

Non-Examined Assessment

Band 4 Exemplar Learner Response

**NCFE Level 1/2 Technical Award in
Creative Design and Production
(603/7003/8)**

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Introduction

The following are sample learner responses for each task within an assignment alongside examiner commentary for each assignment. They show how learners might respond and can help assessors in making their overall marking decisions.

Learner responses

Each learner response should demonstrate what a mark band four / top band response looks like alongside any evidence that is required to be completed. All responses use content from the mark schemes and align with the standards in the mark band descriptors and indicative content.

Assessor commentary

The assessor commentary demonstrates why the responses given throughout the assignment meet the criteria for the mark band they have been awarded. The assessor commentary will be linked to, and supported by, the descriptors in the mark scheme.

1 (a) Research methods and techniques		
Band	Marks	Descriptors
4	10–12	<p>AO3: Makes judgments on the research findings, to inform their design, that are excellent, highly detailed and highly relevant to the requirements of the brief.</p> <p>AO2: Applies an excellent understanding of a wide range of research methods and techniques that include comprehensive and highly detailed links to the requirements of the brief.</p> <p>AO1: Excellent recall of knowledge and understanding of environmental impacts of a product that is comprehensive, highly detailed and highly relevant to the requirements of the brief.</p>
3	7–9	<p>AO3: Makes judgments on the research findings, to inform their design, that are good, mostly detailed and mostly relevant to the requirements of the brief.</p> <p>AO2: Applies a good understanding of a range of research methods and techniques that include mostly detailed links to the requirements of the brief.</p> <p>AO1: Good recall of knowledge and understanding of environmental impacts of a product that is mostly detailed and mostly relevant to the requirements of the brief.</p>
2	4–6	<p>AO3: Makes judgments on the research findings, to inform their design, that are reasonable, have some detail and some relevance to the requirements of the brief, though this may be underdeveloped.</p> <p>AO2: Applies a reasonable understanding of research methods and techniques that include some links to the requirements of the brief and have some detail, though may be underdeveloped.</p> <p>AO1: Reasonable recall of knowledge and understanding of environmental impacts of a product that has some detail and some relevance to the requirements of the brief, though may be underdeveloped.</p>
1	1–3	<p>AO3: Makes limited judgments on the research findings, to inform their design, with minimal detail and little to no relevance to the requirements of the brief.</p> <p>AO2: Applies a limited understanding of a minimal range of research methods and techniques that include minimal detail and little to no relevance to the requirements of the brief.</p> <p>AO1: Limited recall of knowledge and understanding of environmental impacts of a product that has minimal detail and little to no relevance to the requirements of the brief.</p>
0	0	No rewardable material

Project brief

Scenario

You work full time as a designer for a creative design agency.

Your line manager has given you a design project to work on. They want you to capture your progress of the project by creating a digital portfolio of the different stages undertaken, ready for an appraisal at the end of the project.

Your line manager has sent you the following information by email:

The client owns an eco-friendly, home furnishing chain and would like to launch a new campaign to influence behaviour by increasing customer visits to their high street shops.

They would like a bespoke item displayed in the shop window that is eye catching and have said that it can either be functional or design initiated.

They have a varied taste but have provided you with two particular design movements they would like you to explore with your design.

Client brief

Client type:

- commercial – eco-friendly, home furnishings.

Client requirements

- Design a one-off, bespoke item of your choice that will be displayed in a high street shop window.
- You must consider the impact of the item you design on the environment.
- The item you design must be inspired by either:
 - looking to the past and reflecting the arts and crafts movement
 - or
 - looking to the future and reflecting post-modernist ideas.

Additional information

Each task will require you to produce a range of evidence that you will then select from and include in your digital portfolio.

You should read all task instructions carefully and keep all of the work you produce so that you have a range of evidence to select from when constructing your final digital portfolio.

Your digital portfolio should include the task title for each section so that it is clear how your work relates to the requirements of each task.

Task 1 (a): research methods and techniques

Evidence

Research you could include in your digital portfolio:

- annotated primary sources
- annotated secondary sources
- potential materials – samples, experiments
- annotated sketches
- notes on environmental issues linked to your design ideas mind maps
- mood boards
- annotated draft sketches
- a list of references for the sources you have used
- a copy of your internet browsing history.

Task 1a: Analysing the brief and initial thoughts

Info given

Client: high street home-furnishing chain (so mid-range prices)
Client style: eco-friendly
Location of item: shop window
Purpose of campaign: increase customer visits (influence behaviour)

Identify key needs

Item required: **eye-catching** one-off bespoke item
Item must reference: **Arts and Crafts** (past) and/or **Postmodernism** (future)
Must consider: impact on the environment

Thoughts

What range does the phrase 'home furnishings' cover? Furniture (hard), soft furnishings (cushions, curtains),
What makes things eye-catching? Colour? Shape?
What influences people's behaviour, draws them in? Different, they stand out
Impact on environment = environmentally responsible (sustainable, recyclable)
home furnishings (primarily living room, but also kitchen, bathroom)
Purpose: to sit on, put things on, light up room, storage, divide room, display plants
Small items: vase, Decorative: create colour

Arts and Crafts – associations

1890s, elegant, nature, organic, William Morris, beautiful and functional, well-designed, for all social classes but not mass-produced, objects for everyday use, Rennie Macintosh and Margaret Macdonald, proportion, space, furniture, applied art, crafts, domestic objects, fabric, wallpaper (Sanderson, Voysey), soft furnishings, architecture, old and new materials (wood, metal, paper, ceramic, glass)

Postmodernism – associations

1950s onwards, uncompromising, Jackson Pollack via Dada, John Cage, unconventional, reactionary, hotch-potch, mixed media, bricolage, appropriation, Frank Gehry, Bilbao, Prague dancing house, humour, irony, Vivienne Westwood, punk, eclectic, Zaha Hadid, socio-political statement, deconstructing what's gone before, retro, mix of high art and popular culture, installation, challenging accepted concepts, nebulous, Philippe Starck (Alessi), industrial and synthetic materials mixed with found and re-used, textured, ripped, rough, contrast,

