The Advanced Innovation Challenge
The Advanced Innovation Challenge requires the candidate to research a set theme and then respond to a range of challenges under timed examination conditions.

New unit code F521
A theme is released in the September prior to the examination.

Each theme runs for a year enabling candidates to research and gather resources forming a personal handling collection. Sporting events is an example theme.
This paper is a seven-hour design challenge set by OCR. It is undertaken in two three-hour sessions over the period of one day and a one-hour session at a later date.

All sessions are completed on dates set by OCR.

The task assesses a candidate’s ability to be innovative, demonstrate flair, work with materials and apply knowledge gained throughout the AS course.
Design Challenge One

The event will be used to raise awareness of Health and Fitness through Healthy Eating and Physical Activity. They wish to develop a new creative range of healthy snacks to be sold at various venues.

- The food products should be designed with the health of consumers in mind and should enliven the taste buds.
- The product should meet nutritional guidelines.
- The product should reflect the diversity of participating countries.

Design Challenge Two

Many of the venues used for sporting events have no fixed seating or have limited seating areas e.g. for rowing and sailing events. Design a seat or seating system that can be erected quickly, that would still allow spectators to sit safely and individually or as groups to watch the games at such a venue.

- The events will be based on a strong sense of the concept of sustainability. Your design should reflect this.

Design Challenge Three

The opening ceremony will include a parade; design a fixed display to be activated at the end of this parade.

- The display should provide interest and enjoyment throughout the games and beyond.
- Any energy used to power this display should be minimal as the event will be based on a strong sense of the concept of sustainability. Your design should reflect this.
Design Challenge Four

Many of the venues used for such events have no fixed shelter areas. The UK weather is unpredictable. Design a product that can be used as a personal shelter/protection in the event of extreme weather, which would still allow spectators to watch the games.

- The events will be based on a strong sense of the concept of sustainability. Your design should reflect this.

Design Challenge Five

The opening ceremony will include a parade; design a costume that best embodies the spirit of the host country, i.e. the UK.

- The costume may be designed for either a male or female.

Design Challenge Six

The expected 300,000 daily spectators will be encouraged to travel by public transport. Design an interactive travel guide providing travel information to venues by public transport.

- This travel guide should seek to overcome language barriers.

Candidates select one challenge from the sheet related to the material area of their choice. There are several challenges dealing with all material areas covered by the specification.
A workbook, linked to a teacher script, will be provided for candidates to present their work in. This will have sections that allow the challenge to be undertaken in a structured manner, helpful to the candidates.
The activities and tasks that the candidates are required to complete over the six hours are ‘scripted’. Suggested timings for each section are given.
A minimum of three photographs are required. These must be taken at set times, processed and attached to each candidate’s workbook. A digital camera and printer provide the best solution.
Candidates model their most creative and exciting idea using a range of easy-to-handle materials.

Depending upon the activity they can choose from paper, card, thin plastics, fabric, wire, foil, thin metal sheet, clay, polymorph, foam board, food ingredients, components and joining devices.
During the Advanced Innovation Design Challenge

Students sit in groups of two, three or four – you may need to select the groups; you know your students.
At the end of the first three-hour session collect in the workbooks and keep secure (as you would an examination paper) until the start of session 2

At the end of session 2 collect in the workbooks and keep secure (as you would an examination paper) until session 3
You Should

- Supervise Health and Safety
- Ensure that Materials/Tools are available
- Read Instructions from Teacher Script
- Ensure appropriate conduct within examination – you will need an invigilator with you

Remember

- This is an examination not a teaching opportunity
- **DO NOT** advise students about their work
- Be professional
<table>
<thead>
<tr>
<th>1.1 Initial thoughts, design brief and specification</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearly outlines initial thoughts in detail, responding with an open mind, showing unexpected and/or challenging ways of thinking. Analyses problem in depth, responds in a way that allows scope for innovation. Identifies a user/market resulting in a clear design brief. Develops a detailed specification that identifies the key features of the product.</td>
<td>7–9</td>
</tr>
</tbody>
</table>
Session 1

1. **Explore the situation. What are your initial thoughts?**
   Use sketches and notes to communicate your thinking.

