design strategies

(or 'how to teach design')

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what do we do?

- Working in a variety of schools **every week**
- The **Design Museum, London** (write and deliver secondary CPD)
- The **Victoria and Albert Museum, London** (write and deliver CPD)
- The **Design Council** (National 'Design Skills' advisory panel and chair of schools steering group) including **chief moderator Design Mark**
- Teach **Masters Degree** in design education
- Qualifications and Curriculum Development Authority **QCDA**
- **IET Faraday** STEM materials (write and deliver)
- Detroit area Education Department, **USA**
- South East Asia International teacher's conference, **Brunei**
- Buffalo State University, New York **USA**
- **LTS** - Learning and Teaching **Scotland** (write learning materials)
- **D&T Association** (write publications, deliver presentations, deliver CPD)

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## session objectives

- to explain the context for the introduction of design strategies

- to provide various examples of design strategies that can be used with students

- to provide opportunities to explore these strategies

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starter activity

- you have 5 minutes to arrange yourselves into a line - from who took the longest to travel to Gent to who took the least amount of time.
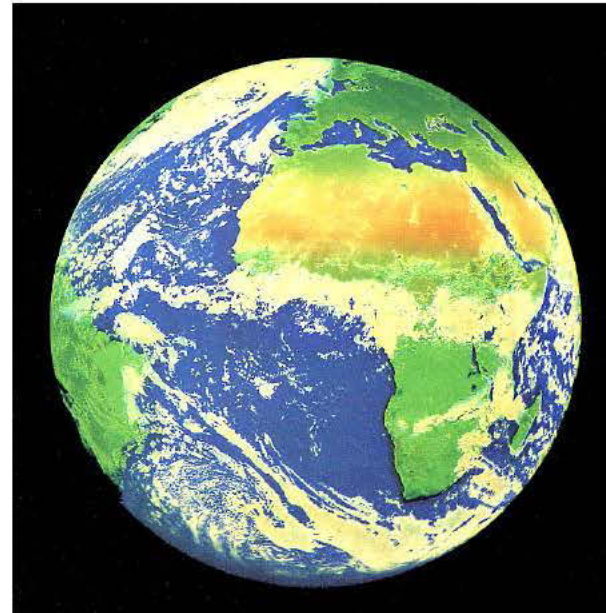
'our children don't like designing they only like making!'

design strategies in UK education

- Design and technology: Framework and training materials - national strategy 2004

- http://nationalstrategies.standards.dcsf.gov.uk/search/secondary/results/nav:50796

why design strategies?

OK, on the sheet of A3 paper, sketch 5 different ideas for your ....

Ok, with that wood, go and make 5 different joints for a ....

- OFSTED have said year on year that D&T teachers are good at teaching 'how to make' but poor at teaching 'how to design'

- not only do we teach it badly we use it as a punishment!!

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- We are going to take you through a sample of design strategies developed for design and technology education

- Some come from design industry and others from within the education sector

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starting points -
designing for the individual user

- groups of three/four - using number given to you in the 'time line' activity

- tell your group one very interesting fact about yourself

- then tell them a hobby you have

- Taking each person in turn using the two pieces of information they gave to think of suitable product for that person.

  For example - if my interesting fact is I once danced with Kylie Monogue and my hobby is marathon running - the product could be something to listen to Kylie while I am out running

- you now need to decide as a group which of your products has greatest commercial potential

starting points - what next?

- look at the photographs and ask yourself what's happening here?

