

## **Stage 5 Teaching Portfolio**

### **Design and Technology**

Tom Bosman - S00312157

The unit of work takes place in the first term of the Year 10 Course and focuses on building upon the foundations created in the Year 9 Course.

Students will be focusing on the following Learning Outcomes:

- **DT5-1** analyses and applies a range of design concepts and processes
- **DT5-3** evaluates and explains the impact of past, current and emerging technologies on the individual, society and environments
- **DT5-4** analyses the work and responsibilities of designers and the factors affecting their work
- **DT5-7** uses appropriate techniques when communicating design ideas and solutions to a range of audiences

Literacy and Numeracy inclusions are at the forefront of this Unit, with a focus being on developing critical evaluation and analysis skills, as well as necessary Numerical knowledge to engage fully with the Course content.

## **Task 1 - Reading - Preparing for Reading**

### **Literacy/Numeracy Skills and Knowledge**

Students will learn to apply previous knowledge into a new context, drawing from their understanding to enable them to fully access a higher-level text. Literacy Learning Progression: UnT7 uses visual and auditory cues to build meaning in multimodal texts (colour, shape and size of images, sound effects) ; UnT10 demonstrates an understanding of nuances and subtleties in words of similar meaning (frustrated, discouraged, baffled). (Australian Curriculum, Assessment and Reporting Authority, 2017a)

### **Task Goal/Learning Intentions:**

- **Students:**
  - *explore the implications of design practices and factors that affect a project's development, for example: (ACTDEK040, ACTDEP049)*
  - *the design and production of project solutions, eg aesthetics, ergonomics, form, function, quality, trends and timing investigate the impact of historical and contemporary design solutions*
  - *analyse the needs of a design project and end-user aspirations (ACTDEK041)*

*(NSW Education Standards Authority, 2019)*

### **Task Overview:**

Students will be preparing to read a complex, written discussion concerning the work of Danish designer, Arne Jacobsen.

### **Focus on:**

- Linking prior knowledge of designers/eras from previous weeks to the applicable content.
- Design process (date, location, further constraints, consumer requirements)

**Resource found in *Appendix 1 – Resources for Task 1***

Resources (including digital)	Task teachers notes	Differentiation of activities  +  Role of speaking and listening
<p>- Image of “The Egg” chair by Arne Jacobsen shown on Smartboard</p> <p>- <a href="https://www.etsy.com/au/market/1950s_chairs">https://www.etsy.com/au/market/1950s_chairs</a></p> <p>- Copy of Text for T to discuss.</p>	<p>T will discuss the previous lesson’s introduction into various famous designers and their products from specific periods, following on from a similar task of investigating 1950’s furniture.</p> <p>T introduces the Ss to 1950’s chair designs by using the Etsy link. T will call on individual Ss to describe what they see (usually very boxy, plain and uncomfortable, mostly made from timber.)</p> <p>T then introduces the text by displaying “The Egg” chair image, and gives Ss brief outline of the design i.e its context, designer, manufacturing methods etc. T reminds Ss to look out for various <i>Design Processes</i> or <i>methods</i> mentioned, as well as <i>context</i>.</p> <p>T provides a step-by-step summary of the text and what Ss should be aware of.</p> <ul style="list-style-type: none"> <li>- the history and location of the original design</li> <li>- The design process and modeling</li> <li>- Manufacturing techniques and materials.</li> <li>- Common modern inclusions of design.</li> <li>- The purpose of the text.</li> </ul>	<p>T led discussion focusing on previous lessons work and the Outcomes being targeted. Incorporating SST’s and manufacturing/modelling methods of production.</p> <p>Directed dialogue between T and Ss, T will call on individual Ss to respond to queries with prompting. Differentiation will take place by listing discussed points on the board for students to easily recall POI’s. T provides examples/definitions of Design Process, context etc.</p> <p>T writes down main points of text as they state them. Allows for Ss to more easily follow on with discussion.</p>

**Appendix 1 - Resources for Task 1:**



(1st Dibs, 2023)