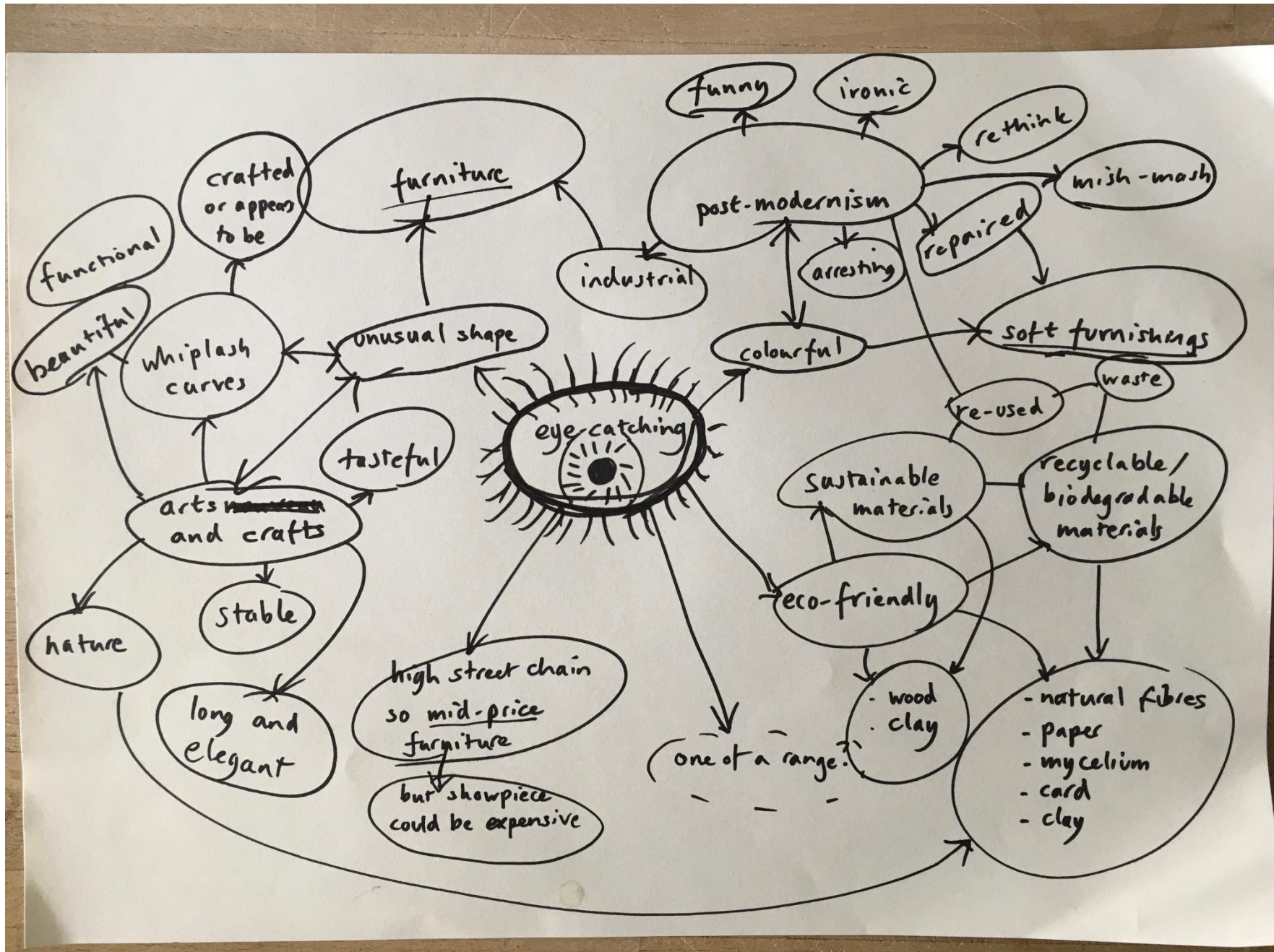
Assessor comments

AO3 The learner demonstrates excellent understanding of the brief by identifying key information and client needs then analyses how to translate these into possible solutions. Learner draws on extensive learned knowledge covering concepts, processes, makers and materials, in list form and a mind map, to narrow down fruitful areas to research.

AO2 Research is very detailed and highly relevant but all secondary. Some primary research, perhaps using samples, would be desirable. Research is appropriately visual with relevant annotations, however, the annotations could be more extensive. Learner demonstrates excellent judgment in selecting key elements from examples to extract for use in their sketched design ideas. Surrounding each sketched idea with the researched images demonstrates clearly how the research inspires the design.


AO1 Learner references both design movements suggested. In all three ideas they address environmental impacts, utilising either sustainable or recycled materials.

They have produced three design ideas for completely different products that could all meet the brief.



Chair

Task 1a: Idea 1 mood board




Initial inspiration – primary research from portfolio of original photographs taken of the local environment (left to right, top to bottom)


- Compost enclosure in local park
- Gateway on street
- Park bench
- Café seating

natural wood
beautiful and functional
plain 'slat' design
combines straight lines and curves

Materials and processes inspiration – primary and secondary research from course portfolio and the internet (left to right, top to bottom)

- Discarded wooden pallet
- Discarded wooden crate
- Steam-bending wood
- William Morris designs on cotton fabric
- Plain linen/calico fabric





Historical inspiration – secondary research from the internet (left to right, top to bottom)

- Philip Webb chair for Morris and co, ebonised wood, c.1870-90
- George Walton, Glasgow 1900
- Tom Raffield; pendant light, ash, 2020s
- Louis Majorelle, pair of chairs, Nancy, France, 1900s
- Charles Rennie Mackintosh, 'Argyle Chair', oak and rush
- Kallevig, 'Wishbone' chair, 2020s
- Tom Raffield; 'Amble' hanging seat, ash, 2020s

Morris chair: <https://artsandcraftshomes.com/interiors/evolution-of-the-morris-chair>

Walton chair: <https://www.twentiethcenturyantiques.co.uk/furniture/hans-wegner-lounge-chair-model-ge-290-getama-d36jr-clspbywet7-kewmc-fybz4-bl3r5-glhly-kdz48>

Pendant light: https://www.heals.com/skipper-pendant-small.html?ps=MzQ2PTI0MTI=&gclid=CjwKCAiA5Y6eBhAbEiwA_2ZWIVt-BwoAe-kRFSXnEIFJfL-2lki-B1iRIOvfR4C3m_io0D8Tg-W-phoCuOkQAvD_BwE#346=2412&istCompanyId=dbea74c7-03f8-4f08-adfe-5f18fd6f4b7e&istFeedId=bfcddebec-5d59-4d03-ae82-17a7c111bb82&istItemId=pmprrrapw&istBid=t

Mackintosh chair: <https://collection.maas.museum/object/168257>

Kallevig chair: https://bykallevig.com/en/product/the-wishbone-chair/?gc_id=2016761235&gclid=Cj0KCQjwpPKiBhDvARIsACn-gzBt8ob_tBil24rbgsS9YBHF1V-5fNzWL2-wC2waCG0jVjVer4IlnUaAtMyEALw_wcB

Hanging seat: <https://www.tomraffield.com/products/amble-hanging-seat>

Task 1a: Idea 1 design



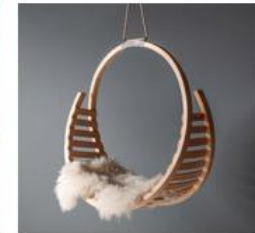
frame: ash (or oak) for light colour and strength, cut into slats and curved using steam-bending technique
approximate height 90cm, width 45cm



seat: fire-resistant natural fabric, either undyed calico or linen for 'Scandi' minimalist finish or patterned fabric with 'nature' design (William Morris) for a more 'Arts and Crafts' look with fire-resistant foam cushion

'Slouch' chair

inspired by the arts and crafts movement



Structure formed from steam-bent wood (inspired by old pallets and Raffield)