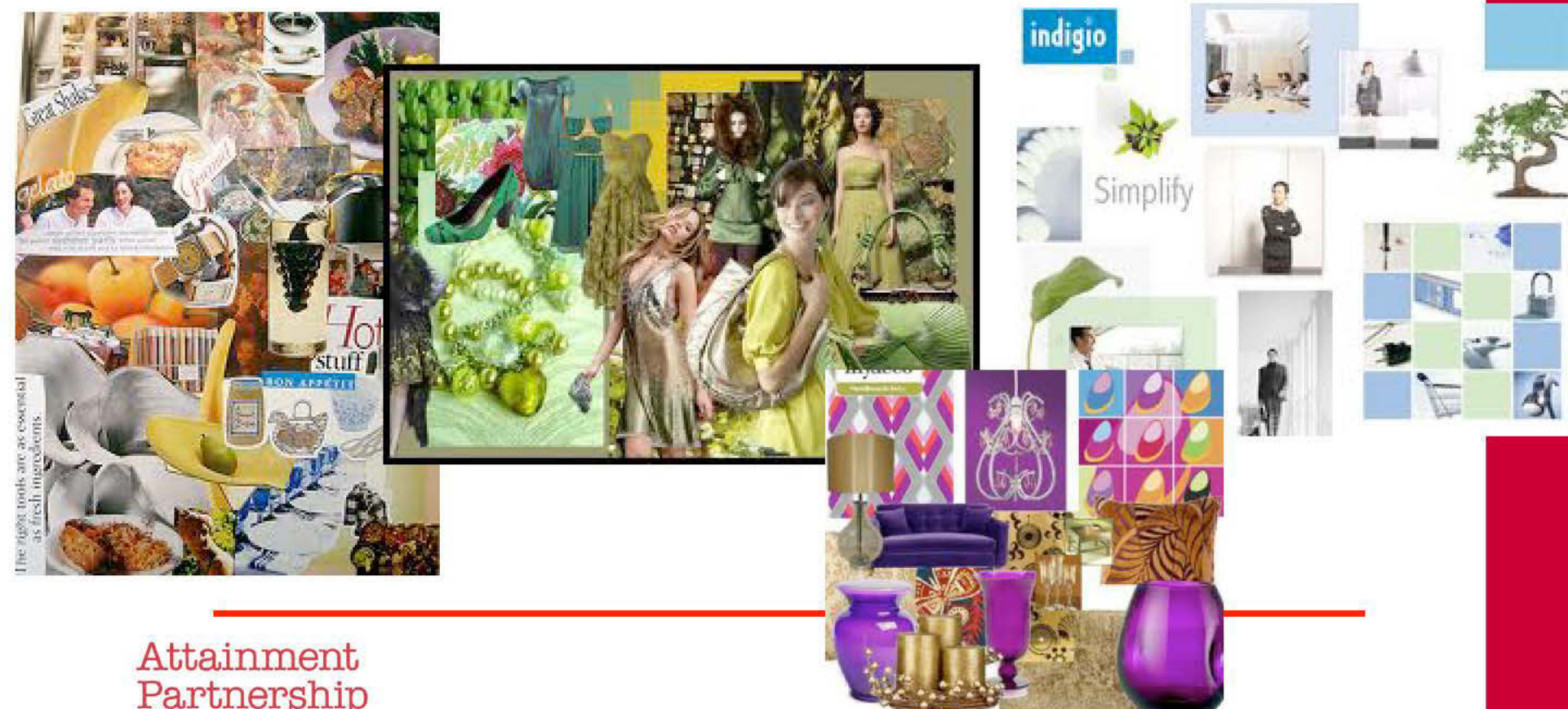- as a designer, how could you influence what