   - **Seating**
     - Sit on different surfaces
     - Different materials
     - Shaped like Olympics
     - Easy to fit together
     - Foldable
     - Blow up
     - Quick
     - Comfortable
     - Space to fit other items
     - Can be placed on a long dark table
     - Space to fit other items
     - Aesthetically pleasing
     - Encourage use of space
     - Sustainable
     - Life cycle analysis
     - Easy to transport
     - Reusable
     - Manufacturing process
     - Made in large quantities

2. **Which of your initial thoughts offers greatest potential to be taken further? Why?**
   - If the **seating** could fit together, it would reduce the space needed for people to sit in. They could be slotted together or closed, thus also encapsulating the idea of bringing people together which is one of the aims for the Olympics 2012.

   - They could be slotted in rows.

   - If it was foldable, it would make storage much easier and make transporting it around easier, for example carrying it to where you want to sit.

   - **Seating Styling**
   - Light and airy
   - Can be used around a table
   - Shaped like an Olympic brand
   - Foldable
   - Can be used around a table
   - Spectators themselves etc.

   - If the spectators themselves could set it up, it would mean work earlier for the Olympics workers.

   - **Clipping open/wide**
   - Setting into place
   - Whole of seating

   - Like a deck chair

   - This could be done in many different ways, and would work well with the flat竞赛 place.

Sections 3, 4 and 5 are at the end of this booklet on the fold-out page.
Session 1

1. Explore the situation. What are your initial thoughts?
   Use sketches and notes to communicate your thinking.

   [Sketches and notes on seating arrangement, foldable components, etc.]

   - Can be removed from area after spectators leave?
   - Inflatable?
   - Not stuck to assemble?
   - group assembled by slotting together, folds out & beach?

2. Which of your initial thoughts offers greatest potential to be taken further? Why?

   [Text discussing potential solutions]

   - Designed for individual to assemble themselves
   - Given to spectator at entrance so can choose own place to sit
   - May use make full use of space available so possibly have seats set out in rows and spectator assembles which one they want.
   - If seats already assembled, spectators given cushion on entrance.

   [Additional space for notes]

   - Chosen possibility: spectators carry own seats to assemble.
   - Could fold up into bag form, easy to carry backpack? (people probably would prefer to carry in hands.)
A design brief and specification is produced on the A3 foldout page. This is always visible throughout the challenge.
### 1.2 Designing

| Presents a wide range of innovative/creative initial ideas, using high-quality annotated sketching showing full details of construction/materials. |
| Presents a wide range of evidence to show the sources of inspiration and influences on the designing. |
| Presents a detailed and objective evaluation of ideas against the design specification and justifies all decisions. |
| Reflects on their chosen design and responds to feedback from others, making further improvements if necessary. |

**Mark**

9–12
6. Start designing. Use annotated sketches and/or models to show your ideas. Use annotated photographs to communicate modelling.

7. Ideas continued.

Seat can be carried on the back to make work easier.

Backpack opening is wide so that seat can be adjusted whilst the seat is being used.

Seat can be folded down to save space.

Backpack can be held in place by pre-cut and stitched straps further by velcro bands.

Removable bag sign.
6. Start designing. Use annotated sketches and/or models to show your ideas. Use annotated photographs to communicate modelling.

