills for a design solution**

	The learner will understand presentation skills used when presenting a design solution, to include types of presentation, related presentation skills and portfolio types:
	
	• types of presentation:
	  ○ formal face-to-face
	  ○ informal face-to-face
	  ○ online, remote or virtual
	• presentation skills:
	  ○ use of presentation software
	  ○ individual presentation preparation and delivery
	  ○ group presentation preparation and delivery
	• portfolio types:

	○ physical ○ digital ○ interactive

5. Review of processes and final solution

The learner will understand how to review design process and production. The learner will also understand the process of summative review of a final design solution against design principles, the design process and whether it meets a design brief.	
5.1	**Formative review of design process and production**

	The learner will understand the aspects of the design process and production to be reviewed:
	
	• aspects of the design process to be reviewed:
	  ○ defining the need of a product
	  ○ research
	  ○ initial ideas
	  ○ prototyping
	  ○ testing
	  ○ redesigning
	• aspects of production to be reviewed:
	  ○ production methods
	  ○ production process
	  ○ production techniques

5.2	**Summative review of a final design solution**

	The learner will understand elements for consideration in a summative evaluation of a design solution, to include how to review design principles, the design process, and whether the design solution has met the brief:
	
	• design principles
	• design process
	• meeting the needs of the brief:
	  ○ functionality of product
	  ○ suitability for target audience
	  ○ usability/performance
	  ○ how challenges faced were resolved
	  ○ future developments/modifications
	  ○ lessons learnt

6. Working in the design production industry

The learner will understand employment, career and entrepreneurial opportunities in the design production industry. They will also understand product promotion and self-promotion in the design production industry, and that self-promotion goes hand-in-hand with product promotion.	
6.1	**Employment and career opportunities and skills in the design production industry**
	The learner will understand employment and career opportunities and skills in the design production industry, in the context of working in the design production industry. To include employment and career opportunities and skills for the design production industry.
6.1.1	**Employment and career opportunities**

	The learner will understand employment and career opportunities within design and production industry sectors. They will understand industry sectors, different types of work and opportunities for upskilling. The learner will also understand that not every job role will be relevant to every sector:
	
	• industry sectors:
	  ○ architecture
	  ○ construction
	  ○ manufacturing
	  ○ craft
	  ○ design
	  ○ fashion
	  ○ museums, galleries and libraries
	  ○ prop making, set or exhibition display
	  ○ visual arts
	• types of work:
	  ○ commissioned work
	  ○ freelance
	  ○ contracts:
	  ▪ full time
	  ▪ part time
	  ○ unpaid work experience
	• upskilling:
	  ○ industry standard software training
	  ○ specialist resource and equipment training
	  ○ continuing professional development (CPD)

6.1.2	**Skills for the design production industry**

	The learner will know and understand skills and their importance in the design production industry:
	
	• self-reflection
	• resilience
	• focus
	• communication
	• motivation
	• thinking creatively:
	  ○ invention:
	  ▪ new ideas
	  ▪ creating new products

	○ innovation: ▪ bringing new ideas to the market ▪ turning an invention into a new product ○ process: ▪ finding new ways of making products to cut costs or improve quality
6.2	**Product promotion**
	The learner will understand how products can be promoted within the design production industry, to include digital and physical marketing and promotional methods: • digital marketing and promotional methods: ○ crowdfunding ○ promotional events ○ online selling websites ○ digital portfolio ○ social media: ▪ online networking events • physical marketing and promotional methods: ○ exhibitions ○ social media ○ portfolio ○ pop-up events ○ promotional events
6.3	**Self-promotion**
	The learner will understand the purpose of self-promotion in the design production industry, to include digital and physical promotional methods. They will also be aware that self-promotion goes hand-in-hand with product promotion: • purpose: ○ to develop a professional persona ○ to stand out against competition ○ to build confidence ○ to build a brand and image ○ to gain work ○ to gain and maintain reputation • digital promotional methods: ○ online presence: ▪ website ▪ social media ▪ features in blogs and online articles ○ networking • physical promotional methods: ○ word of mouth ○ business cards ○ voluntary work ○ workshops ○ networking

Teaching guidance

Website links are provided as sources of potentially useful information for delivery/learning of this subject area. NCFE does not explicitly endorse any learning resources available on these websites. For official NCFE endorsed learning resources, please see the additional and teaching materials sections on the qualification page on the NCFE website.