Curved shapes formed by steam-bending inspired by Majorelle, Kallevig and Raffield

Raffield photos: <https://www.tomraffield.com>

Linen: [https://www.justfabrics.co.uk/curtain-fabric-upholstery/natural-linen-twill-](https://www.justfabrics.co.uk/curtain-fabric-upholstery/natural-linen-twill-fabric/?gclid=Cj0KCQjwpPKiBhDvARIsACn-gzAkIj7yKmmO2yVuBkn9q-)

[fabric/?gclid=Cj0KCQjwpPKiBhDvARIsACn-gzAkIj7yKmmO2yVuBkn9q-](https://www.justfabrics.co.uk/curtain-fabric-upholstery/natural-linen-twill-fabric/?gclid=Cj0KCQjwpPKiBhDvARIsACn-gzAkIj7yKmmO2yVuBkn9q-)

Blue fabric: <https://www.tinsmiths.co.uk/product/compton-arts-and-crafts-fabric/>

Task 1a: Idea 2 mood board

Pendant light

inspired by postmodernism

Materials and processes inspiration – primary and secondary research (left to right, top to bottom)

Polycarbonate? Polyethylene? Acrylic (Plexiglas)? PET (polyethylene terephthalate) which becomes rPET?
Comes in sheet form then can be shaped around a mould using heat (thermoforming)

- Tom Dixon 'Melt', polycarbonate pendant light
- Melting PET in a factory
- Polytunnel
- Thermoformed blister packaging

Initial inspiration - primary research (left to right, top to bottom)

- Belisha beacon
- Car light
- Security camera
- National Lottery stand
- Discarded plastic cup
- Discarded plastic canister
- Discarded water bottle
- Wall lighting

Historical/design inspiration - secondary research (left to right, top to bottom)

- Harvey Guzzini light for Meblo, plastic and chrome
- Tom Dixon chandelier, polycarbonate
- Soap bubbles
- Jeff Koons dog sculpture, stainless steel

Tom Dixon light: www.tomdixon.net

<https://www.istockphoto.com/search/2/image-film?phrase=plastic+industry+factory+melting>

Polytunnel: https://www.firsttunnels.co.uk/domestic-polytunnels/12ft-wide-polytunnel?gclid=CjwKCAjw9pGjBhB-EiwAa5jl3Pmfn00zrvj3zsjm-JOBYbIKKfE4BGamKHD-hwxkunR30N8go6ytsRoCeAIQAvD_BwE#fo_c=2921&fo_k=5af31d2bb5919e787887773bf6767ebe&fo_s=gplauk

Blister packaging: <https://www.plasticstoday.com/packaging/blister-packaging-developments-and-takeaways>

Guzzini light: https://www.1stdibs.com/furniture/lighting/chandeliers-pendant-lights/large-orange-mid-century-pendant-meblo-harvey-guzzini-italy-1970s/id-f_31273682/

Tom Dixon chandelier: https://www.tomdixon.net/en_gb/melt-led-chandelier-small-2-configurable.html

Bubbles: https://www.etsy.com/uk/listing/1337605977/30-transparent-bubbles-png-unique?gpla=1&gao=1&&utm_source=google&utm_medium=cpc&utm_campaign=shopping_uk_en_gb_e-craft_supplies_and_tools-other&utm_custom1=_k_Cj0KCQjwpPKiBhDvARIsACn-gzA7D9kmwiEIK6oRbTrPM58XXBIXA_h

Koons dog: <https://www.galeriartget.com/en/product/5922531/jeff-koons-balloon-dog-green-cold-cast-resin-30-x-30-x-12-cm-ed-224-999>

<https://www.bbc.co.uk/news/world-us-canada-64695059>

<https://www.bbc.co.uk/news/world-us-canada-64695059>

<https://www.bbc.co.uk/news/world-us-canada-64695059>

<https://www.bbc.co.uk/news/world-us-canada-64695059>

Task 1a: Idea 2 design

'Bubble' light

inspired by postmodernism



Tom Dixon
'Melt' pendant light
(polycarbonate)

Harvey Guzzini
pendant light
(chrome and plastic) for
Meblo

Want to make multiples
of bubbles that join
together in the way that
bubbles do: they lose
their spherical shape



Want to capture the
'feel' of bubbles in
shape, translucency
and delicacy. Will
probably require
thermoforming as a
process: using heat to
shape a sheet of
polycarbonate around
a mould. Will a flat
sheet translate
successfully into a
spherical form?



Using a rigid material
to create a form that
appears to be non-
rigid and held together
by the force of air
captured inside. The
mould (original form)
may indeed be
inflated.



Tom Dixon chandelier: https://www.tomdixon.net/en_gb/melt-led-chandelier-small-2-configurable.html

Bubble: <https://www.dreamstime.com/photos-images/bubble-joined.html>

Koons dog: <https://www.galeriartget.com/en/product/5922531/jeff-koons-balloon-dog-green-cold-cast-resin-30-x-30-x-12-cm-ed-224-999>
and <https://www.bbc.co.uk/news/world-us-canada-64695059>

Task 1a: Idea 3 design

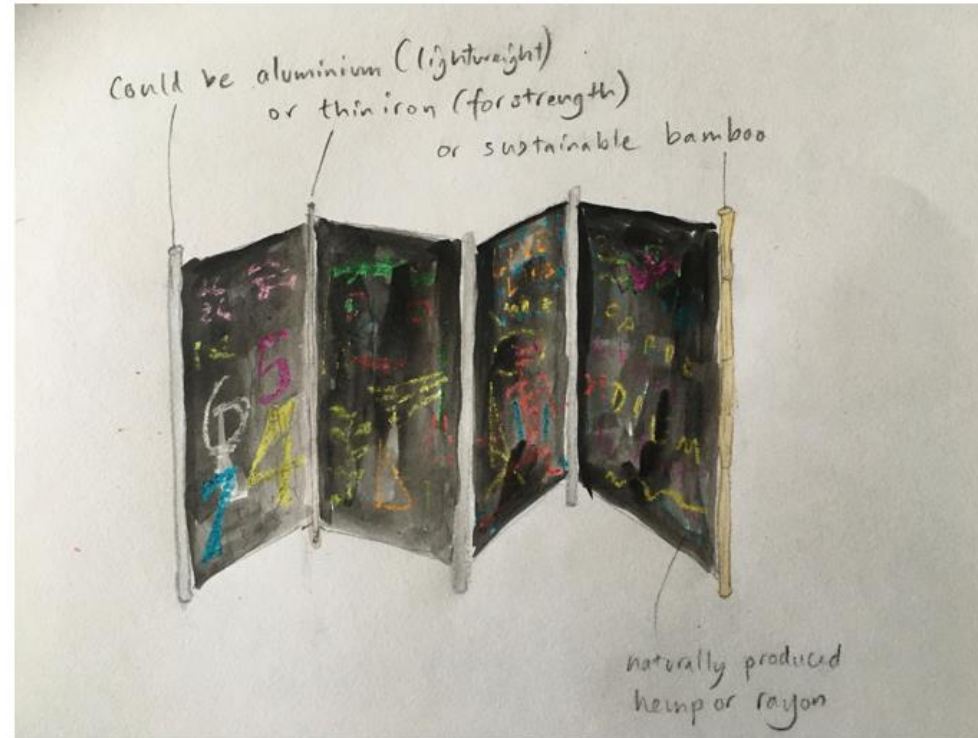


frame: sustainable wood/bamboo for lightness or possibly aluminium (coloured black?) for strength and lightness of weight. Four or five-pane folding design inspired by Ikea and Bimago screens.