- pull handle upwards
  - plywood
- legs slide open along slits in base
- legs flip up and out of seat
- legs fold up and out of seat
- back then folds down so can carry easily
- polypropylene

- fabric strip stops legs being too far apart
- fabric
- outside of bag becomes seat
- as this is fabric it can fold in
- can be carried easily when folded up
- chair is hollow so is lightweight
- steel
- frame
- goretex
- steel
- legs fold upwards
- when legs are folded up it can roll up
- legs cover big surface area so stable
- steel
- fabric
- rubber
- handle
- can hold when handles curve
- can be carried in hand or over shoulder
- goretex
- can be carried in hand or over shoulder
- drinking holder
- held together with latches and
- when legs are folded up and can roll up
- legs fold up under seat as we
- lace
- beach
- drinks holder
- held together with latches
- when legs are folded up and can roll up
- legs fold up under seat as we
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6. Start designing. Use annotated sketches and/or models to show your ideas. Use annotated photographs to communicate modelling.

- Bright colours
- Gold, silver, & bronze models
- Flags from each competing country
- Olympic symbol
- Embellishment
- Use different fabrics for different effects
- Long train to eye-catch

7. Ideas continued.

- Front cover shape of underground logo cover will show which day the guide is for. One available for each day.
- Foldable map goes in here (same as map above with pop-ups etc.).
- Will contain images for language barriers etc. [Turn Over]
6. Start designing. Use annotated sketches and/or models to show your ideas. Use annotated photographs to communicate modelling.

Sunny Day:

- Pack can be put on the ground.
- Waterproof cover is in the bag.
- Bottom of pack opens up ground sheet is opened out.

Rainy or Windy Day:

- Weights not required.
- Contained inside bag.
- A weight, designed to sit on concrete.
- Spikes fold out and can be stuck into grass.

Rainy Day (Not windy):

- Weights not required.
- Spikes hold the waterpoof wind break in place. Prevents flapping.

Curved design allows the proper to come out.

Extra storage space

Zip pocket

Bag handle for mobility

Ground sheet rolls up into bottom of bag.
Ideas are developed and modelled and the challenge includes a presentation of initial ideas to a working group with opportunities to react to feedback.
Candidates will need to provide evidence of their job bag/handling collection and demonstrate how it has inspired their work.

This could be done using photographs.
7. What do you think of your ideas so far, how has your job bag helped to inspire/direct your ideas? Use annotated sketches and/or annotated photographs to explain.

- This chair inspired me for the shape of mine. It uses very few components which is good.
- This is the chair that inspired my folded chair made with interlocking sticks.
- This inspired my chair with the curved seat.

3. Which is your best idea? Justify your decision.

- I like the idea of using plastic bag of a bulb cover. (Reusable)

8. What do you think of your ideas so far, how has your job bag helped to inspire/direct your ideas? Use annotated sketches and/or annotated photographs to explain.

- This idea because it can be folded up easily. It has a back so is comfortable, and because the glass water will not be held in it, it will run through instead.
Feedback from other candidates is recorded and this helps to develop the design.

4 Reflect and Record
You will be asked to present your ideas (no more than 3 minutes).
Use this space to plan what you will say. Think about your brief, specification and key factors of your design.

- spec - compact - stack together
- pluck into two components & stacks
- transport & storing (not a million chairs)
- canopy - back rest
- all in 1 - no arm rests
- not too hard
- can leave cushion
- material choice - recycled plastic - reused
- umbrella - join using separate component

5 Feedback
Record any suggestions made by others. Identify further modifications that you could make in response to this feedback.

The man feedback I received about my design was about the functioning of the back rest joint.
People are inclined to lean back on the back rest it will most likely fall out, they advised that I use a different type of joint.

Indent on seat which basic rest sits into.
The backrest cannot be pushed out horizontally.
<table>
<thead>
<tr>
<th>1.3 Development and planning</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presents improvements, presents evidence of modelling, experiments, testing, making modifications to their design to define and refine it, thorough consideration of materials, components or ingredients and methods of manufacture. Produces a detailed action plan for Making, to include a list of materials/ingredients/resources etc</td>
<td>7–9</td>
</tr>
</tbody>
</table>
11 Developing your idea, improvements and modifications.

Use annotated sketches and/or annotated photographs to communicate your thoughts.