## Task 2 - Reading - Detailed Reading

### Literacy/Numeracy Skills and Knowledge

Students will learn to read and interpret descriptive and industry-specific terms to form better understandings of related products, designs, themes etc. Drawing on their previous learning to more fully understand why designers and their products were, and are relevant in society. Literacy Learning Progression: UnT5 identifies keywords and the meaning they carry (nouns, verbs); UnT7 identifies the purpose of predictable texts and moderately complex texts, UnT10 demonstrates an understanding of nuances and subtleties in words of similar meaning (frustrated, discouraged, baffled). UnT11 reads and views sophisticated texts. (Australian Curriculum, Assessment and Reporting Authority, 2017a)

### Task Goal/Learning intentions:

- **Students:**
  - *explore the implications of design practices and factors that affect a project's development, for example: (ACTDEK040, ACTDEP049)*
  - *the design and production of project solutions, eg aesthetics, ergonomics, form, function, quality, trends and timing*
  - *investigate the impact of historical and contemporary design solutions*
  - *identify the purpose of design across a number of focus areas of design*
  - *analyse the interrelationship of design with technology, for example: (ACTDEP048)*
    - *consider how a designed solution is affected by the technologies and tools used in its development*

*(NSW Education Standards Authority, 2019)*

### Task Overview:

Students will participate in a detailed reading of a challenging text discussing Arne Jacobsen's classic, "*The Egg*" design.

The task will focus on:

- Context (how did this affect the design and manufacturing)
- Manufacturing/design process/design (how was it made? How was it designed? What is/was so unique about it?)
- Modern-day relations/iterations

**Resource found in *Appendix 2 – Resources for Task 2***

Resources (including digital)	Task teachers notes	Differentiation of activities + Role of speaking and listening
<ul style="list-style-type: none"> <li>- Article displayed on <b>smartboard</b> for easy teacher reference</li> <li>- Clean copy of text for each student</li> <li>- Marked up copy of text for teacher.</li> <li>- <b>Elaboration doc</b> for T and additional needs Ss.</li> </ul>	<p>T introduces text:</p> <ul style="list-style-type: none"> <li>- Descriptive article that discusses “The Egg” chair by Arne Jacobson. Provides overview of its original location, design context and process, manufacturing methods and modern-day iterations/mentions.</li> <li>- Aiming to learn about how designers' personal factors like context and style influence their designs, and how to locate relevant information within larger bodies of text.</li> <li>- Preview each focus area (Context, Manufacturing/design process/design, Modern-day relations/iterations.)</li> </ul> <p>Read the text to students, while they read along on their own copies or via the smartboard.</p> <p>Complete detailed reading paragraph-by-paragraph:</p> <ul style="list-style-type: none"> <li>- Use the teaching/learning cycle that follows <b>Prepare, Focus, Task, Highlight, and Elaboration</b> prompts.</li> <li>- <b>Elaboration</b> focuses on the expansion of highlighted points, T creates a table and adds relevant content for each focus area.</li> </ul>	<p>Teacher-led discussion with directed inclusion from Ss. T will provide relevant content to Ss to enable them to co-construct knowledge. Differentiation will include providing Ss with a partially highlighted copy of the text, to assist with keeping up with the text and location of important information.</p> <p>Moderated dialogue between T and called upon Ss to enable participation.</p> <p>Elaborated content doc will be shared with required Ss.</p>

## Appendix 2 - Resource for Activity 2

The provided markup focuses on the following:

- Context
- Manufacturing/design process/design
- Modern-day relations/iterations

### *“From the Archive: A short history of the iconic Egg Chair by Arne Jacobsen*

*Designed in the fifties, the Egg Chair is a design classic that has become one of the most recognisable and copied chairs of all time*

The original Egg was created by the Danish architect and designer Arne Jacobsen in 1958 for the SAS Royal Hotel in downtown Copenhagen. Jacobsen was commissioned to design every element of the building, from the walls to the furniture, including the cutlery that would be used in the restaurant, the lighting and even the ashtrays. He seized the opportunity to put into practice some ideas he had about how architecture and furniture could be better integrated.