1. Teaching guidance – design and production in context

It is recommended that the 5 elements of this content area are delivered together at the start of the programme. It is also recommended that this content area is delivered separately to other content areas, as it focuses on learners being introduced to the fundamentals of design production and allows them to undertake independent research using appropriate research techniques. External visits to see examples of design in a real-world environment are strongly encouraged, for example exploring the local area and museums. Content could be formatively assessed using one or more internal assessment tasks or a mock assignment.

1.1 Design movements

This should be an exciting start to the subject and use visual examples to illustrate the design movements. Varied examples of design in that era should be used to illustrate the wide range of what design is in context (for example, architecture, interior, clothing, and crafts). Key social factors, features and designers should be visually illustrated, including the materials used.

1.2 Design principles

This should be an exciting start to the subject and use visual examples to illustrate what design is, teachers could use examples of design in everyday life (for example, architecture, signage, clothing and technology) and discuss what is considered to be 'good' and 'bad' design' introducing terminology such as aesthetics and functionality.

1.3 Environmental impact of a product and 1.4 Impact of social factors on a product

Groups of learners could be given mini design briefs in the form of case studies to explore as in their groups. They will be encouraged to discuss ideas for design solutions. The teacher should facilitate the discussions by gradually introducing design thinking methods as suggestions. In groups, learners will continue to discuss and develop ideas for the given scenario before sharing with peers how their ideas developed. The teacher can prompt further discussion about what they thought worked well and what did not.

Resources:

- lesson plans
- lesson resources (such as presentation slides, handouts)
- internet access
- lesson evaluation

Useful websites:

- www.vam.ac.uk/page/d/design-styles/
- www.designmuseum.org/design/

2. Teaching guidance – design materials and processes

2.1 Investigate materials

It is recommended that the elements of this content area are delivered together early in the programme. This could be delivered alongside content area 1 to allow learners to engage with more practical activities early in the programme, or this could be delivered soon after it. It is also recommended that content area 2 is delivered separately and prior to content areas 3, 4 and 5 as this area focuses on learners being introduced to the properties and characteristics of materials used in the design process. Content could be formatively assessed using one or more internal assessment tasks or a mock assignment.

2.1.1 Materials and 2.1.2 Properties and characteristics

This should be an exciting start to the subject and use visual/tactile examples to illustrate a range of materials used in design production disciplines. Teachers could use a range of examples of design materials to illustrate the different properties and characteristics. Lessons could be teacher-led to explain the properties and characteristics for one material in each group (such as textiles, papers, woods and so on). Learners could then undertake investigations of additional materials in small groups using teacher prompts and one learner could present their findings to the class. All material groups should be covered in the tasks.

2.1.3 Aesthetics

This content can be a continuation of the investigations of material properties and characteristics but should focus on the following aesthetic factors of materials:

- finish
- colour
- texture
- form

Teachers could lead the lessons by talking through examples of each of the aesthetic factors using visual examples from a range of disciplines. Learners could then focus on one discipline and complete gapped handouts using additional images as reference points. This activity could also be linked with design movements from content area 1.1.

2.1.4 Surface treatments and finishing techniques

This content can be a continuation of the investigations of material properties and characteristics and aesthetics but should focus on surface treatments and finishing techniques. This area of content should allow learners to understand a wide range of processes involved for different surface treatments and finishing techniques for a range of materials and disciplines (for example, textiles, papers and boards, wood, plastics, metals, and smart materials). This could be teacher-led using visual examples, guest speakers, video footage and educational visits and also allow for learners to experiment using different techniques in a practical workshop.

2.1.5 Costs

This content requires learners to understand what costs are involved when sourcing materials for their chosen products, this should also include materials for surface treatments and finishing techniques. This would be useful delivered as a separate part of a lesson after learners have undertaken practical

2. Teaching guidance – design materials and processes

investigation, so they understand how different disciplines require different materials, surface treatments and finishing techniques.

Teacher-led delivery should illustrate all potential costs listed in the content area but should also ensure learners are aware that all of these costs may not always be required (such as studio hire costs). After teacher-led delivery, learners could be given scenarios to work with to research and plan the costs for different products across different disciplines.

2.2 Design process

This content area should introduce learners to the whole design process and illustrate the similarities and differences between disciplines. Learners should be taught the stages of the design process, including defining the need of a product, research, initial ideas, prototyping, testing, and redesigning. This could be delivered via a visual flow chart of the design process expanding where stages may crossover. Learners could then be directed to identify the stages of a production process with a given scenario for different disciplines. A project approach would also be useful to allow learners to practise all of these stages, from initial ideas through to a final modified design. This could be a group project or individual project.