CLOSED

Pocket for belongings

Pocket for belongings

OPEN

Plaster head

Plaster head

Pocket for belongings

Magnetised strips.

Magnetised strips.

435mm

or could place 380mm wide rest in a line

Logo can be printed on back rest.

Anchors join together using hook on eye. Simple and enables a gap between

Magnets can be used to stick car parts together.
Developing your idea, improvements and modifications.

Use annotated sketches and/or annotated photographs to communicate your thoughts.

- The back opens up so that you can sit on it. The chair and lean back. There is a bar that holds the chair back up.
- The chair back also slides down as shown to make the chair design more compact and take up less space.
- This picture shows the chair when it is closed.
### Session 2

#### Review

Record any new thoughts about your design. Use annotated sketches and/or notes.

**Design Brief:**
- Can be connected
- Sustainable: when made in reality, would make it out of a recycled material.

**Design Spec:**
- Compact - separates
- Connect side by side
- Safe - sharp corners must be filed
- Comfy - could maybe add a removable cushion. Must be removable due to weather - not door use.

#### Modelling - Test, develop and refine your design proposal. You have 40 minutes to start modelling your design proposal

**Progress Report 1**

Problems you have come up against so far. What are the possible solutions?

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### Your Model

List the materials/ingredients you have chosen to make your prototype.

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Material/Ingredient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armrests</td>
<td>String</td>
</tr>
<tr>
<td>Frame and sliding mechanism</td>
<td>MDF, Carboxy</td>
</tr>
<tr>
<td>Frame of seat - plastic liner on top back support of leg</td>
<td>Cardboard</td>
</tr>
</tbody>
</table>

Show how these components could be joined/combined together.
3. Decision Time
Your Design Brief

I am going to design and model a... interactive lighting display for the parade. To entertain the crowd and get them involved.

4. Key Points:
Examine the contents of your job bag remembering your design brief. Identify key points, which will help you write your specification.

- Function
- Aesthetics
- Materials
- Maintenance
- Manufacture
- Environment
- Energy
- Ergonomics
- Safety

5. Your Design Specification
To be successful my product must...
- Adhere to the function of being able to move its roof off.
- Be attractive and fit with the 2012 Olympics theme.
- Look strong, safe, materials.
- Easy to maintain and look attractive and safe.
- Not cause environmental damage.
- Efficient in energy use.
- Be ergonomic for people; easy to move roof, well-built seats.
- Safe for use, clean and will suit outdoor.
- Must be able to cope with extreme weather.
- Seats must not be too small which may cause muscle increase.

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- Energy saving: using non-electric energy to be sustainable.
- Reusable: can be displayed not only for decoration but for smaller uses (domestic, office).
- Safety concern: avoid electric shock and any possible thread risks.

5. Your Design Specification
To be successful my product must...
- Have the risk of electric shock or even death in mind. Using energy for lighting display is a risk but we catch people's attention certainly (aware of children).
- The light must provide heat which would change the temperature of the display in a huge scale.
- To get the decorative display to be useful in domestic lighting, the product should be designed in any scale easily.
- Appearance should be colourful or have a unique shade. Because a parade is not only entertainment but can present certain theme or country.
3. Decision Time

Your Design Brief

I am going to design and model a outfit that the major fast fashion companies use in the UK. It reflects the spirit of the next country, welcoming all others to the UK.

4. Key Points

Examine the contents of your job bag remembering your design brief. Identify key points which will help you write your specification.

- flag, use of item, material, word, user market, female, male, adults, children, the Olympic flag, flame + lap stands out, dakar as it may rain.

5. Your Design Specification

To be successful my product must ...