The Egg Chair was the most outstanding part of his entire hotel design and has become a design classic with global success. It broke all design conventions with its curving shape, which Jacobsen was able to achieve by moulding the inner structure out of foam and covering it with upholstery. Jacobsen had experimented with clay in his garage, testing and perfecting the shape, before moving on to sculpting the foam.

The elliptical chair acts as a cocoon around the sitter, gently curving inwards the egg-shape it is named for. It sits atop a star-shaped swivel base, and the angle adjusts to the user's weight. Designed for the lobby, the hotel was fitted with 50 first edition Eggs. Its curvaceous shape stood out against the straight horizontal and vertical lines of the 22-storey building it inhabited.

The foam made the chair incredibly lightweight, ensuring that the hotel staff could move the 50 originals around easily. The 1958 chairs weighed just over 7kg. The materials used today, a more technically advanced foam with glass fibre reinforcement, make the modern iterations slightly heavier. The chair, produced and sold by Fritz Hansen, is now available in a multitude of coloured fabrics and different leathers.

At the same time as designing the Egg – and from the same clay he used to experiment in his garage – Jacobsen also came up with the equally recognisable Swan Chair for the hotel's lobby. It too features only soft curves in the seat, arms and back.

Jacobsen designed both the Egg and the Swan with matching couches, but only a few of the Egg couches were ever manufactured. The size of the couch made difficult to make and to neatly upholster with cow-hides without leaving unsightly stitching in the middle of its wide seat.

The shape of the Egg chair was era defining and Jacobsen is one of the most imitated designers of the last century. He was a Danish design pioneer, known not only for his many chairs

(although these undoubtably made him famous), but also for several notable buildings, including St Catherine's College, Oxford and the Aarhus City Hall and, of course, the SAS Royal Hotel itself.

Today, the chair – the original as well as the many knock offs, imitations and hanging variations – is still as popular as ever. In recent decades the Egg Chair has taken on a new role in popular culture, having been an iconic part of the reality television series *Big Brother* as the seat in the diary room, and it was even used in a high-end redesign of London and Copenhagen McDonalds branches, according to The New York Times.

Its popularity has inevitably been helped by a renewed interest in mid-century furniture design but its ergonomic form and revolutionary shape that hinted at the curves and bubble of the decades to come have ensured it has remained a design classic for over half a century.”  
(Ray, 2022)



### **Task 3 - Writing - Modelling/Deconstruction**

#### **Literacy/Numeracy Skills and Knowledge**

Students will learn to interpret and write a descriptive product analysis in order to develop the necessary skills to complete effective self-evaluations and production decompositions/analyses. CrT10: Writes to explain and analyse (analyses how artists use visual conventions in artworks). Writes to compare and contrast phenomena (identify the differences between elements) CrT11: Writes sustained, informative texts that precisely explain, analyse and evaluate concepts or abstract entities. (Australian Curriculum, Assessment and Reporting Authority, 2017a)

#### **Task Goal/Learning intentions:**

- **Students:**
  - *develops and evaluates creative, innovative and enterprising design ideas and solutions DT5-6*
  - *evaluate the quality of a designed solution against criteria for success (ACTDEP051)*

*(NSW Education Standards Authority, 2019)*

#### **Task Overview:**

Students will view a deconstructed product analysis, which will act as a model sample and provide them with a target for the sophistication required in their own analysis moving forward.

#### **The task will focus on:**

- Working cooperatively to analyse the text
- Working through a deconstructed response example, with the teacher clarifying and drawing attention to required inclusions, which include:
  - Introduction (what is being discussed/analysed)
  - Context (extends on from the introduction by providing the reader with any further, relevant background information)
  - Analysis/Evaluation (uses SST and industry-specific terminology (IST) to analyse the products relevance and overall function/design)
  - Summary (wraps up the writer's thoughts.)