'Graffiti' screen/room divider

inspired by postmodernism



Jean-Michel Basquiat:
Kings of Egypt II

fabric: canvas for strength or sustainable calico. Maybe dyed black with a printed graffiti design. Or could issue DIY kit form: paint your own graffiti screen kit?



Ikea screen: <https://www.ikea.com/gb/en/p/risoer-room-divider-white-black-70182191/>

Bimago screen: <https://www.bimago.co.uk/room-dividers/relaxing-on-the-beach-ii-room-dividers-134007.html>

Basquiat: <https://www.boijmans.nl/en/collection/artists/2178/jean-michel-Basquiat>

Internet browsing history / references

Morris chair: <https://artsandcraftshomes.com/interiors/evolution-of-the-morris-chair>

Mackintosh chair: <https://collection.maas.museum/object/168257>

<https://www.heals.com> (<https://www.tomraffield.com>)

Pendant light: https://www.heals.com/skipper-pendant-small.html?ps=MzQ2PTI0MTI=&gclid=CjwKCAiA5Y6eBhAbEiwA_2ZWIVt-BwoAe-kRFSXnEIFJfL-2Iki-B1iRIOvFR4C3m_io0D8Tg-W-phoCuOkQAvD_BwE#346=2412&istCompanyId=dbea74c7-03f8-4f08-adfe-5f18fd6f4b7e&istFeedId=bfcdebec-5d59-4d03-ae82-17a7c111bb82&istItemId=pmprrrapw&istBid=t

Hanging seat: <https://www.tomraffield.com/products/amble-hanging-seat>

Tom Dixon chandelier: https://www.tomdixon.net/en_gb/melt-led-chandelier-small-2-configurable.html

Guzzini light: https://www.1stdibs.com/furniture/lighting/chandeliers-pendant-lights/large-orange-mid-century-pendant-meblo-harvey-guzzini-italy-1970s/id-f_31273682/

Koons dog: <https://www.galeriartget.com/en/product/5922531/jeff-koons-balloon-dog-green-cold-cast-resin-30-x-30-x-12-cm-ed-224-999> and <https://www.bbc.co.uk/news/world-us-canada-64695059>

Bubble: <https://www.dreamstime.com/photos-images/bubble-joined.html>

Basquiat: <https://www.boijmans.nl/en/collection/artists/2178/jean-michel-Basquiat>

Ikea screen: <https://www.ikea.com/gb/en/p/risoer-room-divider-white-black-70182191/>

Bimago screen: <https://www.bimago.co.uk/room-dividers/relaxing-on-the-beach-ii-room-dividers-134007.html>

Jasper Johns: <https://www.tate.org.uk/art/artworks/johns-0-through-9-t00454>

Task 1 (b): interpreting a design brief

Evidence:

An email of your proposal to the client (in an appropriate word-processed document and included in your digital portfolio).

Dear Xxxxxxx,

Re: Eye-catching piece for display in your shop window

Here are three initial ideas for this exciting project for you to consider. I look forward our scheduled meeting in which I can address whatever questions you have and we can discuss which idea you would like me to take forward and how we can develop it.

- All three are made from sustainably sourced materials that are either biodegradable or can be recycled, to ensure they fit the eco-friendly ideology of your business.
- In response to your request for referencing particular design movements, the first item takes inspiration from the Arts and Crafts movement while the other two are inspired by postmodernism.

Idea 1: 'Slouch' chair

Materials: sustainably grown, locally sourced wood (ash) and thick fire-resistant calico

Design style referenced: Arts and Crafts

The wood is light-coloured for a modern, slightly Scandinavian look, and steam-bent to create the curves. Thick durable fabric could be left in its natural raw beige colour or dyed with natural dyes. The simple mix of utilitarian form and elegant shapes echo the shapes of William Morris and Charles Rennie Mackintosh furniture.

Idea 2: 'Bubble' light

Materials: recycled polycarbonate water bottles, LED bulbs

Design style referenced: Postmodernism

A range of domestic lighting that could include pendant, freestanding and wall-mounted. Although not biodegradable, the lights would be made from recycled polycarbonate water bottles which can be recycled again. The playful shapes are sparked by the eye-catching metal sculptures of Jeff Koons and Guzzini pendant lights. Tom Dixon's use of polycarbonate for his 'Melt' lamps suggested using recycled water bottles.

Idea 3: 'Griffiti' screen or room divider

Materials: aluminium/iron or bamboo frame with hemp or rayon fabric

Design style referenced: Postmodernism

This could feature a lightweight aluminium or thinner iron frame for a modern industrial look, or use bamboo for a softer, more domestic feel. The fabric would be sustainably produced hemp or rayon printed with a contemporary graffiti design inspired by the paintings of Jean-Michel Basquiat or Jasper Johns. An alternative option could be to fill the frames with plain, unprinted fabric and supply fabric paints for owners to create their own designs.

If you would like more information ahead our meeting, please ring or email me.

Best wishes.

Learner

Assessor comments

The learner outlines three highly appropriate and relevant designs, all fulfilling the brief, but omits to give dimensions. The learner demonstrates an excellent understanding of style and how to develop general features or details from historical pieces into modern designs with a contemporary feel. Ideas 2 and 3 might be considered too 'sedate' to be eye-catching enough for a shop window in a postmodern way.