2.3 Digital design and manufacture opportunities

2.3.1 Computer-aided design (CAD) and 2.3.2 Computer-aided manufacture (CAM)

It is recommended these content areas are combined within the teaching and learning delivery. Learners will need to be taught both computer-aided design (CAD) and computer-aided manufacture (CAM) content areas. A series of teacher demonstrations would be useful, followed by learners working independently through some practical tutorials.

If appropriate, this content could also be combined with 2.2 Design processes if learners are working within a discipline that would support CAD and CAM as part of the design process.

Resources:

- lesson plans
- lesson resources (such as presentation slides, handouts)
- internet access
- lesson evaluation

Useful websites:

- www.detail-online.com/magazine/material-aesthetics-33530/
- www.sciencelearn.org.nz/resources/2659-properties-of-materials-introduction

3. Teaching guidance – design brief and production processes

It is recommended that the elements of this content area are delivered together after content areas 1 and 2 to ensure learners have the sufficient understanding of the design process and skills within their chosen discipline to respond to a given design brief effectively.

Content area 3 links well with content area 4 (present the product) and content area 5 (review the product). A project approach for delivery is also recommended, therefore, content areas 3, 4 and 5 should use the same vocational scenario and design brief. Content could be formatively assessed using one or more internal assessment tasks or a mock assignment.

3.1 Interpreting a design brief

This content area will ensure learners understand the importance of working in response to design brief requirements. Teaching and learning delivery will need to cover the different elements of a design brief, how to interpret key information, and understand the different types of client and client needs. Teachers could introduce the content area by showing learners different examples of design briefs for different disciplines, and request they extract key information.

3.2 Design proposal

This content area will ensure learners understand design proposals and how these are created. Teachers could introduce the content area by showing learners different examples of design proposals for different disciplines, and request learners respond to different scenarios with what they would need to include in a design proposal.

3.2.1 Design solution process

This content area will ensure learners understand the stages involved in the design solution process. This should be a practical activity that allows learners to respond individually or in groups to a design brief or scenario provided by teachers. Learners should be encouraged to include all the following areas in the practical activity:

- task analysis
- research
- initial ideas
- idea development
- financial considerations
- health and safety considerations
- final design production

3.2.2 Design solution presentation

This content area will ensure learners understand how design solutions can be presented in appropriate formats based on the discipline they are working in and how to include appropriate information in their chosen presentation. This activity should be linked with the design solution learners have worked on in the previous task (3.2.1).

3.3 Communication skills

This content area will ensure learners understand the importance of communication skills and

3. Teaching guidance – design brief and production processes

modification of a design solution in response to feedback. All content areas of client, graphical and digital communication skills should be covered in the teaching and learning; however, learners should select the most appropriate communication skills that are required in response to the given tasks and disciplines. This activity should be linked with the design solution learners have presented in the previous task (3.2.2). It would also be useful to demonstrate links between the qualities of graphical communication in content area 3.3.2 to the design movements in content area 1.1, for example that distinctive black lines are a key feature of the Memphis movement.

3.4 Design solution modification in response to feedback

This content area will ensure learners understand how feedback can impact on the design process and how this may lead to modifications of the design solutions. All content areas of types of feedback could be covered. This activity should be linked with the design solution learners have presented in the previous task (3.2.2).

3.5 Production plan and 3.6 Production methods, processes, and techniques

It is recommended that these content areas are combined and delivered as a practical project. The same design brief should be used, as should the same design solution that has been presented and modified in response to feedback in previous tasks. All areas of content must be taught to learners; however, learners should select the most appropriate planning processes, production methods and techniques based on the discipline they are working in as well as the design solution presented.

Teachers could provide learners with planning and production templates, however, all content placed into templates must be the learners own. It is recommended that teachers undertake an observation and facilitation role after all content has been delivered and learners can work independently to develop skills in all of these areas. It is important to note that review of progress during the planning and production stages should be ongoing, this should not be an evaluation at the end of the project.

3.7 Safe working practices

It is recommended that this content area is delivered alongside any practical tasks, this will ensure risk management and health and safety requirements are purposefully understood when learners are working in design production disciplines. This should include all content areas, inclusive of personal protective equipment (PPE) at work.