happens next?
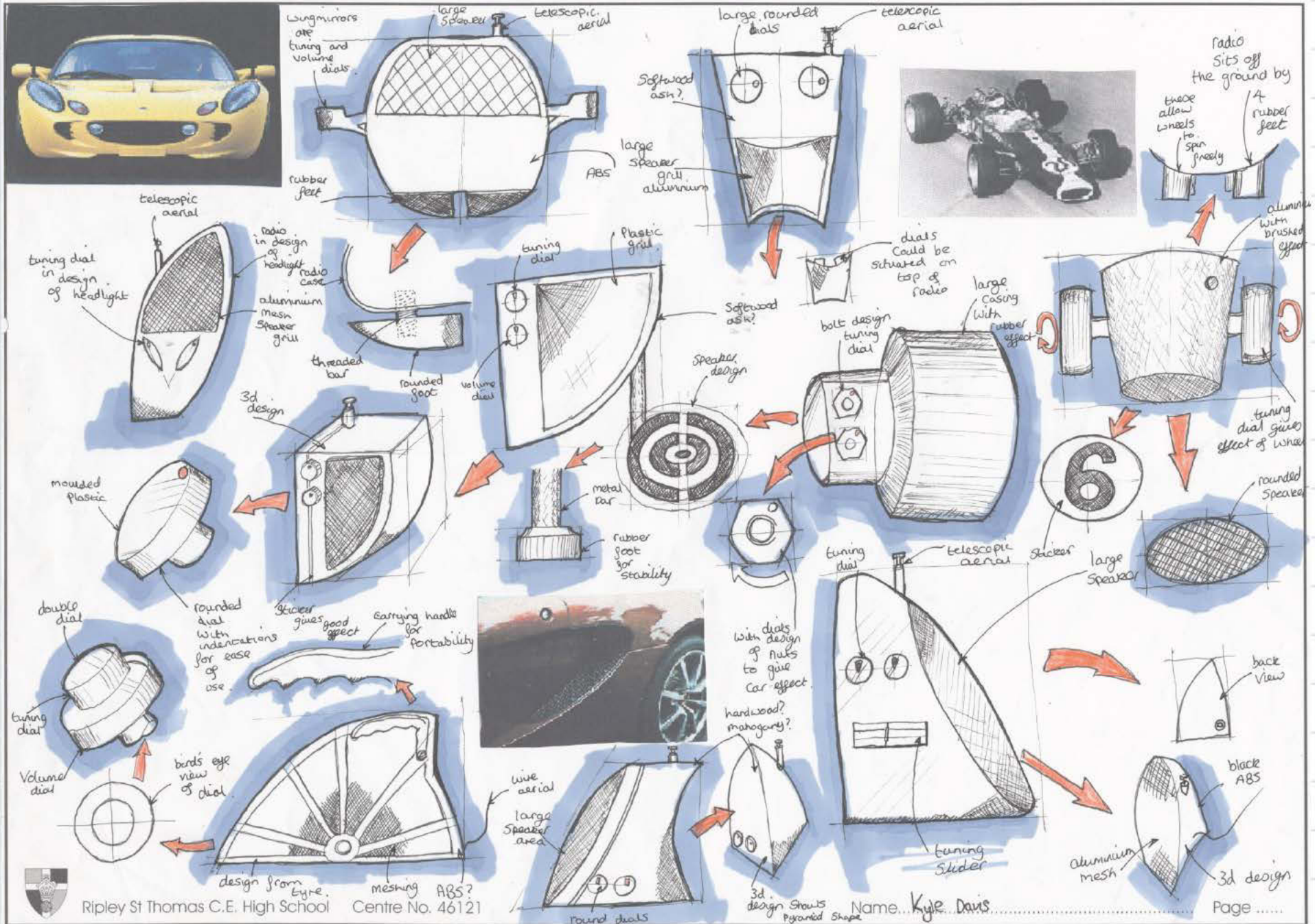
Inspiration - the 'scribble'

