AN INTRODUCTION TO ARCHITECTURE

Skills development Activities:

ENTERPRISE AND EMPLOYABILITY MINI CHALLENGE

KS4 - National/Foundation

Created by Students at The Welsh School of Architecture
INTRODUCTION TO ARCHITECTURE  Currently in education, there is no evidence of introduction to Architecture in primary, secondary or further education, and since it accommodates such a different way of learning compared to other courses in university it creates a large learning barrier between KS4/5 to University. The aim of this pack is to create fun interactive learning material which will introduce architecture to secondary education as well providing the learners with a set of important skills that they will need to ease the transition from secondary/further education to studying Architecture at university. The learning material will facilitate skills development for the welsh baccalaureate assessment, and prepare learners for the final challenge.

INTRODUCTION TO FINAL CHALLENGE  The final challenge is to formally promote and sell a product that they designed infront of a panel. During the Enterprise and Employability challenge the learners will explicitly develop skills in Numeracy, Digital Literacy, Creativity and Innovation and Personal Effectiveness and apply them in an appropriate manner. The learners will also develop important skills that they will need to ease the transition between secondary/further education and university if they were to pursue architecture at university.

INTRODUCTION TO MATERIAL  In today’s world it will be desirable for learners to develop an enterprise mind-set which can enhance your employability prospects. In this challenge learners will have the opportunity to create and implement innovative Ideas based on meeting needs of customers and/or businesses by developing a product linked to the learning program. The idea behind this pack is to promote interest in education to increase the probability of further individual learning. The material in this pack will consist of 3 stages and a series of tasks within these stages. This will allow flexibility of completing tasks in your desired time due to unconstricting the tasks/stages to lessons. The tasks are optional and can be skipped but at lease one task per stage will need to be executed for this material to be most effective.
PRODUCT  The product that the students will create is a “House” for an “object”. The product must house either a single object or multiple objects. This introduces the simple meaning of architecture to the Students. Designing a house for the person which fulfils a person’s every day needs. For example; shelter from rain/wind.snow, a safe and secure place to inhabit etc. An example of a “Home” for an “object” could be a home for a phone. Through these lessons the students will be introduced to the essential steps of design from start to finish, from measuring and analysis to production and presentation. The product can either be theoretical or physical.

DEVELOPMENT  In order to design and create this product the students will require a brief guidance of steps that they can follow. These steps will include using measurements to create drawings in appropriate scales, sketches to communicate their concepts, regular group discussions and feedback, how to create and communicate a clear effective presentation. Resources will be provided for each task. Throughout these lessons the learners will develop their ideas through peer feedback. In Stage 2 the students will undergo a friendly competition which will introduce a scoring system, where they will be given points for identifying problems in each others products. They will also be awarded a bonus point for suggesting a solution for the problems identified. This will help create group discussions and transfer feedback between groups as well as a motive and objective to further identify and solve problems.
AIMS

The aims of these lessons are to help build on enterprising skills and attributes and enhance employability. At the end of these lessons the student will have learned or improved on:

- How to effectively present ideas and concepts clearly through diagrams and drawings.
- How to find and make use of critical information.
- How to effectively identify problems.
- How to develop an idea through finding solutions through problems that occur.
- How to communicate ideas verbally.
- How to build ideas from individual concepts into a group concept.
SKILLS

CREATIVITY & INNOVATION  This skill will be developed throughout the lessons from initial concept to final presentation. After most brief feedback sessions and discussions, the students will be inspired to further change and develop their ideas.

PERSONAL EFFECTIVENESS  This skill will be developed throughout the lessons, each member of a group will have to make their own concept and then decide on what parts to take forward as a group. The students will also individually take a task away with them to pitch a solution to a problem or problems identified after presenting or testing the product.

NUMERACY  This skill will only be assessed in this challenge at Advanced not KS4. It will be mostly developed through the early lessons where the student will study the bodies dimensions and requirements. The student will be drawing elevations in an appropriate scale to help them design their product. Addition, multiplication and division will be used in these exercises.

Other Skills that aren’t required for the Welsh baccalaureate assessment will also be developed, such as graphical presentation, teamwork, and oral presentation.
In this lesson the students will develop their skills in personal effectiveness by identifying their fields of expertise and contributing research and information towards their groups which will be allocated through this stage.

**TASK 1 - SURVEY** The learners will complete a survey (provided in resource page) which will determine what role they will play when assigned to their group. The better architecture practices have a larger range of skills, it is good to have members which range in expertise to complete varying tasks at a high level. See page 28.

