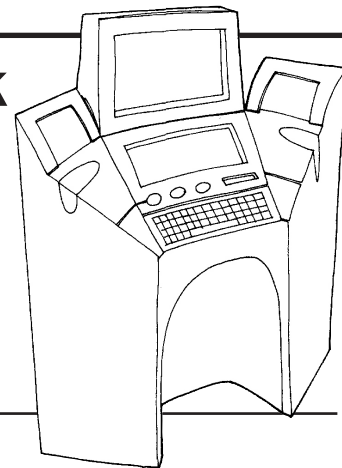


# Information communication kiosk



## *The big picture*

### Task

To design and make a model of a communication kiosk space to meet the needs of a hi-tech society.

### The story so far

Communication technologies now exist that enable users not only to talk to other people but to see whom they are talking to, to send electronic messages, to page people to come to the phone, to leave messages in both sound and pictures, to find information, and to buy goods and services. So the humble telephone box is about to be transformed.

The students' task is in two parts:

- to explore the communication and information needs of a particular person or group of people, and to develop the design for a suitable information communication kiosk;
- to make a presentation of their ideas to the rest of the class using 3D models and other media.

### Learning

#### Designing

Taking user requirements as the starting point for designing a specialised environment.

#### Making

Modelling with appropriate accuracy and detail.

#### Technical matters

Using structures to create an environment.

Using scale and proportion.

#### Other matters

Making multimedia presentations about design ideas.

### Design decisions

#### The sort of product

This has been decided by the teacher – an information communication kiosk.

#### The point of sale

The students can choose the location of the information communication kiosk.

#### The customer

The students can decide whom the information communication kiosk is for – this may depend to some extent on where it is located.

#### The performance of the product

The students can decide what the information communication kiosk does, although this should be kept within the bounds of available, or soon to be available, technologies.

#### The appearance of the product

The students can decide the appearance of the information communication kiosk so that it has appeal for the intended user and is appropriate for the location where it will be.

#### The way the product works

The students can choose the overall form of the kiosk and the major fittings, and decide how these are achieved through a variety of basic structural forms. Students can develop details of particular features.

#### The way the product fits together

The students can decide how the model is built up and how the different features are fitted into place – simply resting, slotted, glued, taped, held by Velcro®.

#### The materials, adhesives, fixings and components

For modelling materials students can choose from:

- thin card, thick card, corrugated card, Corriflute®, thin polystyrene sheet suitable for vacuum forming, fine dowel, welding wire, graph paper, coloured paper, string, Plasticine®, small pieces of mdf.

For assembly students can choose from:

- PVA adhesive, spray adhesive, double-sided adhesive tape, Velcro®.

For decoration students can choose from:

- marker pens, spray paint, rub-down lettering, transfers.

### Products

The teacher wanted the class to develop concept rather than detail models. She thought that finely ribbed card would be a good medium for modelling concept solutions and realised that it would be important for the students to be able to produce and assemble 3D forms from nets. So she started by revising with the class how to produce on paper nets of simple geometric forms complete with tabs and to assemble them carefully and accurately. The students then produced such nets in the finely corrugated card and explored how to cut out windows. The students also discussed with elderly friends and relations what they would find easy or difficult about using a communication kiosk. Three clear messages came back – large, easy to read screen, large easy to press buttons, comfortable seating.

Here are two concept models resulting from this work that address these issues. One has a large screen, a large tapping tablet and a range of large buttons. The other incorporates a seat as well as a large screen.



### Values

#### Technical

Students should consider the need for accuracy and attention to visual detail.

#### Economic

Students should consider the increasing role of communication in economic activity.

#### Environmental

Students should consider the effect of items such as phone boxes on the visual environment.

#### Social

Students should consider how communication through modern information technology affects people's relationships.

#### Moral

Students should consider the availability of information communication technology to all members of society.

#### Aesthetic

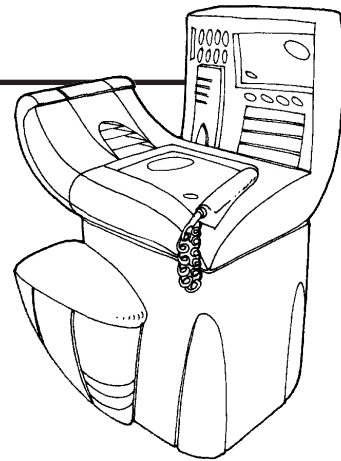
Students should consider the relationship between the style of the kiosk and its appeal to various users.