- Simply take your pencil and scribble onto your paper. Look for shapes that might be a starting point for a new design

- Find ideas for:

  An evening bag
  A kitchen utensil
  A chair

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Inspiration: mood boards

Create ideas, shapes, starting points from mood boards

wingmirrors are tuning and volume dials

large Speaker

telescopic aerial

large rounded dials

telescopic aerial

radio sits off the ground by

these allow wheels to spin freely

4 rubber feet

rubber feet

ABS

Softwood ash?

large Speaker grill aluminium

dials could be situated on top of radio

aluminium with brushed effect

telescopic aerial

radio in design of headlight

tuning dial in design of headlight

aluminium mesh Speaker grill

radio case

threaded bar

rounded foot

tuning dial

Plastic grill

volume dial

Softwood ash?

Speaker design

bolt design tuning dial

large casing with rubber effect

tuning dial gives effect of wheel

3d design

mouLded Plastic

metal bar

rubber foot for stability

6

rounded Speaker

double dial

tuning dial

Volume dial

rounded dial with indentations for ease of use

sticker gives good effect

carrying handle for portability

birds eye view of dial

tuning dial

dials with design of nuts to give car effect

hardwood? mahogany?

telescopic aerial

sticker

large Speaker

back View

black ABS

wire aerial

large Speaker area

tuning slider

aluminium mesh

3d design

design from tyre.

meshing ABS?

3d design shows Pyramid shape

round dials

Yr 11 Resistant Materials

Inspiration: from nature

Inspiration : from the built environment

Creativity: word association

- Sort students into threes
- Hand out word cards
- Alternative names –e.g bike = human–powered vehicle
- Mix cards up and hand out to students
- Discuss potential ideas for the product
- Quick sketch plus annotations – if necessary

Creating a range of ideas- morphological analysis

- list criteria for a given design brief then generate as many 'solutions' to each criteria

- this leaves you with a matrix of potentially hundreds of ideas

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Visual representation - 'building blocks'

resources - variety of children's construction bricks

- in pairs sit back to back

- one person to make a simple shape using the construction bricks

- describe the shape to your partner who then sketches what they think it is

Visual representation - 'interpretation'

- Using 'design language' describe these products in detail to your partner

- Try and sketch down a visual representation of what you hear

- Compare and contrast

Re-designing : 'less is best'

'Reduce' the product in some way but keep the integrity of the design

- Materials used
- Components used
- Energy in production
- Applied decoration

Either through discussion or sketching

designing through modelling

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strategy nine - modelling exercise (activity 1)