**TASK 2 - POP QUIZ** The learners will begin with a pop quiz (provided in resource page). This pop quiz contains questions that will help determine each person’s skill set. This can then lead to how groups will be allocated. See page 29.

**TASK 3 - ANALYSIS** With the provided resources the learners will analyse and research a selected object which they will design a home for. In architecture the initial stage would be meeting with their clients and discussing their needs, similar to how this task is to analyse the object to identify its needs/requirements. See page 30.
In this lesson the learners will start to develop concepts for their products. Throughout this lesson they will need to document their process through drawings and annotations. A scoring system will be provided for Task 2 and 3.

**TASK 1 - CONCEPTS**  
The Learners will be given the task to come up with annotated diagrams and sketches to pitch their concepts to their group. In Architecture the concept is what drives their design. See page 31.

**TASK 2 - PEER ASSESSMENT**  
The learners will present their initial ideas to their peers. In this task they will be introduced to a friendly competitive system to further a motive to identify problems and further develop their ideas for their products. This task demonstrates studio atmosphere and how architects bounce ideas off each other. See page 32.

**TASK 3 - SUSTAINABILITY**  
The learners will have to think about sustainability in their products. They will look at how they can save material or save energy with their designs. Sustainability is a big factor in architecture. It is important for architects to make their design as sustainable as possible but not dilute their concepts. See page 33.
STAGE 3 - Presentation

In this lesson the learners will continue to develop their skills in graphical as well as oral presentation. The scoring system can also be implemented in Task 1 and 2.

TASK 1 - SHORT FILM  In this task the learners will create a short film advertising their product. They will need to clearly present why their product should be out in the market, using information they have learned through the previous tasks. See page 34.

TASK 2 - PEER POSTER  The learners will create a group poster highlighting why their product should go on the market using a very limited amount of text (only for Titles). The groups will then attempt to present an opposite groups poster to them. If the groups can explain the opposite group’s poster accurately then both groups score higher points. This demonstrates how Architects communicate their ideas through drawings which is a very valuable skill in architecture. See page 35.

TASK 2 - MOCK TEST  Practice makes perfect. The learners will pitch their final ideas to their tutors in a “mini challenge scenario”. Each member of the group will present their group project as a summary and going into more detail in the sectors they were allocated to within the group. This is similar to how architects sell their projects to critics, being able to speak confidently and passionately about your ideas is important in architecture. See page 36.
The Survey will include four topics. These topics are; Finance, Sustainability, Graphics/Drawing and Managing. These sections will correspond to the roles that will need to be filled in each group. The learners will tick a field for each question. The titles of the tick fields will be; Very interested, Interested, Slightly Interested and Not Interested. The value for each answer field will range from 3 to 0 consecutively with “Very interested” being 3 and “Not interested” being 0. The learners will add up their final scores for each section which will allocate them their first and second field of expertise. The 2 sections with the highest scores will help decide which roles the student will take. For example if the learner scored highest in finance and then sustainability then their first inline to fill the finance role and second in line to fill the sustainability role in the group.

See page 40 for resources.

SKILLS DEVELOPED WITHIN THIS TASK

Personal Effectiveness
The Pop quiz will include a variation of questions covering four topics. These topics are; Finance, Sustainability, Graphics/Drawing and Managing. The drawing topic will be assessed on drawing exercises so drawing simple objects etc. These questions will correspond to the roles that will need to be filled in each group. The learners will receive a pop quiz sheet in which they need to complete. The pop quiz will be provided in the resource pack. The difference questions will have a colour allocated towards them corresponding to the topic. For example, the Managing topic questions will be blue. At the end of the pop quiz the students will add up what score they got for each colour and identify their primary colour and secondary colour.

The learners will then be allocated into their groups taking into account what their primary and secondary topic expertise are.

See page 40 for resources.

SKILLS DEVELOPED WITHIN THIS TASK

Personal Effectiveness
Just like the process of designing a home for a person, the architect needs to research the needs of the client. In this case the learners will need to research the needs of the object. The learners will need to research the dimensions of the object which will be used to create their “home” for their object/objects to fit in. They will need to think about other needs the object might need such as waterproofing, protection etc. The learners might want their product to be uniquely identifiable, such as adding personal colours or patterns to express the designer's personality. In this task a few architectural terms will be introduced. These terms include; Plan and Elevation. These terms are used to identify direction of view in an observational drawing. Plan is a view from above looking down at the object. Elevation is looking side on at the object. The drawings will be done on a 1:1 scale (directly proportional to real dimensions of object) and should fit on an A3 page.