# Information communication kiosk

## *The detail*

### Sample brief

Design and make a model of an information communication kiosk that will be located in a public library to meet the needs of an elderly person who wants to keep in touch with her friends and family.



### Sample specification

#### What the product has to do:

- indicate clearly how the information communication kiosk will meet the needs of an elderly person who wants to keep in touch with her friends and family.

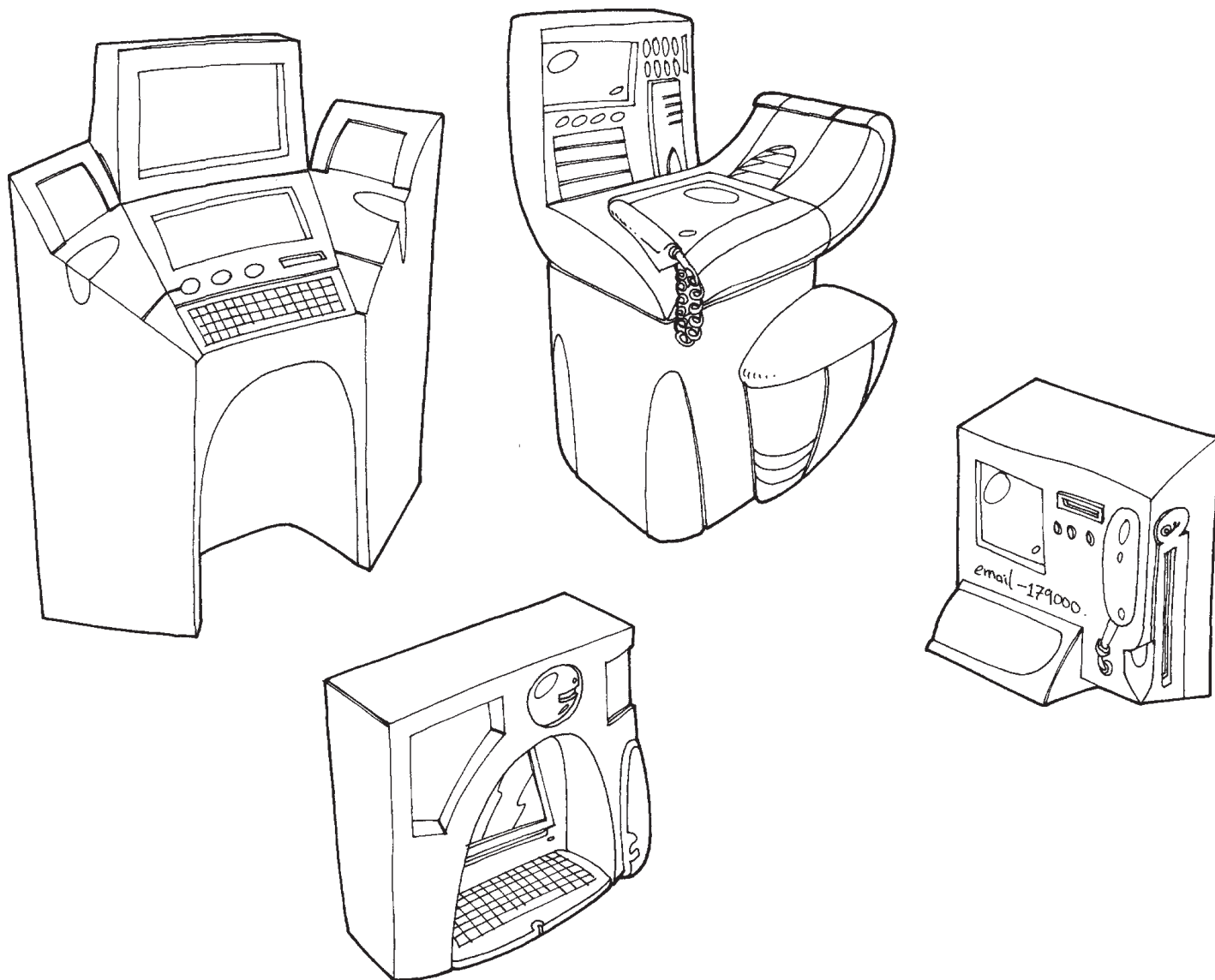
#### What the product should look like:

- be appealing to an elderly person.

#### Other features:

- be suitable for location in a public library.