Design a chair which is constructed by slotting material together
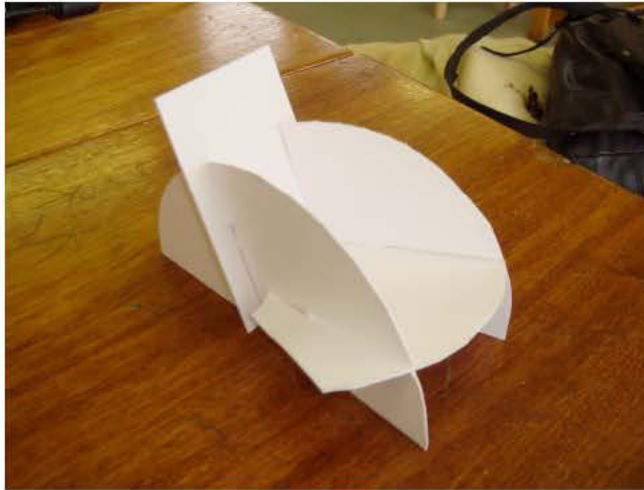
- Hand out a sheet of A4 card
- Use nothing but slots to put the card together to form the chair
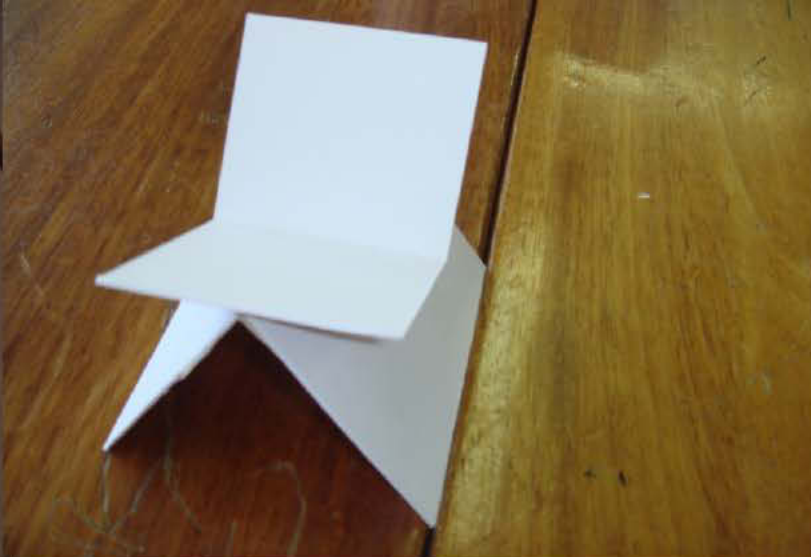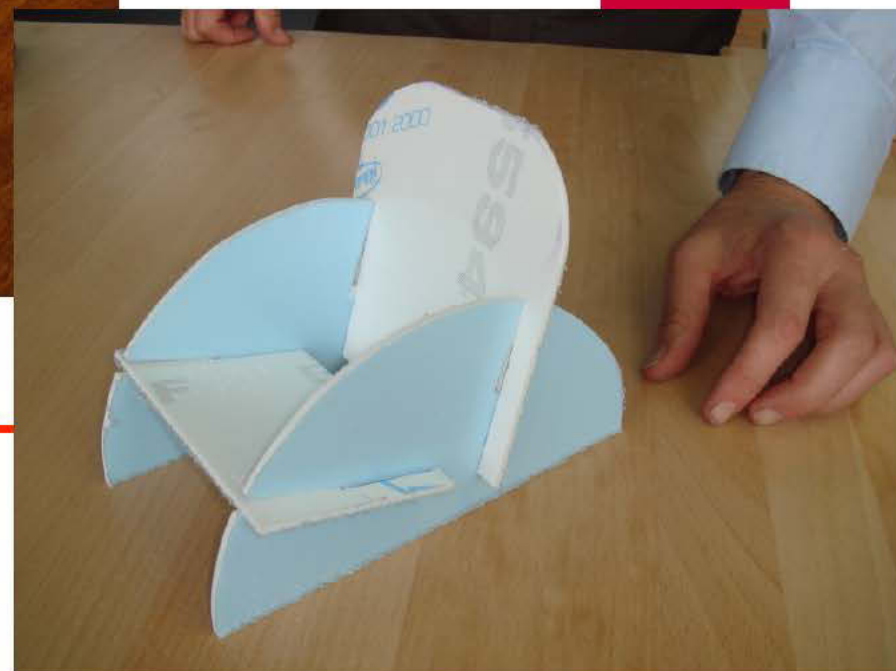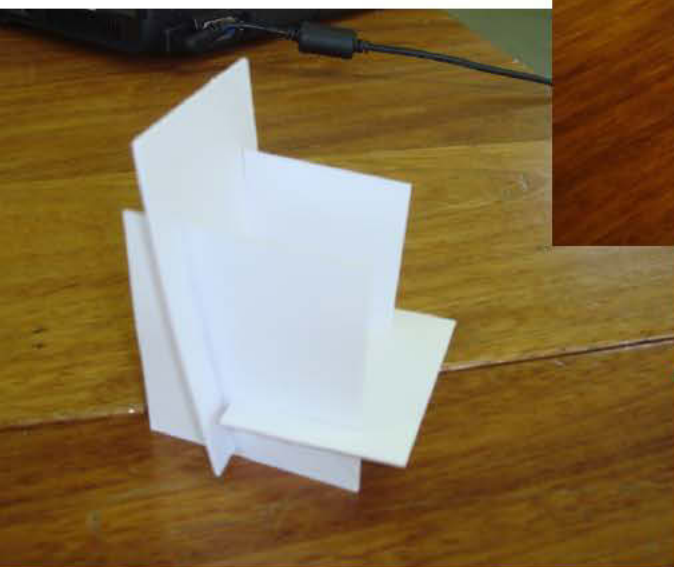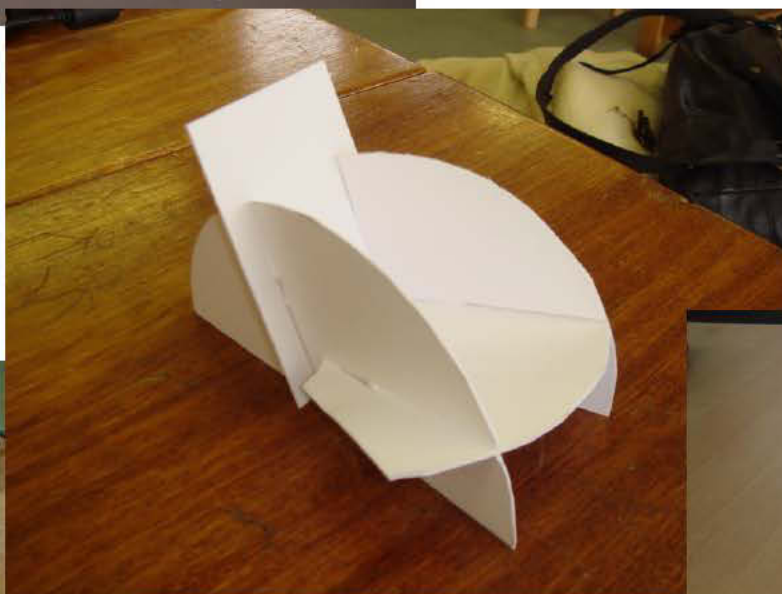
modelling exercise (activity 2)