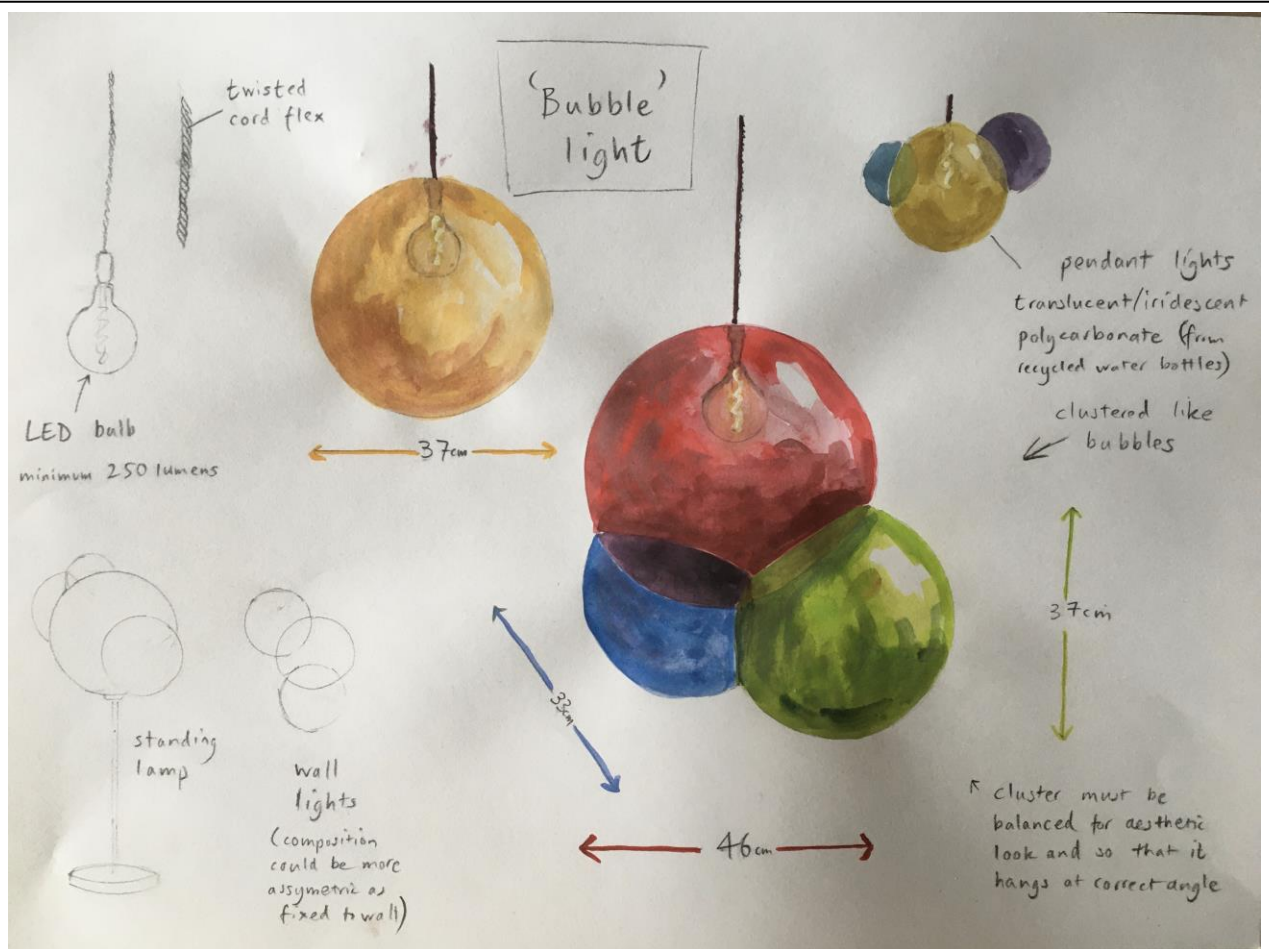
The learner has given extensive thought to environmental issues and processes. Idea 1 echoes Arts and Crafts ideals, being made from natural and locally sourced materials using steam-bending. Ideas 2 and 3 are more industrial but use recycled waste materials, low-energy bulbs and biodegradable fabric. The learner offers the client flexible options on materials / design to help them create their desired impact.

Task 2: developing the designs

Evidence:

You could include in your digital portfolio:

- drawings: 2D designs, hand rendered or CAD
- notes on experimental ideas
- images of material samples
- annotations on the drawings
- a list of references for the sources you have used
- a copy of your internet browsing history.



pendant light in red/green/blue

total height/width approximately 60cm (sphere diameters: red 46cm, green 37cm, blue 33cm)
 material: translucent polycarbonate with transparent LED light bulb suspended from a twisted brown flex variations could include single bubbles (golden yellow) or different formations of cluster (yellow, purple, blue)

Assessor comments:

AO4 The learner's hand-rendered drawings give an excellent impression of the product and cover highly relevant aspects of the design solution: exact dimensions, how the light hangs, its translucency, how the bulb sits inside.

AO5 Aspects analysed and evaluated fully in review. Excellent additional use of CAD illustrating how geometric shapes fit together, from different viewpoints including from below.

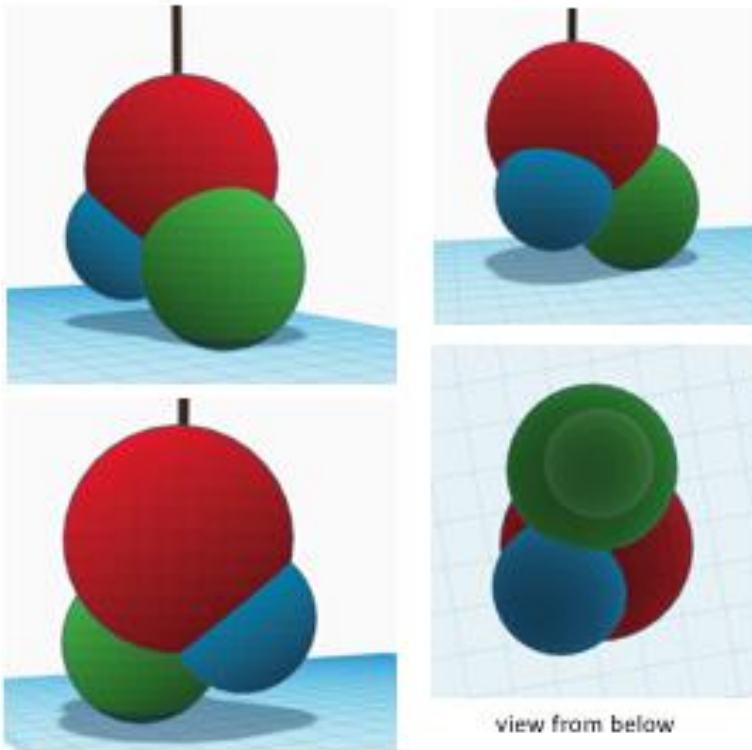
Comprehensive supporting sketches and review comments describe variations in shape, colour and weight distribution demonstrating an excellent grasp of aesthetics. design principles and technical awareness. Excellent attention to detail includes research into light bulbs and luminosity. A sample of the proposed materials or detailed close-up photos or cross-section diagram showing thickness would raise the mark further.