- show all flag from each country, used in the Olympics
- worn by people participating in the opening parade
- Olympic flags on front and lap on back must stand out to show spirit of the Olympics
- dakar flag material as it may rain
- made for all ages, male and female

- all flag must be same size to show equal chance of each winning
- must be made of comfortable material that can be light
- easy for flexibility to wear for entire parade
- stretch produced, easy design and large quantity

3. Decision Time

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2.1 Evaluation

<table>
<thead>
<tr>
<th>Presents realistic and detailed modifications to their idea, using annotated sketches, improvements are creative. Produces a detailed evaluation of their product, identifying strengths and weaknesses and shows good consideration of the users/market. Evaluates their design thoroughly against their product specification</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>6–8</td>
<td></td>
</tr>
</tbody>
</table>
13 Evaluation of Developed Design Proposal.

Describe the effectiveness of your developed design proposal and how it meets the needs of the original design situation. You may use annotated sketches and/or annotated photographs.

This chair can be easily folded up and stored, which means it will be easy to transport and carry.

It is simple to use and therefore can be used by people of all nationalities without the need for instruction.

The seat is made out of polypropylene and is comfortable and flexible, which does not break easily. This is good as it means it can be used for a long time.

A sliding mechanism has been placed in the seat and the frame, which will make the chair more individual and therefore more comfortable to sit on. Although it would be better if the seat was swapped more ergonomically.

The chair can be folded again and again when not in use, making it easier to transport.

The frame can be folded up into a smaller and easier to carry shape.

PP Seat.

PP aluminium is very strong and will hold the weight of a heavy adult.

The chair is easy to assemble, and therefore can be used by people from different countries. As it is made out of PP and aluminium it will be quite comfortable to sit on, although it would be better if the seat was swapped more ergonomically.

More comfortable parts in aesthetically pleasing, pain free, so not only is it an attractive design, but it also can be changed to be made more original by using different images. These could also change over the course of the season.

14 Evaluation. Evaluate your final proposal against your specification.

The chair is easy to assemble, and therefore can be used by people from different countries. As it is made out of PP and aluminium it will be quite comfortable to sit on, although it would be better if the seat was swapped more ergonomically.

More comfortable parts in aesthetically pleasing, pain free, so not only is it an attractive design, but it also can be changed to be made more original by using different images. These could also change over the course of the season.

Simple dip for legs. However, it is not very seat environment friendly as both PP and aluminium use a lot of energy to manufacture and these processes emit a lot of fumes. However, the images could make the chair more sustainable as they will be more original and exciting. This will mean people will want to buy them after the game and keep them making their lives much longer.

The sliding mechanism makes it easier to transport.

The seat materials chosen are resistant to weather and wind and these chairs will therefore be able to stand outside for spectators.
14 Evaluation. Evaluate your final proposal against your specification.

- Portable: Yes, it folds up easily and there are easy places where it can carry it.
- Lightweight: From hollow aluminium, it is hard to get bars in place quickly.
- Stable: On grass, the frame may make it unstable on uneven surfaces. The crossbar could be solved by bending bottom cross-bar to be similar to top one. Suitable for human weight, aluminium has good weight strength ratio.
- Comfy to carry: In reality, cross-bars would shorten, so could not stick out. However, you can get a comfy grip at any of the 4 corners when folded.
- No drinks holder: Ready to sit on, as garter will flex when pressure put back cross-bar but for each two large strips instead of many is more supportive.
- Sport friendly: The design could also be used as a gold or silver olympic chair can be printed onto seat or backrest.
- In scale model, it would be thin, wide enough to sit on.
- Garter & Aluminium are waterproof.

13 Evaluation of Developed Design Proposal.

Describe the effectiveness of your developed design proposal and how it meets the needs of the original design situation. You may use annotated sketches and/or annotated photographs.

Assembling, the chair is slightly more complicated than intended, but still quite self-explanatory. In final manufacture, the entire frame would be made from hollow aluminium to acrylic. This will make it very light weight and the entire product would be made from only two materials.

