Pathway 3 – Three-Dimensional Design

Abstract

Designers explore ideas, materials, and techniques in response to self-defined or given briefs. In order to develop their own professional skills, they work with different materials and experiment widely to explore the potential of a chosen medium and its suitability for the task. They research widely from different sources to gain inspiration to help them develop ideas. Professionals continuously review the progress of their work to ensure it meets their creative intentions and the requirements of the brief.

An essential capability of 3D design is the ability to communicate 3D structures through 2D drafting media, increasingly using digital software. This pathway explores working to 3D design briefs. The aim of this pathway is to enable learners to explore, experiment with and understand how to respond to 3D design briefs. This will involve learners carrying out research from a range of primary and secondary sources appropriate to their brief. A valuable part of their research will be to learn what a contemporary 3D designer does and the range of possible materials and techniques they employ to communicate their ideas most effectively. Learners will also explore historical and cultural visual arts to explore similar resources and constraints. Their wide-ranging research will inform learners’ understanding of how to use 3D materials and techniques to express their creative intentions. Learners will review the progress and refine the process of their work through ongoing and final analysis in response to the given briefs.

Learners will explore and experiment with a variety of non-resistant and resistant materials to investigate the manipulation, treatment and creative possibilities of 3D design materials and techniques. This will involve 3D making techniques for constructing and modelling, essential for using different materials and techniques successfully. Learners will need to learn about the care of and correct use of specialist 3D tools and equipment. They will also be made aware of the health and safety issues associated with the materials and techniques they study.

Pathway 3 – 3D Design – Learning Outcomes/Strands

On completion of this pathway a learner should:

1 Know how to develop ideas and final outcomes to meet 3D design briefs by selecting suitable materials and techniques

2 Be able to use 3D materials

3 Be able to use 3D construction techniques and processes.

Pathway 3 – 3D Design – Content

**1. Know how to develop ideas and final outcomes to meet 3D design briefs by selecting suitable materials and techniques**

*3D design briefs:* may be about designing products, systems or environments, e.g. ceramics, furniture, lighting consumer and electrical goods, industrial products, interiors, exteriors, environments, retail displays or exhibitions, urban environments; analysis of briefs, identifying what needs to be taken into account when developing a response, e.g. What is the target market? What are the needs and preferences of the target market? What functional and technical factors need to be considered, e.g. size, scale, performance, ease of use, cost, method, and scale of production? What can be learned from similar commercial projects?

*Selecting materials and techniques*: look at aesthetic qualities and fitness for purpose, e.g. considering alternative options; exploring properties, characteristics, effects, uses, limitations, and creative potential; discussing why some materials and techniques are more suitable than others

**2 Be able to use 3D materials**

*3D materials:* non-resistant materials e.g. plaster, card, paper, lightweight wood, string, soft wire, plastic sheet, glues, and adhesives; resistant materials — e.g. metals, wood, wood-based products, and rigid plastics

*Health and safety:* Health and Safety Act 1974, elimination of risk to self and others; thinking and working safely within a studio environment and following the appropriate COSHH guidance on materials and techniques

**3 Be able to use 3D construction techniques and processes**

*Construction techniques and processes*: e.g. how to plan construction processes, cutting and carving, forming, and moulding, joining, and assembling, finishing.

Assessment for Pathway 3 – 3D Design

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| --- | --- | --- | --- |
|  | Standard Level All should achieve | Intermediate LevelMajority achieve | Advanced LevelMost able achieve  |
| Strand 1:Design3.1 | Standard 1 - develop basic ideas and final outcomes to meet 3D design briefs by selecting appropriate materials, techniques and processes | Good 1 - develop effective ideas and outcomes to meet 3D design briefs by exploring a range of alternative materials, techniques and processes safely | Outstanding 1 - develop effective ideas and outcomes to meet 3D design briefs by exploring a wide range of alternative materials and techniques safely |
| Strand 2:Materials3.2 | Standard 2 - use 3D materials basically and safely | Good 2 - use a range of 3D materials to create effectively | Outstanding 2 - use a wide and/or appropriate range of 3D materials creatively and independently |
| Strand 3:Techniques & Processes3.3 | Standard 3 - use 3D construction techniques and processes basically and safely | Good 3 - use a range of 3D construction techniques and processes effectively. | Outstanding 3 - use a wide range of construction techniques and processes creatively and independently. |

Assessment Levels for Pathway 3 – 3D Design

Standard Level – All students should achieve

For **Standard Level – Strand 1**, Learners will be expected to develop basic ideas and outcomes to meet 3D design briefs. Learners will select appropriate materials, techniques and processes in response to the briefs’ requirements but at this level they would use a limited range of skills. Evidence for this criterion might be taken from learners’ sketchbooks, worksheets, and samples, chosen to reflect the development of ideas and skills as well as an awareness of safe working practices.

Evidence for **Standard Level – Strand 2 and Strand 3** might be integrated and could be achieved through informal presentation and discussion or via witness statements and/or observation records.

Intermediate Level – Good – Majority of students should achieve

For **Good Level – Strand 1**, learners should be able to develop a range of effective ideas and outcomes in response to set briefs. They will investigate a range of alternative materials, techniques and processes and at this level would be expected to bring together skills with ideas. Evidence for this criterion might take the same format as that for Standard Level – Strand 1.

As with **Good Level – Strand 2 and 3**, evidence for Good Level – Strand 2 and 3 could be integrated and achieved in the same way but although set tasks may be similar as those for a Standard level, for learners at this level, teachers would additionally expect learners to carry out more creative experimentation, demonstrating a deeper understanding of the materials, techniques and processes used.

Advanced Level – Outstanding – Most able should achieve

For **Outstanding Level – Strand 1**, learners are required to imaginatively develop their ideas and outcomes in response to given 3D design briefs by exploring a wide range of alternative materials, techniques and processes. This might be evidenced more formally at outstanding level, if considered appropriate, with a presentation to the class. It would be expected that learners’ work would be fully supported by annotated worksheets and sketches and they should produce a wide range of developmental studies and samples demonstrating their skilful and original manipulation of materials and techniques.

For **Outstanding Level – Strand 2 and 3**, learners would be expected to show creativity and independence in their working and be able to reflect on the effectiveness of their decision-making in their work. Assessment evidence for these criteria might take a similar format to that for Good Level – Strand 2 and 3.

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Grade Mark – 10 Mark – 100 Level

A\* 10 90 – 100 8/9

A 9 70 – 89 7

B 8/7 60 – 69 5/6

C 6/5 50 – 59 4

D 4 40 – 49 3

E 3 30 – 39 2

F/G 2 20 – 29 1

U 1 0-28 U