**Resource found in *Appendix 3 – Resources for Task 3***

Resources (including digital)	Task teachers notes	Differentiation of activities + Role of speaking and listening
<p>Marked up sample text for Teacher.</p> <p>Blank copies of text for Ss.</p> <p>Digital copies to also be sent to Ss via Google Classroom.</p> <p>Text will be displayed on smartboard.</p>	<p>T introduces text. It's focus will be to assist Ss with their own product evaluation/analysis.</p> <p>T makes mention of the stages within the text (Introduction, Context, Analysis/Evaluation, Summary).</p> <p><b><u>Text Deconstruction:</u></b></p> <ul style="list-style-type: none"> <li>- <i>Introduction and Context</i> - purpose of text and product identified.</li> <li>- <i>Analysis</i> - Breaks down SST and IST in layman's terms, allowing Ss of all levels to engage. Shared metalanguage is important. Focus on the dimensions within each stage.</li> <li>- <i>Summary</i> - Provide Ss with closure and make explicit the overarching thoughts within the text.</li> </ul>	<p>T led introduction.</p> <p>T asked Ss what components they use in English when writing an essay. (Intro, Body, Conclusion), T links this with task). Whole class discussion on the structure of the analysis, with notes being taken on board.</p> <p>A scaffolded document is provided as differentiation where required. Digital copies also provided that have starter points for required highlighting.</p> <p>T calls on specific Ss for SST/IST meanings.</p> <p>Simplified language version for EAL/D Ss</p>

## **Appendix 3 - Resource for Activity 3**

### **Introduction/Context**

- **Introduce the task and project**
- **Provide some manufacturing/designing context**
- **How a high grade can be achieved.**

This evaluation and self-analysis focuses on my submission for Assessment Task 3 - Resin Jewellery (**Introduces the task and what this text is about**).

This task was completed during Term 3 of Year 10, 2022, and saw the class **creating silicone moulds (Gives reader context and information about the product used)** by using the product, Pinkysil. The moulds were then **used to mass-produce resin jewellery/wearables (Further explanation of the task requirements and context)**, with a minimum of **15 different pieces being required for an "A" grade (What was needed to achieve a high result)**.

These pieces needed to show **quality progress, and different colours/mixing methods (Further Marking Criteria references)**.

### **Evaluation/Analysis - Positives**

- **Give an overarching statement on your feelings/success**
- **List what you did well (minimum 2 successes)**
- **Provide a more detailed discussion of your finest pieces/designs.**

Overall, I am incredibly pleased with my resin wearables (**Overarching statement**). I was able to successfully **submit 23 different pieces (One success listed)**, each being sanded up to 600 grit and mounted on the appropriate hardware (earrings, necklace etc.)

The pieces were **mostly bubble-free, smooth and polished to a high standard (Second success)**.

I was also able to show various techniques by including different mixtures, additives and inclusions in my pieces.

I am particularly proud of the final 3 pieces I produced, with **the most exciting piece featuring a 4-leaf-clover I found on the oval. I was able to make that my design focus by producing an excellent finish using clear resin, which was polished effectively.**

### **Evaluation/Analysis - Negatives**

- **Provide some factors you would look to improve on next time, and mention any challenges faced.**
- **Mention why they were an issue**

Areas I could improve in include **creating more unique moulds for my wearables (One future improvement)**. I was initially **nervous to try anything too unique, as the methods involved were new to me (Why it was an issue)**. I also **missed a week (Another issue)** of class time due to illness, and therefore had to focus more on designing and producing simple, yet effective products. **Sanding the products also took a lot longer than anticipated (A challenge faced)**, and was also very messy when the wet sanding began.

## Summary

- **Provide a concluding statement about the project/design.**
- **Summarise what would be done differently next time**

To conclude, I am proud of my submission, I found this task very enjoyable (**Concluding statement**) and was able to make presents for my family, while also learning a new skill. If I was to make more wearables, I would spend more time designing and testing more intricate designs ( **What would be done differently**) that give the wearer a unique look and style.

## **Task 4 - Writing - Joint Construction**

### **Literacy/Numeracy Skills and Knowledge**

Students will create a detailed self-evaluation and analysis of a sample project, writing descriptively and using SST throughout. CrT10: Writes to explain and analyse (analyses how artists use visual conventions in artworks). Writes to compare and contrast phenomena (identify the differences between elements) CrT11: Writes sustained, informative texts that precisely explain, analyse and evaluate concepts or abstract entities. (Australian Curriculum, Assessment and Reporting Authority, 2017a)

### **Task Goal/Learning intentions:**

- **Students:**
  - *develops and evaluates creative, innovative and enterprising design ideas and solutions DT5-6*
  - *evaluate the quality of a designed solution against criteria for success (ACTDEP051)*

*(NSW Education Standards Authority, 2019)*

### **Task Overview:**

Students will be provided with a scaffold that follows on from last lessons deconstruction. They are to use the listed points to form the basis of their evaluation/analysis of the provided projects.

### **The task will focus on:**

- Joint construction of appropriate responses, forming a critical evaluation and analysis of their complete project.
- Successful evaluations and critical analysis will include:
  - Intro/Context
  - Analysis - Positives and Negatives
  - Summary/Conclusion.

**Resource found in *Appendix 4 – Resources for Task 4***

Resources (including digital)	Task teachers notes	Differentiation of activities + Role of speaking and listening
<p>Marked up sample text for Teacher.</p> <p>Clean scaffold for Ss.</p> <p>Smartboard</p> <p>Work samples.</p>	<p>T introduces the lesson. It's focus will be to jointly construct a critical evaluation/analysis.</p> <p>"WE DO" stage, participation is heavily encouraged.</p> <p>T displays sample work from previous year groups, Ss view these samples before beginning the writing task.</p> <p>T forms small groups for Ss to analyse the samples.</p> <p>T leads a brainstorming activity of general thoughts about the work samples.</p> <ul style="list-style-type: none"> <li>- What is it?</li> <li>- What was done well?</li> <li>- What can be improved?</li> </ul> <p>T then leads Joint Construction activity using the template/scaffold.</p>	<p>T led introduction.</p> <p>Small group activity to engage Ss.</p> <p>T asks prompting questions during group time, "What stands out? What do you like? What is missing?"</p> <p>T then leads Joint Construction using scaffold document on smartboard. Selects students and prompts responses from them using the template.</p> <p>Ss can be provided with "fill in missing words" template where required.</p> <p>Simplified language version for EAL/D Ss</p>

## Appendix 4 - Resource for Activity 4

### Scaffold Document Template for Joint Construction.

#### Introduction/Context

- Introduce the task and project
- Provide some manufacturing/designing context
- How a high grade can be achieved.

#### Evaluation/Analysis - Positives

- Give an overarching statement on your feelings/success
- List what you did well (minimum 2 successes)
- Provide a more detailed discussion of your finest pieces/designs.

#### Evaluation/Analysis - Negatives

- Provide some factors you would look to improve on next time, and mention any challenges faced.
- Mention why they were an issue

#### Summary

- Provide a concluding statement about the project/design.
- Summarise what would be done differently next time

## **Task 5 - Numeracy - Measuring 2-part silicone and applying mixture ratios using collaborative learning methods.**

### **Literacy/Numeracy Skills and Knowledge**

Students will be developing Numeracy skills in relation to ratios. The interpretation of fractions will also be further developed and applied in a real-world scenario. CoU1: Uses knowledge of fractions as part-whole relationships to divide and compare quantities; InF4: Recognises the whole can be redivided into different fractional parts for different purposes (a strip of paper divided into quarters can be redivided to show fifths). Demonstrates that the more parts into which a whole is divided, the smaller the parts become. UuM7: Measures, compares and estimates length, area, mass, volume and capacity using standard formal units. MeT2: Uses the appropriate time unit to describe the duration of events (uses minutes to describe time taken to clean teeth whereas uses hours to describe the duration of a long-distance car trip) (Australian Curriculum, Assessment and Reporting Authority, 2017b)

### **Task Goal/Learning intentions:**

- **Students:**
  - *calculate material and resource requirements.*

*(NSW Education Standards Authority, 2019)*

### **Task Overview:**

Students will be casting resin moulds made from Pinksil Putty. Each batch of resin needs to be measured and mixed accurately in order to properly set, therefore numeracy skills will be developed that focus on interpreting mixture ratios, measurement and also measuring time, as the product has strict time requirements.