Task 2: different views and variants

views of pendant light from different angles

total height/width approximately 60cm

(sphere diameters: red 46cm, green 37cm, blue 33cm)



variations in cluster, colour and shape



main idea is red/green/blue but aspects that could be varied are:

- formation (cluster or single)
- colour (different contrasting or a palette of similar hues)
- shape (spherical, 'balloon', wavy, abstract)



CAD drawings made using Tinkercad

Yellow swatch: <https://colorconfidence.com/products/pantone-color-bridge-coated>

Green swatch: <https://www.pinterest.co.uk/pin/455778424799145583/>

Purple swatch: <https://www.ambius.com/blog/2018-pantone-color-ultra-violet/>

Task 2: materials



main bubble:
translucent
polycarbonate
made from
recycled water
bottles
(to re-use a
waste
material)



bulb: glass, spherical transparent LED, 250 lumens (or brighter)



flex: plain minimalist twisted in gold, brown or green (or a colour to suit the chosen palette)

Tom Dixon light: https://www.tomdixon.net/en_gb/melt-led-pendant.html?nosto=family-nosto. Light bulbs all from: <https://www.pooky.com/collections/lightbulbs/> Gold flex: https://www.thevintagelightbulbcompany.com/antique-gold-braided-fabric-lighting-cable-146-p.asp?_=&variantid=4116&gclid=Cj0KCQjwmZejBhC_ARIsAGhCqnd10da6tHOoc-QJ8qV6edkh5dU-vMHeVVjVmXZbjNzNE_KRRLdkHhlaAiFWEALw_wcB
Brown flex: https://www.lampsandlights.co.uk/shop/braided_lighting-flex/lighting-flex-brown/
Green flex: https://prismalighting.co.uk/products/prisma-racing-green-3-core-0-5mm-twisted-cable?currency=GBP&variant=40681492709572&utm_medium=cpc&utm_source=google&utm_campaign=Google%20Shopping&gad=1&gclid=Cj0KCQjwmZejBhC_ARIsAGhCqnfOGTp7zYKGBAvbMbWidR0yMmsTb5pn2NjWN5QL95tfNuxgvD6MqyMaAlqzEALw_wcB

Task 2: processing materials



above: plastic document sleeves, cup, bottle and canister demonstrating the range of thickness, pliability and degrees of transparency or translucency to consider. Ideally the bubble lights would be transparent however a more 'frosted' effect may be cheaper to produce using recycled materials.

Old polycarbonate water bottles made from PET (polyethylene terephthalate) are fully recyclable. The bottles are washed then shredded into small flakes. The flakes are melted, extruded into long filaments then formed into pellets, ready for reforming. The pellets are melted then forced into a mould (thermoforming). The plastic is allowed to cool and solidify after which it can be removed from the mould. Because PET melts at a lower temperature than glass and aluminium it uses less heat, so is 'greener' and cheaper to recycle.



PET bottles and flakes: <https://www.recycletheone.com/recycle-now/how-does-pet-plastic-recycling-work>
PET pellets: <https://www.waste360.com/plastics/startup-nyltec-polymers-makes-pet-pellets-replace-nylon-6>

Task 2: review

This could be one of a range of lights.

The main pendant light (red, green, blue in the drawing) is large, colourful and eye-catching, as specified. It is balanced aesthetically but also takes into account the weight and positioning of the different bubbles so that the pendant hangs straight. The pendant light could have many variations of clusters as long as the weight is distributed evenly and can be suspended by the central flex without the lights tipping or pulling on the flex. Variations could include different 'cluster' designs and different colours, for example a cluster of different shades of green. Wall lights would not need to be suspended so could be more asymmetric. A standing lamp would need support from below and appropriate positioning of bubbles to ensure it doesn't tip over.

Recycling used plastic water bottles would be eco-friendly and a selling point. Some heat would be required to melt the bottles but the process would not be intensely energy hungry.

In design terms, the main design draws on a range of principles: repetition (of spheres) to create rhythm and homogeneity, proportion (the three spheres are different sizes), balance (the smaller two spheres occupy approximately the same volume as the larger sphere giving a pleasing balance) and contrast (the three colours contrast with each other: the red and green are opposites in the colour wheel and the red and blue are primary colours). The light fitting hangs from the ceiling so will be surrounded by space. It could be suspended from a fixed tube or a wire/cable that would allow it to rotate a little, giving some genuine movement to the design. The surroundings will affect the impact of the light so I will discuss the setting with the client.

Task 3: plan of production stages for design solution

Evidence:

You could include in your digital portfolio:

- production plan
- risk assessment of required materials, tools and techniques
- a list of references for the sources you have used
- a copy of your internet browsing history.

Time	Activity	Materials
0	Write plan for two prototypes: for each determine activities, list materials and calculate cost of extra materials not already available in workshop, write risk assessments. Assemble together materials.	Computer
0:30	Build Prototype 1 (1 hour) Blow acetate bubbles, join together and suspend. Take photos throughout process.	Acetate bubble-blowing set, string
1:30	Build Prototype 2 (2.45 hours) Inflate latex balloons, encase in papier-mâché, paint with gouache, join together, suspend with battery operated LED in top sphere. Take photos throughout process.	Latex party balloons, thin tissue paper, flour, water, hairdryer, heatproof cork mat, pin, PVA glue, string, LED Christmas lights
4:15	Upload photos, write annotations and formative review.	Computer
5:00	Finish	

Task 3: plan of production stages for Prototype 1: Acetate bubbles (1 hour)

Plan

1. Using 'toyshop' acetate bubble-blowing equipment, place a blob of acetate of the chosen colour on the end of a straw tube and blow to desired size and shape. Using wet hands, remove bubble and seal with fingers.
2. Repeat twice, creating three bubbles of different colours (red, blue, green) and proportions.
3. Stick bubbles together in formation corresponding to sketch.
4. Stick thread to top bubble and suspend the creation.

Assessor comments

AO1 The learner demonstrates a wide knowledge of materials and understanding of processes in their production plan, which is detailed and realistic. They have included accurate costings and identified potential hazards with appropriate solutions for safe working.(AO4) They also give a rationale for making two prototypes. Attempting two prototypes in the time allowed is ambitious but the learner's careful time-planning and intention to use only basic materials and simple techniques suggests the plan will work.

AO2 The learner is right to plan sufficient time for assembling and writing their formative review but they could raise their mark by identifying possible difficulties or pitfalls that might occur during the construction process and providing appropriate contingency plans.

Prototype 1 continued...

Cost

£18 for bubble-blowing acetate

Risk assessment

Fumes from acetate can be dangerous if breathed in for a prolonged amount of time so I work in a well-ventilated area or outside.

Note

The bubbles may not join together. Even if they do, they may only last a short time (hours, maybe?) before deflating so I will need to photograph them before they deteriorate.

Task 3: plan of production stages for Prototype 2: Papier-mâché bubbles (3.5 hours)

Plan

1. Inflate three latex party balloons to different sizes, approximately corresponding in proportion to those in sketch but scaled down a little.
2. Cover the balloons with thin torn-up tissue paper and flour-and-water paste to create papier-mâché forms.
3. Paint the forms with gouache.
4. Allow papier-mâché forms to firm up a little (use a hairdryer if necessary), then burst balloons inside and remove them.
5. Stick forms together in desired 'cluster' position as in sketch.
6. Suspend from a piece of string.
7. Poke an LED light in the top (biggest) sphere to assess how light shines through.

Cost

£1.25 for pack of latex balloons

Risk assessment

1. None of the materials are dangerous to use. I am not allergic to latex balloons or flour. Risk: none.
2. Hairdryer could cause electric shock if handled with wet hands. It could burn hands if over-used or cause a fire if placed on a combustible surface. Safety measures: handle with clean, dry hands and place on a heatproof cork mat if hot. Risk: very low.