The best crossbar behind the backrest works well as the chair is very sturdy due to crossbars, however, my model did not show this because I couldn't join the legs to the chair body with hinges, only loose tape. To improve the design I would include some sort of tie for when it can be carried around without unfolding. This could be easily added before assembling.
14 Evaluation. Evaluate your final proposal against your specification.

- It is comfortable to sit on.
- It is very easily erected and could be done by people of all ages.
- I could make it in 1/2 size for children.
- Has very few components so could be easily quickly manufactured.
- Because it is made of plastic it is waterproof.
- Because there are holes in the seat the water will drip through.
- Can be collapsed and will take up less space.

My product can be easily carried and is portable and light.

16 Evaluation of Developed Design Proposal.

Describe the effectiveness of your developed design proposal and how it meets the needs of the original design situation. You may use annotated sketches and/or annotated photographs.

This rod glued on the back stops the chair back from falling too far back. Another is cut for the rod to fit in so that there is a larger supported area to be glued.

This is a picture showing the rod when the chair is being enlarged. The material is tubular. Placed down real product would be made of hollow injection-molded pieces.

The chair can be folded down so that it is smaller and takes up less room.

This is a picture of me making the chair.
Session 3 is a one-hour examination paper.

Candidates have the opportunity to reflect on the challenge by answering questions that require them to consider their product. These will be derived from a design, manufacturing or marketing perspective including:
- sustainability and the environment
- product life
- social, moral and cultural issues
- environmental issues
- inclusive design
- the human interface
- aesthetics
- scale of production
- production technologies
- fashion
- marketing
- commercial issues

Examples of candidates’ responses will be added to this website as they become available
Reflect on the product you have designed. Prepare a marketing strategy to sell your idea to a manufacturer who is considering its viability.

You should include:
Information about your intended market and how you would target it.
Modifications that could be made to your design to make it more economically viable.
Scale of production.

The following examples are provided by AS candidates after trial challenges.
1 Reflect on the product you have designed.

Prepare a marketing strategy to sell your idea to a manufacturer who is considering its viability. You should include:
- Information about your intended market, how you would target it.
- Medications that could be made to your design to make it more economically viable.
- Scale of production.

The product is transferable between all events. The use of raised seating would be a big advantage to reduce the number of seats. The use of a product where no seating is needed can be a huge advantage for the event. The use of a product that can be dissembled and reassembled would be very beneficial to the event.

Reduction of assembly time will also reduce the cost of production. The use of materials that do not require the use of a product that is too heavy will also reduce the cost of production. The use of materials that are easy to handle will also reduce the cost of production. The use of materials that are easy to handle will also reduce the cost of production.

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Reflection on the product you’ve designed. Prepare a marketing strategy to sell your idea to a manufacturer who is considering its viability. You should include:
- Information on the product intended market
- How to target the market
- Medications that could be made to your design to make it more economically viable
- Scale of production

My product is a chair designed to be used singularly or connected together. I designed it in mind to be used at large public events due to its practicability and high capacity. An important feature of the chair is the seat on the back rest for an umbrella. As this makes the chair particularly suitable for outdoor events as well as indoor events.

As my product is designed for use at public events, it will be used by the public. The public is a universal group. For example, at the Olympics, you would have people from countries around the world, of all ages, of all sizes, of all abilities. I propose that different designs be provided on the chair and the umbrella depending on the age, sex, nationality of the person using the associated seat. This way, each chair will be aimed at its particular market.

To make the chair more economically viable, the chair could be made out of only one plastic (polypropylene) material. There are also extra components such as the umbrella and the baggage holder which could be removed from the design to reduce the price and complexity of the design. These would be fewer components. The operation could be significantly reduced by part.

In order to comply with the promise to make the 2012 Olympics the most sustainable games yet, the chair could be made out of recycled plastic. This would

next step reduce the cost of the material as one manufacturer will only want to pay for processing the material rather than securing it and manufacturing plastic granules.