See page 39 for resources.

Critical thinking and Problem solving
Numeracy
This is quite an important stage for the design of the product because the learners will have to use their creative thinking and come up with ideas that will make their products stand out in the market. The learners should be encouraged to think critically on their ideas for their design and give reasoning to why it will make the design better. In other words the learners will have to start selling their ideas within their group preparing them for the final challenge. The manager of the group will play an important role in this task because he will have to make decisions on what ideas to take further. The group members will be able to present their ideas and findings to their manager as well as each other to develop their skills in selling their ideas. This will be very useful since they are practicing the final challenge but in a smaller more individual format.

SKILLS DEVELOPED WITHIN THIS TASK

Critical Thinking and Problem Solving
Personal Effectiveness
Creativity and Innovation
In this peer assessment task the learners will be able to develop their products by bouncing ideas and learning off each other like in a studio environment. The idea of this task is to promote problem solving skills as well as developing skills in creativity and innovation. This task can be done in two different ways. Two groups can present their work one after the other in front of the class. After listening to each other’s presentation the groups will then have the opportunity to identify problems in each others work to score points. Either group can also score bonus points for suggesting a valid solution to the problem that was identified. Another way would be a less formal way, where groups are paired up with each other’s to present their work to one another and write down problems/solutions as a list, and then hand it in to be allocated points.

See page 38 for resources.

**SKILLS DEVELOPED WITHIN THIS TASK**

- Digital Literacy
- Critical Thinking and Problem Solving
- Planning and Organisation

**SCORING SYSTEM**

<table>
<thead>
<tr>
<th>SCORING</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifying Problem</td>
<td>1 point</td>
</tr>
<tr>
<td>Providing Solution</td>
<td>2 points</td>
</tr>
</tbody>
</table>
SUSTAINABILITY

Sustainability is a very important factor in design. There are several different approaches to sustainability. One approach which is particularly relevant to this challenge is reducing the amount of material used. In architecture being able to use less material while still filling the functions required and keeping your concepts will result in less energy being used to process the material and therefore not only saving money but also lowering carbon emissions. One of the ideas of this task is to introduce an interactive and fun way of introducing sustainability to the learners. Rather than taking sustainability as something they have to do, it is introduced as an aspect of design which will contribute to an overall better design. Instead of it constraining them, the students will feel challenged to overcome the problems of sustainability and use it to develop their design. In architecture a good design is not good because it is considered sustainable, but because of its design accommodating sustainability as an extra asset.

SCORING SYSTEM

| IMPLEMENTATION OF SUSTAINABILITY IN THEIR DESIGN | 1 point |
| EVIDENCE OF INTEGRATING SUSTAINABILITY IN THEIR DESIGN PROCESS | 2 points |

SKILLS DEVELOPED WITHIN THIS TASK

Creativity and Innovation
Critical Thinking and Problem Solving
Digital Literacy
Numeracy
In this task the students will have to make a short film. If there isn’t an availability to a recording device e.g. smartphone students can instead create story boards. The film should focus on selling their product to a certain target audience ranging from children to the elderly. If there is availability to ICT services then the students can use a free movie editing software (windows movie maker) to cut, paste and edit their video. The learners will have to think about the target audience’s needs and promote why their product is worth buying. The more effective videos will be the ones that adapt best to the target audience as well as the ones that are most convincing about their ideas. Using a story board poster to advertise their product is equally as effective when promoting their product. Again if they have access to ICT facilities then they can use computer software to create their story board poster, or they can make their poster by hand using pens, pencils and colours.

See page 41 for resources.

SKILLS DEVELOPED WITHIN THIS TASK

Digital Literacy
Creativity and Innovation
Planning and Organisation
Graphical presentation is important in architecture. It is really important to be able to present your ideas graphically because you won’t always be there to be able to explain your project. In this task this will develop the learner’s skills in how to create a presentation which can communicate their ideas in a graphical format. The learners will create a group poster to promote their product. The learners will need to think about how to translate their ideas into graphics/drawings in order for viewers to be able to understand their project without having to read through paragraphs of texts. This will develop the learners skill to communicate their ideas using images. In architecture text is not the best way to communicate ideas. The best and most effective way is to communicate them through drawings.

**SCORING SYSTEM**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 point</td>
<td>Presenting opposing groups concepts correctly</td>
</tr>
<tr>
<td>2 points</td>
<td>Opposing group presenting your posters concepts correctly</td>
</tr>
</tbody>
</table>

See page 38 for resources.