Task 4: developing and reviewing a prototype

Evidence:

You could include in your digital portfolio:

- annotated images of production techniques applied when creating the prototype
- annotated images of your prototype
- a written / word processed formative review of your production processes and techniques.



Task 4:
Prototype 1

blown
acetate
bubbles



The acetate was trickier to use than I had anticipated. Sometimes the blob stuck on the end of the straw and only inflated partially or not at all.

Sometimes as the acetate inflated it developed thin areas or holes through which the air quickly escaped causing the bubble to burst or go crinkly and shrivel up. I tried to pinch the acetate together to plug the holes.



Assessor comments

AO4 The learner demonstrates technical proficiency in handling acetate and paper-mâché, producing excellent prototypes that correspond closely to the original sketches. They have recorded their progress meticulously, using copious photos and annotations, including what went wrong and any amendments made to their original designs in response.

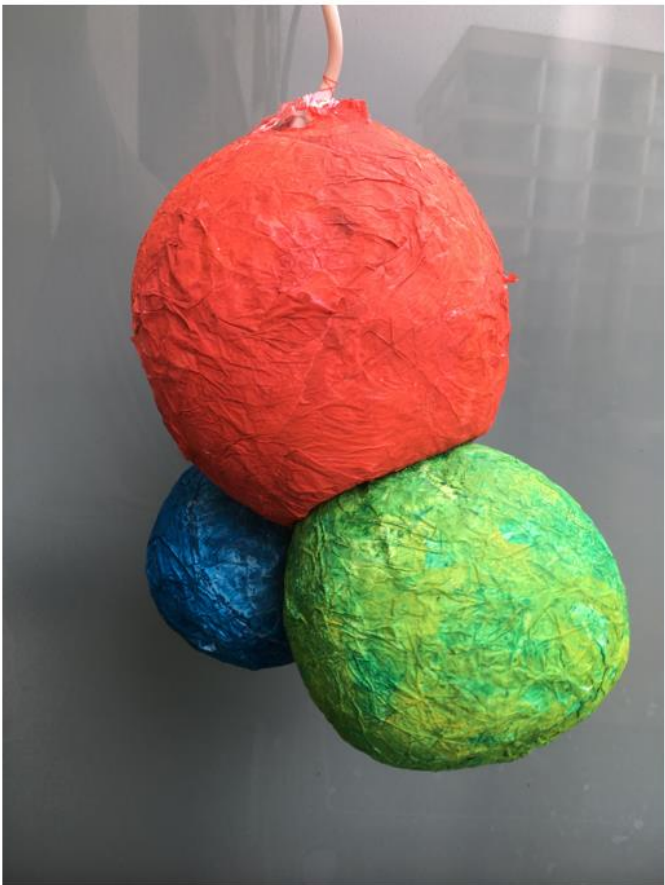
Both models create a convincing impression of the intended design and work well alongside each other.

AO5 The learner demonstrates an excellent ability to analyse the successes and failures of their prototypes and evaluate their overall effect. They omitted to mention how neither prototype had accurately spherical bubbles but they discussed in detail the unintended rough surface of the paper-mâché model and how it could be explored to advantage.

Task 4 Prototype 1: production processes, techniques and annotations

- Sometimes, after blowing a bubble, the acetate stuck to my wet fingers when I tried to remove it from my hands. The bubbles also stuck to any surface I put them on, so I suspended one bubble on string then stuck the others to it.
- I was sometimes able to blow one bubble and then stick another to it but by the time I had blown a third bubble then often the first had started to deflate and shrivel. I took photos straight away.
- As the acetate dried it shrivelled then became brittle and disintegrated into small pieces. It is not something I could transport and display to someone at a later date so only useful to making then photographing straight away.



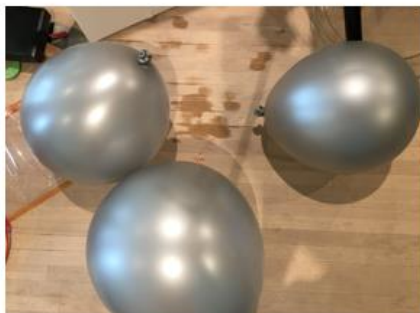


Task 4
Prototype 2

papier-mâché
bubbles



Task 4: Prototype 2 production processes, techniques and annotations 1



The initial making went well. The tissue paper wrinkled a bit when wet giving a ruffled texture that I had not anticipated but it made quite an interesting surface. By painting gouache onto already wet papier-mâché, I had to use a hairdryer to hasten then drying process.

Task 4: Prototype 2 production processes, techniques and annotations 2



I discovered I had failed to tie the end of the latex balloon tightly enough and while I was working on the other bubbles, the first one slowly started to deflate. The papier-mâché stuck to the balloon and imploded as the latex shrivelled. I remade it with a fresh balloon.



Once the bubbles had firmed up I popped the latex balloons and removed them.



I glued the bubbles together with PVA.



I held the bubbles in place to dry with an old bit of bicycle inner tube.

Task 4: Prototype 2 production processes, techniques and annotations 3



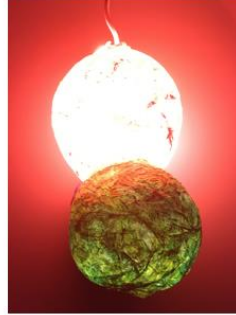
I made small hole in the top of the red bubble and poked an LED Christmas decoration inside it. But no light came through the tissue paper.



So I tore open the top of the red bubble and stuck a ceiling light fitting inside. To stop the bubbles from falling off I used a needle and red thread to sew up the top of the bubble.



It worked!



Task 4: Prototype 1 formative review
acetate bubbles

I think that using acetate gave a good feel of what the final piece might look like, conjuring the desired smoothness and translucency. It also showed clearly the lovely geometric shapes created when bubbles stick to each other.

The drawback was that I could never show the actual prototype to a client or transport it because it disintegrated so quickly. Photos would have to suffice.

I could not inflate the bubbles to full size (the red bubble was about 12cm in diameter) but this was not a problem: a small scale worked fine.

Crucially, there was no way I could insert a light source to show how light might come through.

Task 4: Prototype 2 formative review
papier-mâché bubbles

I'm very glad I made two different prototypes. The papier-mâché bubbles looked clunky when compared with the delicacy of the acetate bubbles but gave a better sense of the form and looked really good when illuminated, giving a good sense of how a ceiling light would function.

The tissue paper crinkled more than I had anticipated. Perhaps if I had used PVA glue instead of flour-and-water paste and spray-painted them instead of using gouache, then the bubbles would have been smoother. Nevertheless the crinkles, though unintended, were attractive in their own way. The red sphere, when illuminated, reminds me of volcanic lava and suggests further ideas for lights.

The scale worked fine (the diameter of the red bubble was 18cm) and gave a good indication of the physicality of the light.