### Starter sketches



## Nuffield teacher talk

'OK, I understand that you can just stand there and use all the fancy gear, but won't that take quite a time? Well, how long will it take to swipe in your smart card, confirm with the iris reading, find the website and place the order for the week's groceries to be delivered? Yes, at least ten minutes and that's assuming you can download the grocery list from your p.c. at home via the kiosk to the supermarket web site. So I think you need some sort of seat in there.'

'Let's see what I get in your kiosk then. Standard video phone so I can see whom I am talking to and they can see me. Where's the camera? Top right of the video screen. Why there? I get it, so that they see you looking at them and vice versa. How do I dial? Two choices: either punch in the number with the buttons, or just speak in the number. What if I want to ask directory enquiries for a number? Just talk to the screen – the kiosk is on line to a big database. I just have to say country, county, town, name and postcode, if I've got it, and it'll give me a list and I say which one and it dials automatically. Look, what happens if I'm a low-tech person, how will I know what to do? Oh! holographic AI customer assistant to answer all the questions and hold my hand. I think that's going a bit far. You do need to think through a "how to use me" panel.'

'I like the quick sketches of your user interface. But they don't show much in the way of detail. Do you think they'd actually work? Well, are the buttons the right size, the right distance apart? Will a user be able to understand the symbols? It's difficult to tell from the sketches. So what can you do to find out? That's right – drawing it bigger would be a first step. And you could use those models as a basis for vacuum forming. How? Easy. Draw the overhead view exactly to scale and make it 3D by adding the raised parts – screen and control panels, say. Then just vacuum form over it. Add small details like buttons and symbols afterwards.'

'OK, I'm at the station and I want to find the kiosk. How will I know where it is? You've got a sign that goes on the top of each kiosk. OK, show me. It's just an idea at the moment. Well let's see if we can turn the idea into a sketch. You talk and I'll draw. Here's your kiosk, just a rectangle, OK? I'll draw three. What shapes could your sign be? A circle – fine. Let's put a circle on the first one. Or a triangle? OK – here's a triangle. Or a long thin egg shape? OK – we've got three possibilities now. You're working as a team of three, so one of you take the circle, one the triangle and one the egg shape? Draw it out quickly three times and add things to each one so that by the time I come back you've got nine ideas to show me.'

## Resource Tasks

### General design

For the first Capability Task in Year 9:

SRT 6 *Writing a fuller specification*

SRT 31 *Graphs*

SRT 39 *Evaluating outcomes – Is it appropriated*

For the second Capability Task in Year 9:

SRT 7 *Research*

SRT 20 *Harmony and scale*

SRT 27 *Modelling with CAD*

### Focus area design

SRT 33 *Using system diagrams*  
(if not already tackled in Year 8)

SRT 34 *Understanding system interfaces*  
(if not already tackled in Year 8)

## Communication

CRT 12 *Presenting room design*

### Making

RMRT 9 *Designing containers to be made by vacuum forming*

### Technical

RMRT 12 *Understanding forces in structures*  
(unless tackled in Year 8)

RMRT 13 *What makes a beam bridged*  
(unless tackled in Year 8)

RMRT 14 *Understanding balance* (unless tackled in Yr 8)

RMRT 15 *What makes a framework?*  
(unless tackled in Year 8)

RMRT 16 *Modelling structures* (unless tackled in Yr 8)

RMRT 17 *Modelling how a handle might work* (unless tackled in Year 8)

## Case Studies

Interior design, (photocopiable).

## ICT opportunities

Use the Internet to find out about the latest communication technologies. Try putting 'communication + technology' in the search engine. Look directly at <http://innovate.bt.com> (select 'showcase') <http://www.assistivetech.com/prod>.

Use CAD and a printer to produce a corporate identity for the kiosk, including logo, signage, smart card. Use CAD and a printer to produce 'Getting Started' information for the user. Use CAD to present 3D visualisations of the kiosk in use.

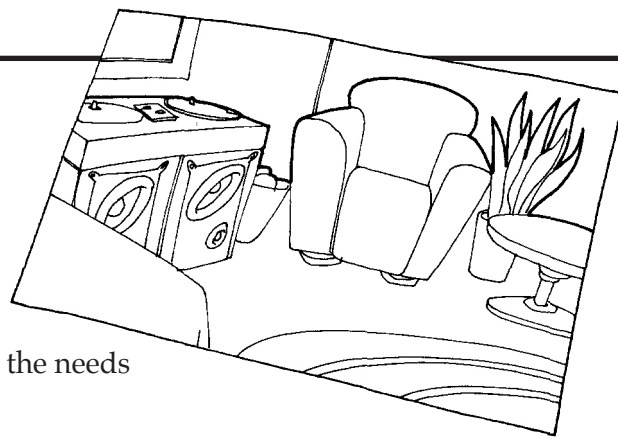


# Live-in design

## *The big picture*

### Task

To design and make a model of an interior living space to meet the needs of particular users.