Resources:

- lesson plans
- lesson resources (such as presentation slides, handouts)
- internet access
- lesson evaluation

Useful websites:

- www.marketing-partners.com/conversations2/understanding-the-creative-production-process
- www.gov.uk/design-right
- www.blog.designcrowd.co.uk/article/680/the-7-steps-of-a-professional-design-process

4. Teaching guidance – presentation of a design solution

It is recommended that the 3 elements of this content area are delivered together, following content area 3 (design and create the product) as this will allow learners to purposely present the product they have previously created. This content area links well with content area 5 (review the product). A project approach for delivery is also recommended, therefore, content areas 3, 4 and 5 should use the same vocational scenario and design brief. Content could be formatively assessed using one or more internal assessment tasks or a mock assignment.

4.1 Purposes of presentation, 4.2 Methods of presentation and 4.3 Presentation skills for a design solution.

It is recommended that these content areas are combined and delivered together, this could be over a series of teacher-led sessions to discuss different presentation purposes and methods across the range of disciplines. Physical and digital/online presentation methods should be included in the teaching and learning; however, the learner should select the most appropriate method to practise themselves, dependent on the discipline they are working in and product they have presented in the previous tasks (3.5 and 3.6).

Resources:

- lesson plans
- lesson resources (such as presentation slides, handouts)
- internet access
- lesson evaluation

Useful websites:

- www.inmotionnow.com/project-workflow/5-ways-to-give-more-effective-creative-feedback/
- www.invisionapp.com/inside-design/how-to-present-design-work/

5. Teaching guidance – review of processes and final solution

It is recommended that the 2 elements of this content area are delivered together, following content area 4 (present the product) as this will allow learners to purposely review the production process in content area 3 and the final presented product in content area 4. A project approach for delivery is also recommended, therefore, content areas 3, 4 and 5 should use the same vocational scenario and design brief. Content could be formatively assessed using one or more internal assessment tasks or a mock assignment.

5.1 Formative review of design process and production and 5.2 Summative review of a final design solution

The review of the design and production process should be ongoing and recorded throughout the planning and production stages. Learners should be encouraged to do this via a project diary or progress journal. This could be a physical or online record of progress and decisions made throughout the stages of the design and production processes. The ongoing review should feed into and naturally inform the summative review of the final design solution. Learners should have some formal teacher-led lessons to ensure all content areas are covered with illustrated examples, however, it is highly important that learners also use specific areas as stated in the content of 5.2 to evaluate the final design solution they have presented in the previous tasks (3.5, 3.6 and 4.1).

Resources:

- lesson plans
- lesson resources (such as presentation slides, handouts)
- internet access
- lesson evaluation

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It is recommended that the 4 elements of this content area are delivered together at the end of the programme when learners have sufficient evidence of creative work to showcase and sufficient experience within the subject in order to promote themselves appropriately in their chosen discipline.

It is recommended that this content area is delivered separately to other content areas, as it focuses on learners researching potential career paths and progression routes. In addition, this content area prepares learners for progression related activities such as college interviews where they can promote themselves and their work from the qualification.

6.1 Employment, career and entrepreneurial opportunities in the design production industry

6.1.1 Employment and career opportunities

This content area ensures learners understand employment and career opportunities within the design and production industry. All content must be delivered in the teaching and learning stages to cover industry sectors and job roles, different types of contracts and opportunities for upskilling.

It is important for learners to understand that not every job role will be relevant to every sector and discipline. Teachers could deliver a series of formal lessons to explain the different sectors that learners could work in based on their knowledge and skills in design production, and then request learners undertake some group research into the different job roles across the sectors. This could then lead to an individual case study of a given scenario for learners to identify the types of jobs currently available as well as the qualifications and skills they may need.

6.1.2 Skills for the design production industry

This content area ensures learners know and understand entrepreneurial skills and their importance in the design production industry. This could be delivered as a series of practical workshops where learners use teacher-given scenarios or group activities, such as case studies to discuss. Video footage could also be used to illustrate good examples of entrepreneurs such as TV shows and related sources. Where possible, guest speakers could also be introduced to deliver some content regarding thinking creatively, innovation and invention. These sessions should allow learners to practise and demonstrate practical skills, for example role play, as well as understanding the more formal requirements such as market trends and communication skills.