**SKILLS DEVELOPED WITHIN THIS TASK**

Critical Thinking and Problem Solving
|STAGE 3| TASK 3

MOCK TEST

Practice makes perfect. This task will allow the learners to identify where they need to improve when presenting their product in the final challenge. They will be able to get feedback which they can reflect on in order to better their performance in the final challenge. This task can be used at the end of each stage to help the students reflect on what they have learned in the lessons at each of these stages. In this task the students will focus on how to make a good first impression in front of employers. They will practice a friendly and polite greeting followed by a clear presentation. This task will allow the students to practice talking in front of a panel (the employer) which will help build their confidence. Nervousness can really affect an interview. It makes it difficult to express your personality and stand out amongst others. Repitition helps create self confidence, so the more experience the learners have doing this, then the more confident they will become.

See page 38 for resources.

SKILLS DEVELOPED WITHIN THIS TASK

Planning and Organization
Literacy
ENTERPRISE AND EMPLOYABILITY CHALLENGE

RESOURCE PACK

KS4 - National/Foundation
VERBAL PRESENTATION

Posture and Position

GOOD

Posture and position is very important when it comes to presenting. You need to stand up straight so you can speak clearly and be in a position where you won’t hide what your presenting otherwise it will be difficult for people to link what your saying to what they are seeing. Your posture and attitude while you’re presenting will effect how easy it is for your audience to pay attention. The more passionate you sound about your presentation the easier it is for the audience to pay attention.

BAD

The image on the right is what not to do when presenting. As you can see the person is standing right in front of the presentation with a slouched posture and his hands in his pockets. He also has a gumpy expression on his face saying “I don’t want to be here.” Most likely the audience will reflect on his attitude and not want to be here listening to his presentation either.
ANALYSING AN OBJECT

PLANS AND ELEVATIONS

HOW TO DRAW IN PLAN

Put simply, drawing an object in plan is to draw the object from a “birds eye view” (from above).

- **Simple Definition** - http://www.bbc.co.uk/schools/gcsebitesize/maths/geometry/3dshapesrev2.shtml
- **Architecture Drawing** - http://www.designingbuildings.co.uk/wiki/Types_of_drawings_for_building_design

HOW TO DRAW IN ELEVATION

Drawing an object in Elevation is to draw the object from a side on view. For example a cube has 6 faces, one facing the ground and one facing upwards, and then 4 facing outwards. So in this case the cube has 4 possible elevations.

- **Video Tutorial** - https://www.youtube.com/watch?v=k95m8RU0xYw
- **Definition** - http://alittledesignhelp.com/what-is-an-elevation-drawing/
- **Simple Definition** - http://www.bbc.co.uk/schools/gcsebitesize/maths/geometry/3dshapesrev2.shtml
ALLOCATING ROLES

SURVEY AND POP QUIZ

SURVEY

The survey will need to cover the Four roles stated in the task description. Below I have referenced a few examples as well as a website to help create the survey.

- **Creating a survey** - https://www.smartsurvey.co.uk/survey-templates

  - How to create a successful survey - https://www.surveymonkey.com/mp/how-to-create-surveys/
  - Tips for creating a survey - https://www.qualtrics.com/blog/creating-surveys/

POP QUIZ

Similar to the survey the pop quiz will have 4 sections in relation to the four roles stated in the task description.

- **Sample pop quiz** - http://www.quizsupplies.co.uk/free_downloads/sheets/sample%20pop%20quiz.pdf

  - Making your own pop quiz - http://makeaquiz.net/
  - Creating a pop quiz - http://www.quivyourfriends.com/
VIDEO EDITING

The links below are tutorials on how to use the free video editing software that is already pre installed on all microsoft windows computers. If it isn't already installed on to the computers I have also provided a link to download and install the program.


- **Software video tutorial** - https://www.youtube.com/watch?v=7GREeD2icUo

- **Software video tutorial** - https://www.youtube.com/watch?v=0pCI_g9dHRk

STORY BOARDING

The links below are a few examples of story boarding techniques and tips. We have also provided story board templates.

- **Story boarding tips 1** - http://nofilmschool.com/2013/09/storyboarding-tips-dreamworks

- **Story boarding tips 2** - https://www.commoncraft.com/explainer-tip-creating-simple-storyboards

- **Story board templates** - http://www.printablepaper.net/category/storyboard

- **Story boarding tutorial** - http://www.dummies.com/how-to/content/storyboarding-your-film.html