### The story so far

Many design consultancies specialise in the production of accommodation and interior designs. They work closely with housing development agencies and produce models, information packs, design guides and samples for different living spaces – teenager's study bedroom, family living-room, single person's bed-sitter, etc. Student teams can take on this role and

tackle the task in two parts:

- explore the living-space needs of a particular group and develop suitable accommodation and interior designs;
- make a presentation of their ideas to the rest of the class using 3D models and other media.

### Learning

#### Designing

Taking user requirements as the starting point for designing living space.

#### Making

Modelling with appropriate accuracy and detail.

#### Technical matters

Using structures within an interior. Using scale and proportion.

#### Other matters

Making multimedia presentations about design ideas.

### Design decisions

#### The sort of product

This has been decided by the teacher – an interior living space.

#### The point of sale

The students can decide where the interior might be promoted – IKEA, Habitat, or a large department store like John Lewis.

#### The customer

The students can decide whom the space is for.

#### The performance of the product

The students can decide the performance of the living space through a consideration of the user's requirements.

#### The appearance of the product

The students can choose the appearance of the product so that it has appeal for the intended user and is appropriate for the retail outlet where it will be promoted.

#### The way the product works

The students can choose the fittings and decide how these are achieved through a variety of basic structural forms. Students can also develop details of fixtures.

#### The way the product fits together

The students can decide how the model is built up from the ground plan and how the different features are fitted into place – simply resting, slotted, glued, taped, held by Velcro®.

#### The materials, adhesives, fixings and components

Each working group will need a baseboard. The students can then choose from a variety of modelling materials:

- thin card, thick card, corrugated card, corriflute, thin polystyrene sheet suitable for vacuum forming, fine dowel, welding wire, graph paper, coloured paper, wallpaper samples, scrap textiles, string, Plasticine®, small pieces of mdf.

For assembly students can choose from:

- PVA adhesive, spray adhesive, double-sided adhesive tape, Velcro®.

### Products

The teacher set the scene of designing interiors for innovative living spaces developed by Roger Dean. The space is defined by curved surfaces – there are no flat walls. Each group was supplied with a curved pod into which they had to design an interior for one of these families:

*A single parent with two teenage children. They all have a keen interest in a wide range of music. There is an extensive music collection to store. They have a good quality entertainment system. They can all play musical instruments and they need to practise regularly.*

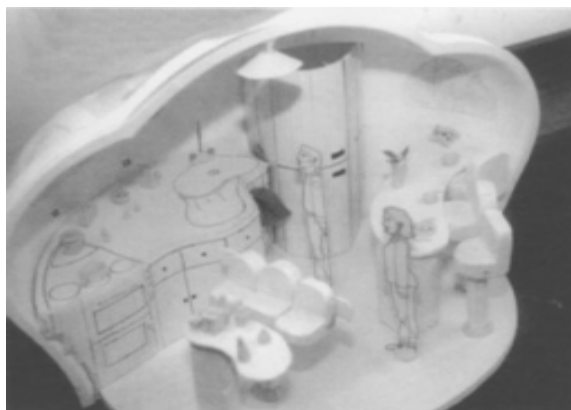
*A working couple. They are interested in a wide range of sports. They have friends to stay on a regular basis. They have a lot of equipment to store and a lot of certificates, trophies and photographs need to be displayed. They lead busy, active lives.*

*An elderly couple. They enjoy a wide range of art and craft-based hobbies and have an extensive range of materials and equipment to store. They have a wide range of quality books and need to display family and personal mementos.*

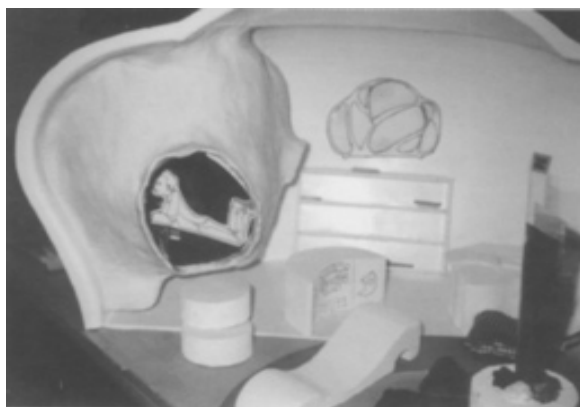
*Parents with a baby and a child under five years old. There are lots of toys to store. Child safety is a high priority. There is a need for a quiet relaxing space for the parents.*



Here the students designed a living space for a working couple.