6.2 Product promotion

This should be an exciting content area delivered toward the end of the qualification when learners have experience and skills to be able to promote their work in interesting and creative ways. Teachers could lead a series of initial sessions to discuss good and diverse examples of how practitioners promote their work using physical and digital methods.

Where possible, teachers could introduce guest speakers to show their work as examples.

Learners should then be able to use current examples to inspire their own product promotion. This content could be linked with 6.3 Self-promotion.

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6. Teaching guidance – working in the design production industries

have experience and skills to be able to promote themselves in interesting and creative ways. Teachers could lead a series of initial sessions to discuss good and diverse examples of how practitioners self-promote themselves using physical and digital methods.

Where possible, teachers could introduce guest speakers to show their work as examples.

Learners should then be able to use current examples to inspire their own self-promotion. This content could be linked with 6.2 Product promotion.

Resources:

- lesson plans
- lesson resources (such as presentation slides, handouts)
- internet access
- lesson evaluation

Useful websites:

- www.thecreativeindependent.com/guides/a-creative-persons-guide-to-thoughtful-promotion/
- www.discovercreative.careers/#/

Synoptic connections

Synoptic assessment requires learners to combine elements of their learning and show accumulated knowledge and understanding across the qualification content. It enables learners to evidence their capability to integrate and apply knowledge, understanding, and skills gained with breadth and depth in context.

It is therefore essential when planning for teaching and throughout delivery that the interdependencies and links build across the content of the qualification and are highlighted and reinforced.

The qualification comprises 6 content areas in a single unit model. All content is mandatory and must be taught.

The teaching content does not have to be delivered in a linear way; the unit contents are interdependent in knowledge, skills, and concepts.

Teachers may take a synoptic approach across the qualification. This will enable learners to be able to apply theories and concepts from across the qualification specification in context to skills-based situations. Through combining content and developing holistic connections, learners will be able to demonstrate and evidence their full knowledge and understanding of the subject area and the design and production industry.

Learners will have the opportunity to identify relevant study skills and reflect upon their preferred learning style throughout the qualification.

Section 3: additional information

School accountability measures (performance points)

This V Cert qualification has been developed to meet the criteria set by the Department for Education (DfE) to be included in the key stage 4 performance tables. Each grade has been assigned a points value. Please check the Register of Regulated Qualifications website register.ofqual.gov.uk for further information.

Discounting

If a learner is taking a GCSE and V Cert in the same year with the same discount code, such as GCSE Physical Education and an NCFE V Cert in health and fitness the first entry will count. However, because we do not upload V Cert data to the DfE until August, the exam entry for V Certs is classed as the date the centre claims certification.

- if the centre delivers the GCSE Physical Education exam first and then claims the V Cert afterwards, the GCSE will count
- if the centre delivers the V Cert first and claims the certificate before the GCSE Physical Education exam is sat, the V Cert will count
- if the centre delivers the GCSE and the exam is sat on the same day the V Cert certificate is claimed, then it is the best result that counts

Discount codes for V Cert qualifications can be found on the NCFE website. We advise centres to refer to the Discounting and Early Entry Guidance document provided by the DfE. For more information on discounting please contact the DfE directly.

Qualification dates

Regulated qualifications have operational end dates and certification end dates.

We review qualifications regularly, working with sector representatives, vocational experts and stakeholders to make any changes necessary to meet sector needs and to reflect recent developments.

If a decision is made to withdraw a qualification, we will set an operational end date and provide reasonable notice to our centres. We will also take all reasonable steps to protect the interest of learners.

An operational end date will only show on the Ofqual Register of Regulated Qualifications register.ofqual.gov.uk if a decision has been made to withdraw a qualification. After this date we can no longer accept learner registrations. However, certification is allowed until the certification end date so that learners have time to complete any programmes of study. The certification end date will only show on the Ofqual Register once an operational end date has been set. After this date we can no longer process certification claims.

Where a qualification has an external assessment, this can only be taken up to the last assessment date set by us. No external assessments will be permitted after this date so learners will need to be entered in sufficient time.

Support materials

The following support materials are available to assist with the delivery of this qualification and are available on the NCFE website:

- learning resources
- qualification factsheet

Other support materials

The resources and materials used in the delivery of this qualification must be age-appropriate and due consideration should be given to the wellbeing and safeguarding of learners in line with your centre's safeguarding policy when developing or selecting delivery materials.

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- the use of PDF versions of our support materials on the NCFE website will ensure that correct and up-to-date information is provided to learners
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