### **The task will focus on:**

- Watching an instructional video on the mixing and use of Pinkysil, making notes of:
  - Part A measurement (ratios, accurate measurement).
  - Part B measurement (ratios, accurate measurement).
  - Time taken to cure/set (measuring time).
- Ss will then create a mould of a provided 3D printed model.

**Resource found in *Appendix 5 – Resources for Task 5***



Resources (including digital)	Task teachers notes	Differentiation of activities + Role of speaking and listening
<p>YouTube video:  <a href="https://youtu.be/U9waViwy99E">https://youtu.be/U9waViwy99E</a></p> <p>Smartboard</p> <p>Scaffolded worksheet for select Ss, provided through Google Classroom.</p>	<p>T introduces the lesson. It's focus will be on developing the necessary skills to accurately create silicone moulds using Pinkysil.</p> <p>Ss will take notes while watching the YouTube video, with T to write focus points on the smartboard:</p> <ul style="list-style-type: none"> <li>- <i>Ratios</i> for Pinkysil</li> <li>- Correct <i>measurement</i> of Parts A and B</li> <li>- Curing <i>time</i></li> </ul> <p>Once the video is finished and Ss have taken down the necessary numerical values, they will create their own moulds of provided 3D printed models.</p> <p>T leads discussion on further uses for Pinkysil, and introduces 2-part resin to make copies from the moulds.</p>	<p>T led introduction.</p> <p>Collaborative learning, with T lead discussion on required ratios/measurements.</p> <p>T provides feedback on Ss suggestions for ratios/measurements.</p> <p>T provides Ss with scaffolded sheet with clear requirements re. ratios/measurements.</p>

## **Appendix 5 - Resource for Activity 5**

---

**Scaffolded numerical values for Pinkysil use.**

---

**Part A and B ratio:** \_\_\_\_\_

**How do you combine the two parts?**

---

---

---

---

**How much extra Pinkysil do you need from the top of the model?**

---

---

**What is the ideal air temperature for the product to cure in?**

---

---

## **Task 6 - Numeracy - Introduction to Fusion360 3D Modeling Software.**

### **Literacy/Numeracy Skills and Knowledge**

Students will be developing Numeracy skills in relation to shapes and symmetry. Students will be creating digital models using a variety of basic shape-creation tools and extrusions. UGP2: recognises features of shapes of different sizes and in different orientations following flips, slides and turns. UGP4: Recognises that shapes can have lines of symmetry (by folding shapes or using mirrors). Identifies the different shapes that enable the creation of symmetrical designs. (Australian Curriculum, Assessment and Reporting Authority, 2017b)

### **Task Goal/Learning intentions:**

- **Students:**
  - *analyses and applies a range of design concepts and processes DT5-1*
  - *demonstrate an understanding of design, technology and appropriate technology, for example: (ACTDEP048) apply design, technology and appropriate technology principles in the process of developing quality design solutions*
  - *select, justify and use appropriate technologies and available resources in the development of design projects, for example: skills, materials, tools and techniques.*

*(NSW Education Standards Authority, 2019)*

### **Task Overview:**

Students will begin learning the complex modeling software, Fusion360. This program allows for the creation of 2D and 3D models which can then 3D printed or laser cut to create accurate, physical versions of design concepts. The program relies upon a sound understanding of geometry to effectively make symmetrical, or detailed models of designs. The program uses basic shape functions to begin any design, and can be modified in either a 2D or 3D format.

### **The task will focus on:**

- Watching an introductory video of the software.
- Furthering Ss knowledge of basic shapes and their 3D relations and potentials.
- Creating basic model using the software and precise measurements.