Here the students designed a kitchen for a single parent with two teenage children.



Here the student designed a smaller pod to provide privacy as a teenager's bedroom.

### Values

#### Technical

Students should consider the need for precision in scale models.

#### Social

Students should consider the conflicting requirements of companionship and privacy when designing living spaces.

#### Economic

Students should consider the cost of maintaining any living spaces they design.

#### Moral

Students should consider the availability of well-designed living spaces to all members of our society.

#### Environmental

Students should consider the effect of the quality of the environment surrounding living spaces.

#### Aesthetic

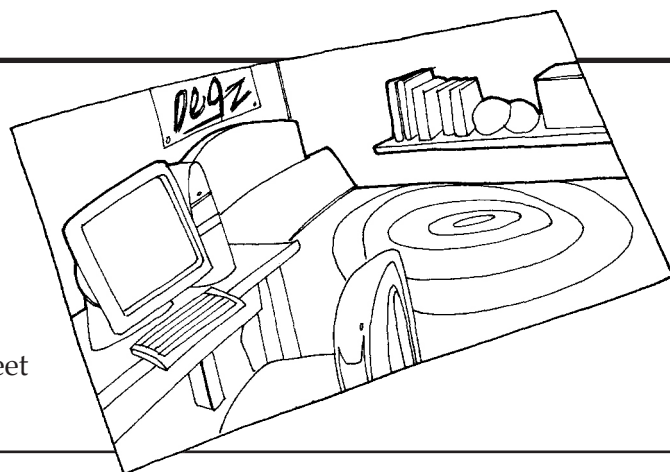
Students should consider the visual and tactile qualities of living spaces.

# Live-in design

## *The detail*

### Sample brief

Design and make a model of an interior living space to meet the needs of a young person living alone for the first time.



### Sample specification

#### What the product has to do:

- indicate clearly how the interior living space will meet the needs of a young person living alone.

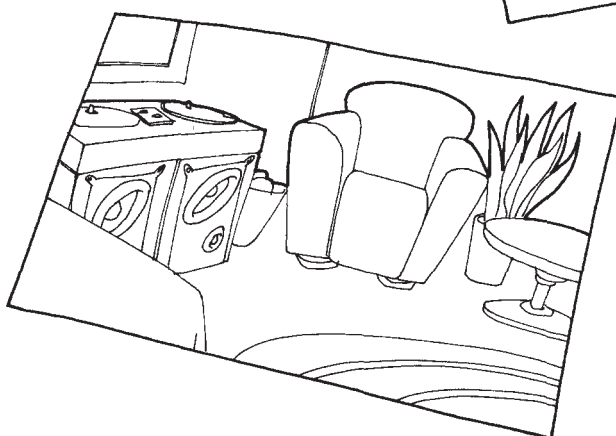
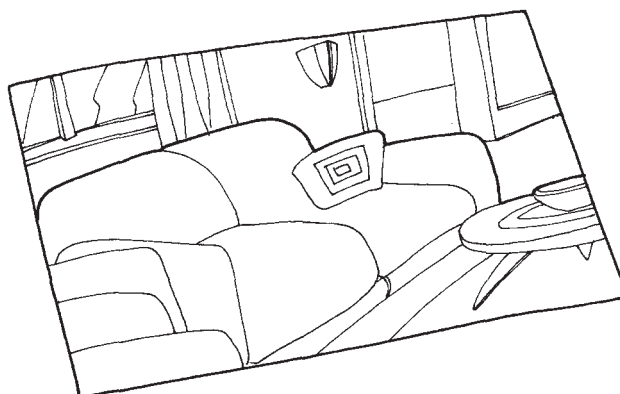
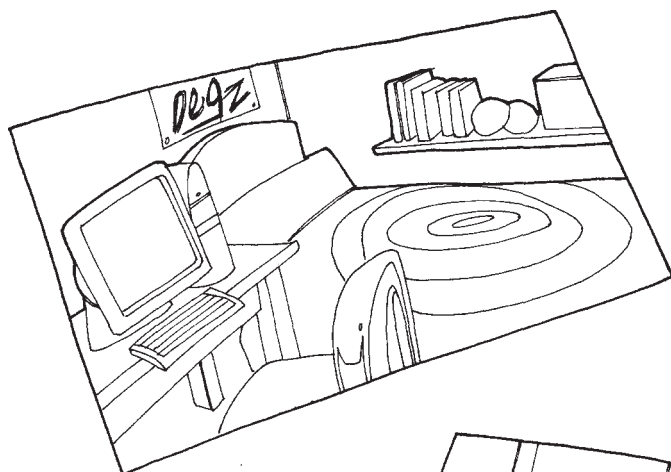
#### Other features