The scale of production depends on the scale of the event, with events such as the Olympics where thousands of spectators will be attending daily, obviously large scale production such as orders of tens or thousands of chairs mounting would be necessary. As the cost per unit will be very low, even through there is the high initial cost of the mould
Answer both questions in the space provided.

1. Reflect on the product you have designed.

   Prepare a marketing strategy to sell your idea to a manufacturer who is considering its viability.

   You should include:
   - Information about your intended market, how you would target it.
   - Modifications that could be made to your design to make it more economically viable.
   - Scale of production.

As the product was relatively simple to produce and cheap to produce as well, I see no reason for why this product should not be open to all customers in the market. The idea of a very quick to assemble product with a transparent woodbreaker may have health and safety issues linked to it. Smaller children may be advised to not buy this product.

Older members of the population, for example, may be very interested and eager to use this equipment. By making this product I feel that a price under £20.00 is possible, this would be very reasonable, in my opinion, considering that it ensures that the customer is completely dry. At the Olympic Games, by selling a this product in a small batch, the product would perhaps be more suitable to the customer if a few modifications were to be made. The point to hold the water up would be made from a plastic tube, a very cheap and suitable material for this purpose. As Scale of
Inclusive design is an increasingly important issue that faces designers today.

Reflect on the product you have designed.

Prepare a discussion that reflects your product and which addresses inclusion such as design of environments and products, consideration of different user groups and associated accessibility.

You should include:
Any modifications you would make to your product to make it more inclusive to a broader range of users.
Materials and manufacturing techniques that could be used.
Cost implications.
Inclusive design is an increasingly important issue that faces designers today. Prepare to discuss that reflects your product and which addresses inclusion, such as design of environments and products considering different user groups and associated accessibility. You may include any modification to make it more inclusive materials and manufacturing techniques.

Inclusive design is designing so that as many people as reasonably possible can use a product. Obviously, my chair is not ideal for children as it is too large for them. To enable children to use the chair comfortably, the chair could be adjusted so that it could be raised and lowered to different heights off the ground.

The principle of inclusive design is to design for use by all people within reason, with little or no price difference. Finding a softer plastic that would be very comfortable to sit on and implementing this change would entail little or no cost increase.

Making the height of the chair adjustable would most probably increase the cost considerably due to the increase of components and therefore the number of moulds required.

For example, if government-funded, they need to set an example to businesses and similar events to make the event welcoming and easily accessible for disabled people. Although severely disabled people will most likely use wheelchairs rather than the seats own chairs (especially those that are comfortable with cushioning) and easy to sit on (low enough). This would bring together both my previous idea of demonstrating the larger group of people how using the group of people to design these modifications would benefit all.

The principle of inclusive design is to design for use by all people within reason, with little or no price difference. Finding a softer plastic that would be very comfortable to sit on and implementing this change would entail little or no cost increase.
Mark Scheme

Two outline presentation plans aimed at an expert panel will be produced.

Answers will be in the form of written material supported by annotated sketches (10 Marks each).

QWC is assessed in this paper

P relevant points/issues raised
Q quality of explanation of these issues
S supporting example and sketches

QWC quality of written communication
OCR are running a very successful Innovation Challenge at GCSE.

Decision Time!

— Your Design Brief —

I am going to design and make a bag that is made of rubber gloves, so that it is water proof.
It will have a detachable rubber ring made from a bar of soap. It will have a handle hidden in the soap, so it can be hung on the back of a door. It will be large enough to take the soap, shopping and on trips. It will be useful, attractive, strong and washable.

Who are your intended customers?
The choice is a family embarking on a family holiday. A family with young children so that the bag can be used by other members of the family and will be attached to the side of the bag.

Where is your design intended to be used?
My design is intended to be multi-purpose. It can be used in the home, for cleaning, cooking or baking in the kitchen.

— Your Design Specification —

To be successful my product must:

My product must be fun, visual, attractive, strong and washable. It must also be useful, adaptable and practical.

The bag must also include:

— Required Elements —

For young children: