

## Term 3 - Food packaging | Stage 5

| Summary | Duration           |
|---------|--------------------|
|         | Term 3<br>10 weeks |

| Unit overview  | Resources  |
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| <p>In this unit, students learn about food packaging and demonstrate their knowledge through creating food packaging and a portfolio.</p> <p>Outcomes from core areas are addressed throughout the entire unit, both from practical, theory and portfolio based experiences.</p> | <p>Laser cutter or Cricut</p> <p>Adobe Illustrator</p> <p>cardboard or plastic</p> <p><del>Adobe Dimensions</del></p> <p>Vacuum former</p> |





| Outcomes  | Assessment overview   |
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| <p><b>Design and Technology Years 7-10</b></p> <ul style="list-style-type: none"> <li>› DT5-1 analyses and applies a range of design concepts and processes</li> <li>› DT5-2 applies and justifies an appropriate process of design when developing design ideas and solutions</li> <li>› DT5-3 evaluates and explains the impact of past, current and emerging technologies on the individual, society and environments</li> <li>› DT5-4 analyses the work and responsibilities of designers and the factors affecting their work</li> <li>› DT5-5 evaluates designed solutions that consider preferred futures, the principles of appropriate technology, and ethical and responsible design</li> <li>› DT5-6 develops and evaluates creative, innovative and enterprising design ideas and solutions</li> <li>› DT5-7 uses appropriate techniques when communicating design ideas and solutions to a range of audiences</li> <li>› DT5-8 selects and applies management strategies when developing design solutions</li> <li>› DT5-9 applies risk management practices and works safely in developing quality design solutions</li> <li>› DT5-10 selects and uses a range of technologies competently in the development and management of quality design solutions</li> </ul> | <p>Students create sustainable packaging for a food product.</p> <p>They create the net which will be cut using the <b>cricut</b>, as well as internal housing for the food package using the vacuum former. A portfolio which documents their designs and processes is submitted along with the packaging.</p> <p>Students can work in groups or as individuals.</p> |

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## Stage 4/5 - Core: Activity of Designers

### The work of past and current designers across a range of settings

Students:

- explore the work of past and current designers in commercial, historical and industrial settings from different focus areas of design, for example: (ACTDEK040, ACTDEK041)    
- investigate the diversification of design over time





### Trends in technology and design

Students:

- evaluate the impact of trends on society, for example: (ACTDEK041)   
- explain the impact of commercial and industrial practices on design projects

### Ethical and responsible design

Students:

- investigate how designers respond ethically and responsibly to design issues when they develop design ideas and solutions, for example: (ACTDEK040, ACTDEK041)    
- research an example of an ethical and responsible design in a focus area of design

### Preferred futures

Students:

- define preferred futures

## Lesson 1 research and video on packaging

Introduce assessment task

Students explore why there are a range of designs for packaging. For example, the teacher can model comparing a plastic drink bottle to a bag of flour.

In small groups, students compare packaging for different products.

For each package, they should:

- explain how the package design works
- identify the chemical and physical changes the packaging form and material might prevent or facilitate.

Students can also use online catalogues to investigate whether there are other packaging options for that product.

At home, students examine their recycling and other waste and suggest products that would most benefit from redesigned packaging. The class collates these findings to develop a short list of products to use as the basis for the engineering challenge.

Lesson 2 Features of packaging and sustainable packaging video with worksheet

Discussion of what students think are the trends that influence consumers currently.

Lesson 1: Packaging design functions

<http://designkmg.weebly.com/packaging.html>

Undercover food packaging clickview:

<https://clickv.ie/w/5wmt> (14 min video)





Google classroom Question - using poll everywhere, submit their products

[PollEv.com/elizabethsea099](https://poll-ev.com/elizabethsea099)

Lesson 2: Clickview sustainable packaging video plus ppt plus worksheet

<https://clickv.ie/w/rwmt>

worksheet












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| <ul style="list-style-type: none"> <li>explore the possibilities for preferred futures given the constraints of our current thinking, available technologies and resources (ACTDEK040, ACTDEK041) </li> <li>identify visions and specific examples of preferred futures, for example: (ACTDEK040)  <ul style="list-style-type: none"> <li>lifestyle choices</li> </ul> </li> <li>identify what changes would need to occur to achieve preferred futures (ACTDEK040)</li> <li>analyse some exemplary designed solutions and predict future directions for a designed solution (ACTDEP051) </li> </ul> <p><b>Innovation</b><br/>Students:</p> <ul style="list-style-type: none"> <li>assess the impact of past, current and emerging technologies and innovation on society and environments (ACTDEK040, ACTDEK041) </li> </ul> | <p>Define Commercial and Industrial practice/production.</p> <p>Discussion of these practices in packaging context.</p> <p><del>Install Adobe Dimensions and Adobe Illustrator</del></p> <p>Lesson 3 sustainable packaging ppt</p> <p>What do we do with packaging.</p> <p>Video RE MRFs. discussion of failure of packaging and recycling plants - outsourcing to China.</p> <p>Plastic China trailer, then National Sword</p> <p>Diversification of design over time discussion with ppt to aid with eggs. Discussion of how sustainable packaging is ethical and responsible design.</p> <p>Definition of Preferred futures -</p> <p>Cradle to Cradle</p> <p>Lesson 4 design brief : Exploration of the need, Design Constraints, Design Brief</p> <p>Go over design situation and portfolio.</p> <p>Needs analysis as class</p> | <p><a href="https://drive.google.com/file/d/1-5M3lnYdT6TnyRI7xm27IIT39GJoGCH6/view?usp=sharing">https://drive.google.com/file/d/1-5M3lnYdT6TnyRI7xm27IIT39GJoGCH6/view?usp=sharing</a></p> <p>Lesson 3: PPT from clickview</p> <p>MRFs video</p> <p><a href="https://youtu.be/7CFE5tD1CCI">https://youtu.be/7CFE5tD1CCI</a></p> <p>Plastic China trailer</p> <p><a href="https://youtu.be/v0Kif9cugQ0">https://youtu.be/v0Kif9cugQ0</a></p> <p>Preferred futures textbook 5.3</p> <p>Activity 5.4</p> <p>Lesson 4: Packaging Portfolio scaffold</p> |

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| <p><b>Stage 4/5 - Core: A Holistic Approach</b></p> <p><b>The concepts of design</b></p> <p>Students:</p> <ul style="list-style-type: none"> <li>- consider how a designed solution is affected by the technologies and tools used in its development</li> </ul> <p><b>Factors affecting a holistic approach to design and production</b></p> <p>Students:</p> <ul style="list-style-type: none"> <li>▪ analyse the importance of environmental sustainability practices as a design ideal in design projects, for example: 🌱</li> <li>- zero waste living</li> </ul> <p><b>Influence of design on the individual, society and environments</b></p> <ul style="list-style-type: none"> <li>▪ investigate human, technical and environmental factors affecting design and production in design projects, for example: (ACTDEK047, ACTDEP049) 🌱🌐⚙️</li> <li>- sustainability</li> <li>▪ predict the outcome of a project and its effect on preferred futures (ACTDEK040) 🌱⚙️</li> <li>- the interdisciplinary nature of design which draws on disciplines of mathematics, sciences, engineering, fine art and humanities</li> <li>- time and finance</li> </ul> | <p>Lesson 5 Continuation of portfolio - Areas of Investigation: mind map software (mindmeister/lucidchart); Table of Areas</p> <p><b>H/W: Ongoing for vacuum former, 3d printer</b></p> <p>Lesson 6 Idea generation and concept drawing/Criteria to evaluate success</p> <p>Lesson 7 Final concept drawing/Time plan/Action plan/Finance plan (\$20)</p> <p>Lesson 8 Prac Illo/Evidence of Creativity/Exploration of Existing designs/Documentation of research</p> <p>Lesson 9 Prac Illo design/Experimentation</p> <p>Lesson 10 Prac prep design in illo/ ID and justification of resources, eg plastic/cardboard/vacuum forming</p> <p>Lesson 11 Prac Cricut and cricut design space</p> <p>Lesson 12 Prac: Dem vacuum forming with a note to ensure angles on timber/foam/items enable product to be loosened.</p> <p>Lesson 13 Dem: teacher shows how to use cricut machine (alternative is using colour printer and getting sticker paper to give to janet)</p> <p>Lesson 14 Prac cricut/ Testing</p> <p>Lesson 15 Prac cricut/Application of practical skills</p> | <p>Cricut machine</p> <p>vacuum former</p> <p>Portfolio powerpoint</p> <p>Cardboard/Plastic/vinyl</p> <p>Item to assist with vacuum forming</p> <p>Illustrator net preparation slides:</p> <p>Cricut preparation slides:</p> <p>Vacuum former preparation slides:</p> |
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| <p><b>Stage 4/5 - Core: Design Processes</b></p> <p><b>Identification of needs and opportunities</b><br/>Students:</p> <ul style="list-style-type: none"> <li>▪ identify opportunities for new and better solutions (ACTDEK045, ACTDEP048) ⚙️🇦🇺</li> </ul> <p><b>Management</b><br/>Students:</p> <ul style="list-style-type: none"> <li>▪ implement and evaluate a process of design, for example: (ACTDEP051, ACTDEP052) ⚙️💻</li> <li>▪ calculate financial costs of design projects 📊</li> <li>▪ evaluate the role of project management when developing a design project</li> </ul> <p><b>Creative and innovative idea-generation</b><br/>Students:</p> <ul style="list-style-type: none"> <li>▪ generate ideas, research solutions and employ collaborative techniques when developing creative design ideas, for example: (ACTDEP049) ⚙️💻👥</li> <li>- undertake primary and secondary research</li> <li>▪ apply design thinking when developing and producing design projects for preferred futures ⚙️</li> </ul> <p><b>Research and exploration</b><br/>Students:</p> <ul style="list-style-type: none"> <li>▪ research appropriate materials, processes and production methods for design projects 💻</li> </ul> | <p>Lesson 16 Dem: teacher demonstrates how to use adobe dimensions</p> <p>Lesson 17 Prac Dimensions</p> <p>Lesson 18 Prac Dimensions</p> <p>Lesson 19 Rendering out</p> <p>Lesson 20 Rendering out</p> <p>Lesson 21 Evaluation</p> <p>Lesson 22 Assessment due</p> <p>Lesson 23</p> <p>Lesson 24</p> <p>Lesson 25 Zero waste living</p> | <p>Dimensions prep and export slides:</p> |
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| <ul style="list-style-type: none"> <li>▪ apply and communicate research findings to design projects  </li> <li>▪ analyse the social, financial and environmental impact of design projects (ACTDEK040)  </li> </ul> <p><b>Experimentation</b><br/>Students:</p> <ul style="list-style-type: none"> <li>▪ experiment to optimise solutions for design projects, for example: <ul style="list-style-type: none"> <li>- prototypes</li> </ul> </li> </ul> <p><b>Communication and presentation techniques</b><br/>Students:</p> <ul style="list-style-type: none"> <li>▪ design and produce solutions using ICT as appropriate, for example: (ACTDEP052) </li> </ul> <p><b>Realisation of design ideas</b><br/>Students:</p> <ul style="list-style-type: none"> <li>▪ calculate material and resource requirements </li> <li>▪ justify techniques and resources being used in the creation of products, systems and environments for a preferred future </li> </ul> <p><b>Evaluating</b><br/>Students:</p> <ul style="list-style-type: none"> <li>▪ justify and document decisions made during development of design projects (ACTDEP049)  </li> </ul>   |                                   |           |

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| <ul style="list-style-type: none"> <li>self-assess and peer-assess design processes and solutions ⚙️ 👤</li> </ul> |                                   |           |

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