- identify a model that you think has potential to be developed

- using that model as your starting point, develop it further

context

'unto this last' is a contemporary furniture company based in London UK, they specialise in plywood furniture and have an extensive range of products. They like working in plywood because it is very sustainable and structurally sound. They have a range of products that rely on slotting as the only construction method.

NC importance statement: *combine practical and technological skills with creative thinking to design and make products that meet human needs.*
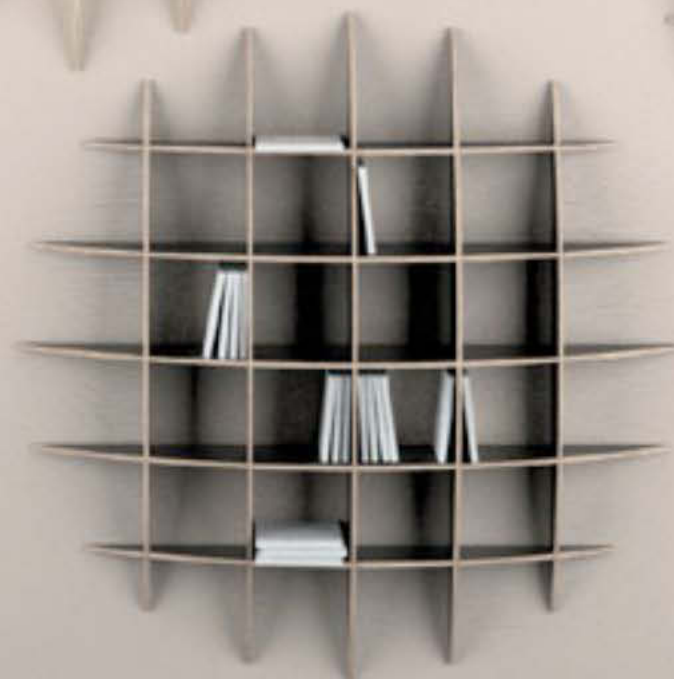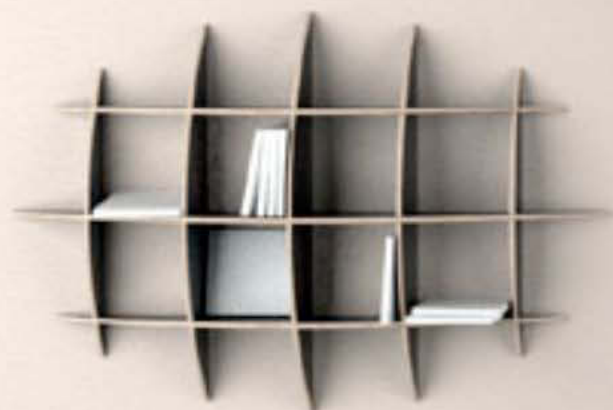
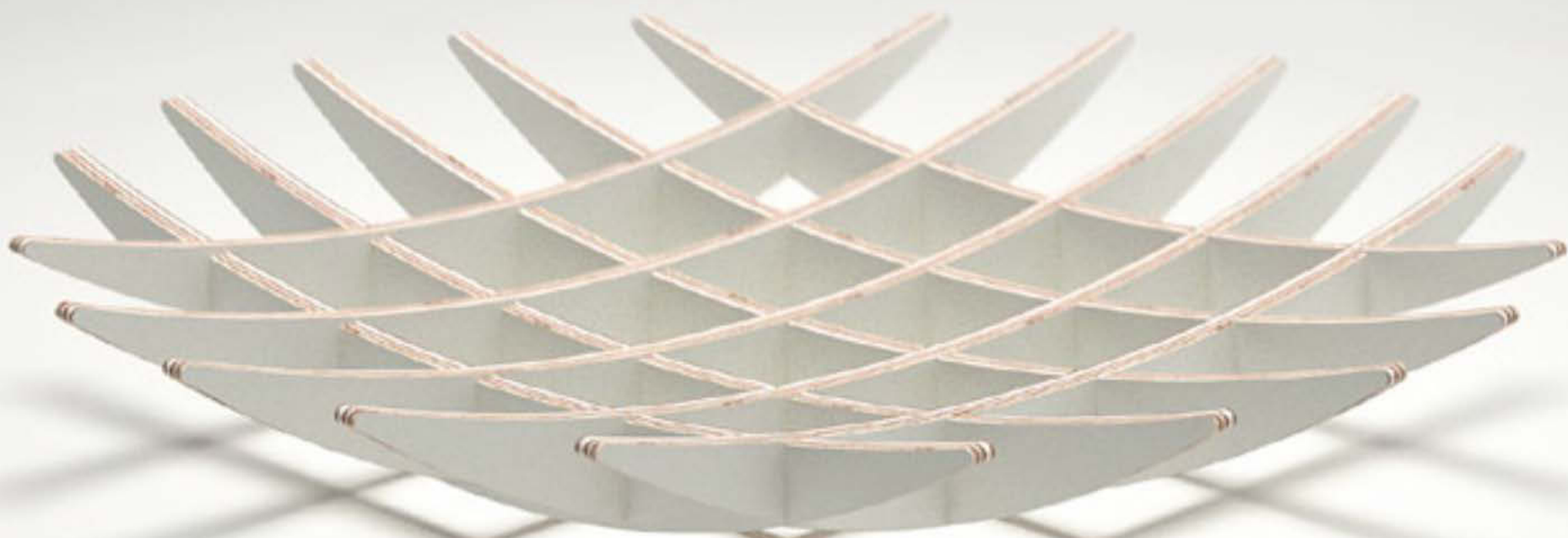*They evaluate past and present design and technology, and its uses and effects.*

Unto This Last
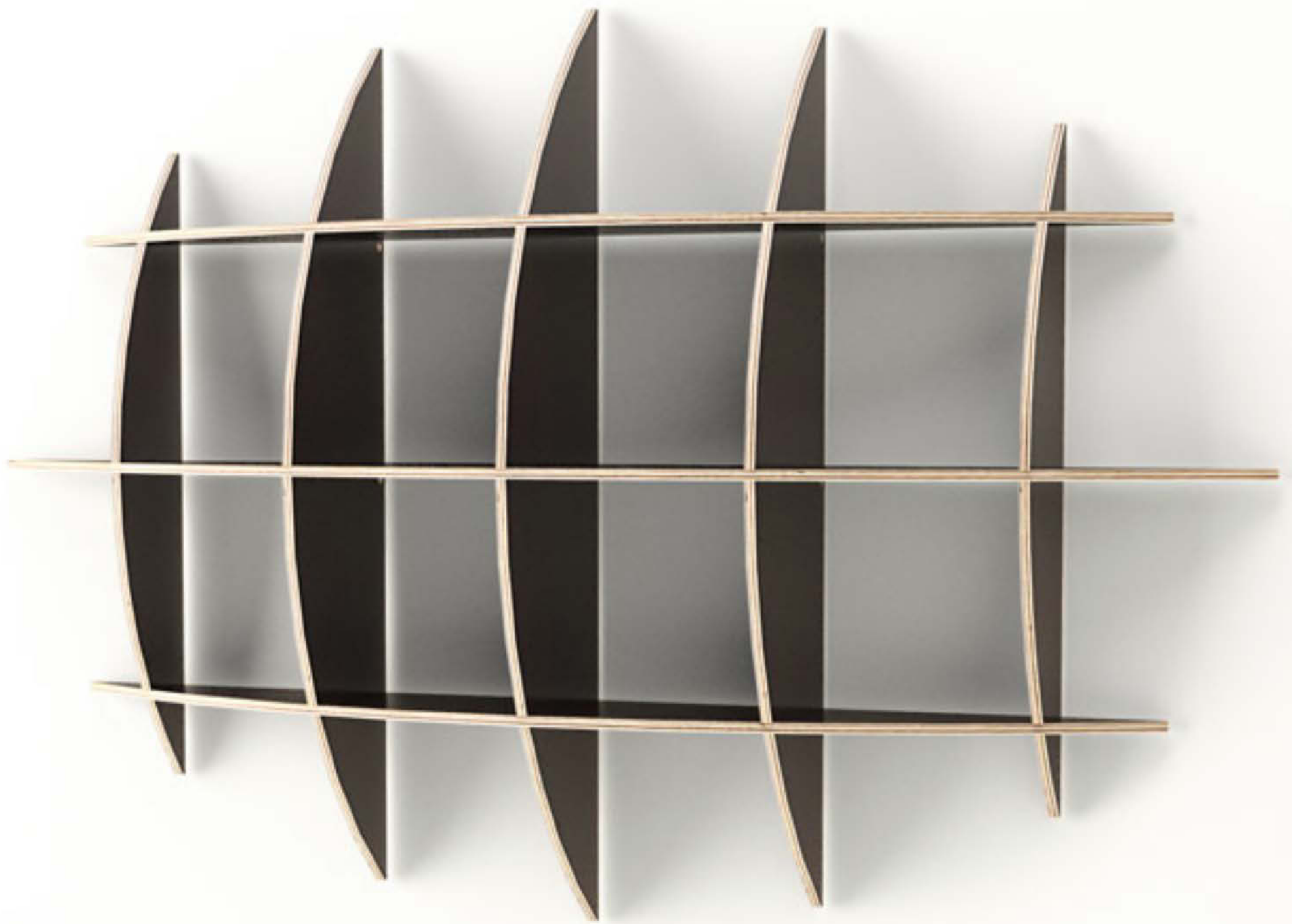
analysis of existing range (activity 3)