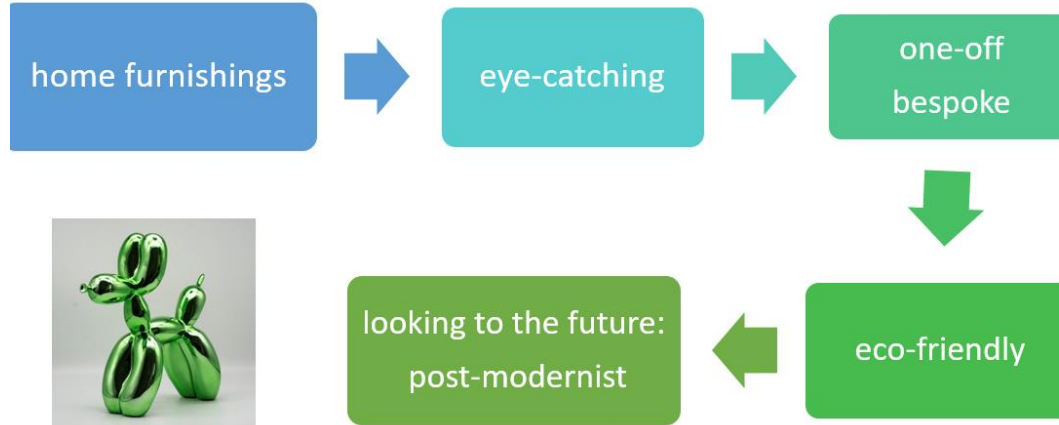
I was worried when the LED light didn't show through at all so had to change my plan and use a conventional suspension light fitting. That worked really well, even if my terrible sewing made the top rather messy.

Evidence:

You could include in your digital portfolio:

- a digital presentation in appropriate file format
- completed digital portfolio in appropriate file format.

brief: item for shop window



the 'Bubble' light



diameters of bubbles: red 46cm, green 37cm, blue 33cm

- pendent light
- made from polycarbonate recycled water bottles
- re-using a waste material that would otherwise go to landfill

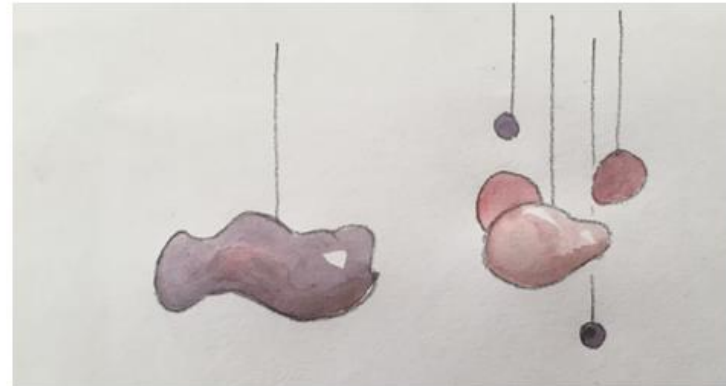
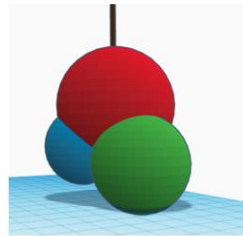
Assessor comments

The learner has produced an attractive presentation that skilfully captures with clarity and brevity how they responded to the brief. The presentation is suitable for showing to a client though a manager might find it too minimal if viewed without having the digital portfolio to refer to alongside it.

The learner's review and discussion of their design production skills is logical and comprehensive and their summative review very personal showing they have a deep engagement with the design process in general. Both contain highly detailed and relevant information. The learner demonstrates an excellent ability to analyse the successes and failures of their design and evaluate how well it meets the brief, while still continuing to think of further issues to consider.



- translucent bubbles
- suspended from the highest bubble
- bright attractive colours to draw the eye even when not illuminated



- illuminated by low-energy LED lightbulb, 250 lumens
- possibilities for single illumination point or illumination in each bubble



- could form part of a wide range of lights in different shapes and colours
- displaying the main design with sketches of variants may draw in a wider audience

How I used my design production industry skills during this project

I firstly *noted the information I had been given* and *identified the key needs* of the client. After noting a few *initial thoughts and questions* I jotted down the *knowledge I already possessed* regarding design movements that the client wished to be referenced. A *mind map* helped me *prioritise* the most important elements, then I *researched* the design movements, *collected images* and *noted references* to help me back up and *check* my initial ideas were on target.

The research threw up lots of further ideas in my head. When I *sketched three possible design solutions*, I collected them next to *images that inspired the designs* and added *annotations* to demonstrate how they related to each other. In my email to the client, I suggested possible *materials* for my ideas bearing in mind the materials had to support the eco-friendly credentials of the client. When *developing* my chosen design, I consciously considered *design principles* such as *shape, repetition, proportion, colour, contrast* and *balance*. I added to this *practical considerations* such as *materials, dimensions, how the lamp would hang, how many lumens might be required, how the design might be varied or extended*.

I drew on my *knowledge* and *experience* when *planning* how I would build two prototypes: what steps would be required, what materials would I need, how long would each stage take and were there any risks that needed to be assessed and mitigated. I used *construction skills* to create the prototypes. I *recorded my progress* in photographs from the start, which was important as my first acetate prototypes deflated in seconds. I found that LEDs were not bright enough to illuminate my paper-mâché balloons but realized that I could *cannibalize* an existing light fitting to supply adequate light for the prototype to work. Attaching the light fitting exposed the fact that my sewing skills are poor and need practice.

Summative review of final design solution

I think the solution fits the brief. It is colourful and eye-catching, would draw customers in because it is literally illuminated and would hang nicely in a shop window. It's eco credentials are excellent as it is made from materials that would otherwise go to landfill. I worry that, although it is influenced by post-modernism, it is not overtly 'whacky' and the client may find it too 'tasteful' and insufficiently arresting. The design could be adapted with different shapes and colours to make it whackier or to tone it down and make it more subtle if required.

I would need to consider which bubbles would be illuminated: the top one, or all of them? All would be best but that requires some logistics regarding the construction and wiring of the cluster of bubbles. This might affect how the lightbulbs sit inside the bubbles. I would need to consult an electrician to discuss how the weight is distributed and any safety features to prevent the polycarbonate overheating.

Although I was initially disappointed with how the paper-mâché bubbles became crinkly, I now think that such a texture could be explored. The intense colour and texture of the red bubble resembles volcanic lava and I can envisage a range of 'lava lights' very different from 1960s lava lamps. I like the potential for developing the idea in many different directions, with ranges of colours, shapes and forms (wall lights, standing lights).

The initial idea came into my head very quickly. I realized that time spent looking at items in shop windows noticing designs has paid off: the Tom Dixon's 'Melt' lights immediately came into my mind, having walked or cycled past his shop on the canal countless times, plus looking at Ikea light bulbs. I realize that I'd been thinking and wondering how Dixon's lights were constructed for some time and wondering how Ikea bulbs could be used. I now see that the kernel of hundreds of ideas form in our heads but that it's only when we are presented with a brief we realise how much accumulated knowledge and thoughts are already there.