**Resource found in *Appendix 6 – Resources for Task 6***

Resources (including digital)	Task teachers notes	Differentiation of activities + Role of speaking and listening
<p>YouTube video:  <a href="https://youtu.be/qvrHuaHhqHI">https://youtu.be/qvrHuaHhqHI</a></p> <p>Fusion360</p> <p>Smartboard</p> <p>Ss laptops</p> <p>T laptop</p> <p>Google Classroom</p> <p>Definitions doc</p>	<p><b>PRIOR TO LESSON, TEACHER MUST CREATE MODEL FROM VIDEO AND UNDERSTAND THE BASIC FUNCTIONS OF FUSION360. (Explicit teaching)</b></p> <p>T introduces the lesson. It's focus will be on introducing Fusion360, a program that will become apart of every design project moving forward. Explicit Teaching and Worked Examples are the primary Teaching Strategies at play. S</p> <p>Watch YouTube video, Ss follow on with design while T roams assisting. Video acts as a worked example.</p> <p>The model is created using simple geometric shapes and manipulating them. Therefore a focus needs to be placed on knowing basic, and more obscure shapes and figures.</p> <p>Ss will then submit their designs as an .STL file to Google Classroom, specifying a scale they want it printed at (following on from ratio development last lesson).</p>	<p>T led introduction. Commonly found metalanguage will be noted on the board (extrude, revolve, sketch-plane, constraints, component)</p> <p>Co-constructed learning, with T roaming room helping during video.</p> <p>T provides feedback on Ss' model progression.</p> <p>Differentiation occurs for EAL/D, additional needs students, who are provided with a list of metalanguage phrases and definitions.</p>

## **Appendix 6 - Resources for Activity 6**

### **Common Fusion360 Terms and Definitions**

**Extrude:** Adds depth to sketches. This tool will be frequently used when turning a 2D sketch into a 3D object.

**Revolve:** Create a solid body by spinning a selected face 360 degrees. Usually used to make round objects, like handles or bottles.

**Sketch-plane:** Is the physical dimension you are drawing a sketch on. Users can choose from preset options of Bottom, Front and Side, or create their own “layer” to draw on.

**Constraints:** Adding “Constraints” is the way you define the relative location of your sketch in the Fusion360 “void”. Its like saying to your dog, “sit and stay”.

**Component:** A design is made up of pieces, and these pieces are called components. Think of a table, yes its a table, but its made up of a top, legs, etc.

## References

1st Dibs. (2023). *Arne Jacobson "Egg" Chair for Fritz Hansen, 1958*. 1stDibs.com.

[https://www.1stdibs.com/furniture/seating/armchairs/arne-jacobson-egg-chair-fritz-hansen-1958/id-f\\_30521822/?&currency=aud&allowUniversalLink=no&gclid=CjwKC Ajw04yjBhApEiwAJcvNoRRjcuSTyJ25s3YQaXTeb4YQ-1SzIsQ-Kv\\_y5VW54uq08k6DHSrRSRoCXuMQAvD\\_BwE&gclsrc=aw.ds](https://www.1stdibs.com/furniture/seating/armchairs/arne-jacobson-egg-chair-fritz-hansen-1958/id-f_30521822/?&currency=aud&allowUniversalLink=no&gclid=CjwKC Ajw04yjBhApEiwAJcvNoRRjcuSTyJ25s3YQaXTeb4YQ-1SzIsQ-Kv_y5VW54uq08k6DHSrRSRoCXuMQAvD_BwE&gclsrc=aw.ds)

Australian Curriculum, Assessment and Reporting Authority. (2017a). *National Literacy Learning Progression*. Australiancurriculum.edu.au.

<https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/>

Australian Curriculum, Assessment and Reporting Authority. (2017b). *National Numeracy Learning Progression*. [Www.australiancurriculum.edu.au](http://www.australiancurriculum.edu.au).

<https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-numeracy-learning-progression/>

NSW Education Standards Authority. (2019). *Design and Technology Years 7-10 Syllabus*.

<https://educationstandards.nsw.edu.au/wps/wcm/connect/3adb11cc-5ff8-457a-9d82-a9107921d60c/design-and-technology-years-7-10-syllabus-2019.pdf?MOD=AJPERES&CVID=>

Ray, D. (2022, December 7). *From the Archive: A short history of the iconic Egg Chair by Arne Jacobsen*. ICON Magazine.

<https://www.iconeye.com/design/classic-egg-chair-arne-jacobsen-fritz-hansen>