- C - cost (value for money / actual cost / relative cost)

- A - aesthetics (looks / style / colour etc)

- F - function (what is the intended purpose)

- E - ergonomics (size / comfort)

- Q - quality (is it appropriate quality)

- U - user (who is the target audience / is it fit for them)

- E - environment (where will it be used / is it environmentally sound)

target user (activity 4)

- where do they buy their groceries?

- where do they buy their clothes?

- what car do they drive?

- where do they holiday?

- do they have children?

- what's their income?

- what sort of house do they live in?

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SONY

△ □ ○ ✕

POWER ●
HOLD ●

SELECT   START

NOKIA

Gallery   Image

Options

MISS SIXTY

target user (activity 4)

- where do they buy their groceries? expensive (waitrose)

- where do they buy their clothes? designer (Paul Smith)

- what car do they drive? (BMW, Merc, etc)

- where do they holiday? (Middle East, Brunei)

- do they have children? (No, or have left home)

- what's their income? (high double income)

- what sort of house do they live in? (apartment, minimalist)

design brief (activity 5)

design a prototype product that can be presented to 'unto thee last' as a potential extension to their existing range

NC Key Concept: 1.3 creativity a, *making links between principals of good design, existing solutions and technological knowledge to develop innovative products and processes*

NC Key Process: 2a, *generate, develop, model and communicate ideas in a range of ways using a appropriate strategies*

2d, *use their understanding of others' designing to inform their own*

working in pairs, starting with card, developing in card and prototyping in foam-board ....

design brief

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