- be suitable for display in a store specialising in interior design.

#### What the product should look like:

- be appealing to a young person living alone.

### Starter sketches



## Nuffield teachers talk

'OK, you're confused about the scale business. The board you've got is 500 mm by 300 mm. If you work to a scale of 10:1, your room will 5000 mm (500 mm times 10) long and 3000 mm (300 mm times 10) long. That's 5 m by 3 m. So how big is that in terms of this classroom? To find out, take five big strides along the wall – that'll give you a sense of how long your room will be. If that's not big enough, you'll need to work to a different scale say 15:1 or 12:1.'

'So you want to put in a fitted desk under the window and curve round so that the user has desk on three sides. You're not sure how to hold it all up. And you want some under-desk storage. The important thing is that the desk doesn't bend when it's lent on or heavy things are put on it. So you need to think about it like a beam. You have to hold it up at each end and in the middle. You can use the storage units as a means of support. Try modelling it with a piece of paper for the top and U-shaped strips of card for the storage units. You'll need to get the storage units so the paper isn't bending anywhere under its own weight. You'll need to make sure there's some room under the desk for the user's knees.'

'You've tried using the wallpaper samples as wallpaper but it looks all wrong. In what way? The patterns are too big. Why do you think that is? What size of room is the wallpaper for? That's right, an ordinary sized room. How big is your model room? That's right: tiny – just one tenth of a normal room. How could you get the wallpaper right? Design some to the right scale. That could take a long time. How can you use the wallpaper that's too big? Yes – just make some like that only smaller. How could you do that? Using the scanner would be a start.'

'So you've got a floor plan but you're not sure whether it's any good. Well, what did you use to come up with the floor plan? You had a list of all the things you thought the person would need from their living space. Let's see your list. OK. I can watch the TV, listen to music, play video games, talk on the phone, have a bath, cook my tea, go to bed. What's missing here? Where do I eat my tea? No table or chairs anywhere? Where do I keep my clothes? Under the bed – is that convenient? And where do I go to the toilet – I can't see a loo anywhere.'

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## Resource Tasks

### General design

For the first Capability Task in Year 9:

SRT 6 Writing a fuller specification

SRT31 Graphs

SRT 39 Evaluating outcomes – is it appropriated

For the second Capability Task in Year 9:

SRT 7 Research

SRT 27 Modelling with CAD

SRT 20 Harmony and scale

### Focus area design

SRT 33 Using system diagrams (if not already tackled in Year 8)

SRT 34 Understanding system interfaces (if not already tackled in Year 8)

## Communication

CRT 12 Presenting room design

### Making

RMRT 9 Designing containers to be made by vacuum forming

### Technical

RMRT 12 Understanding forces in structures (unless tackled in Year 8)

RMRT 13 What makes a beam bridge? (unless tackled in Year 8)

RMRT 14 Understanding balance (unless tackled in Year 8)

RMRT 15 What makes a framework? (unless tackled in Year 8)

RMRT 16 Modelling structures (unless tackled in Yr 8)

RMRT 17 Modelling how a handle might work (unless tackled in Year 8)

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## Case Studies

Interior design (photocopiable).

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## ICT opportunities

Use the Internet to find out about different interior design styles and interior fixtures and fittings. Try putting '+interior +design' in the search engine. Look directly at <http://www.house.of.design.nl/framea.htm> (click on areas of left-hand frame).

Use CAD and a printer to produce ground plans that can form the basis for the interior.

Use CAD and a printer to produce designs for wallpaper and floor coverings.

Use CAD to present 3D visualisations of the interior in use.