

Resource Folio

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Class: Friday 2-4pm

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Introduction

Location	Killarney Heights High School, Killarney Heights, NSW
Size of School/Class	Total number of students: 996 Design and Technology class size: 6 females 5 males Textiles class size: 8 females, 1 male
Other school demographics	<ul style="list-style-type: none"> - Government school - Female students: 409 - Male students: 587 - 0% Indigenous background - 44% Language background other than English - School ICSEA value: 1126
Year level:	Design and Technology class : Year 11 Textiles class: Year 12
Learning area	Stage 6 preliminary design and technology Stage 6 HSC textiles and design
Unit of work	Design and Technology: -Design thinking and processes Textiles and Design: -Fabric colouration and decoration
Outcomes	Design and Technology: -P1.1 examines design theory and practice, and considers the factors affecting designing and producing -P3.1 investigates and experiments with techniques in creative and collaborative approaches in designing and producing Textiles and Design: -H2.1 communicates design concepts and manufacturing specifications to both technical and non-technical audiences -H2.3 effectively manages the design and manufacture of a Major Textiles Project to completion
Summative assessments	Design and Technology: - Ergonomic environmental desk lamp. Student are to design an ergonomic desk lamp that considers its environmental impact. It must showcase a variety of technology and design thinking skills and visually portrays a personal element. E.g. love for nature- lamp in the form of a tree. Textiles and Design: -HSC major work Students develop further skill and understanding of a variety of printing and dying techniques addressed in stage 4-5. They challenge their design skills and showcase their understanding of methods through the fabric colouration and decoration process when constructing their major projects



STAGE 6 PRELIMINARY DESIGN AND TECHNOLOGY RESOURCES

DESIGN THINKING METHODS

WHAT IS DESIGN THINKING?

“Design thinking occurs most intensely in the **design and development stage** but is involved throughout the product design process. It is about researching widely and thinking creatively to generate multiple ideas, combined with thinking critically to make decisions. It involves consideration of important factors such as the end-user, the most suitable materials, aesthetics, construction methods and sustainability.

Creative thinking is assisted by **divergent thinking**; allowing ones thoughts to go wide. It comes from open-mindedness, flexibility and a curious approach. It included exploring and investigating

Critical thinking is done in conjunction with the **convergent thinking**; bringing ones thoughts into focus. It includes questioning, clarifying, planning, analysing, examining, and testing information and ideas. Both types of thinking are assisted by research.” (O’leary & Livett, 2017)

DESIGN THINKING METHODS

THE 6 THINKING HATS – Edward De Bono (Lateral thinking)

The 6 thinking hat theory, developed by Edward De Bono- the originator of lateral thinking, is an excersise that helps us understand how our minds can deconstruct and rationalise design problems. To be effective, different catogories (hats) need to be used to address a problem:

Blue: For **managing** – an overall look at what is required

Black: For **discernment** – choosing, being logical, practical and realistic

White: For **information** – getting together available information and facts

Yellow: For **optimistic response** –looking for positive reasons in ideas

Red: For **emotions** - reactions or statements without reason

Green: For **creativity** – following random thoughts

1. Watch the “6 thinking hats” video: <https://youtu.be/UZ8vF8HRWE4?si=cqfyUXjSlb7lpSva>
2. Now it’s your turn: You have 10 minutes to develop and a sustainable school campus design that incorporates green spaces and renewable energy sources.

Brief design description:

Idea sketches:

Using the design solution for
“A sustainable school campus
design that incorporates green
spaces and renewable energy
sources”, deconstruct and
evaluate your ideas using
“The 6 thinking hats” lateral
thinking theory.

THE 6 THINKING HATS

Blue: For **managing** – an
overall look at what is
required

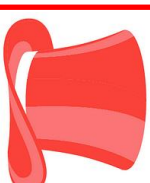
White: For **information** –
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DESIGN THINKING METHODS

S.C.A.M.P.E.R

“SCAMPER is a team brainstorming technique used to develop or improve products or services. SCAMPER is an acronym for Substitute, Combine, Adapt, Modify/Magnify, Purpose, Eliminate/Minimize and Rearrange/Reverse.

- **Substitute:** Components, materials, people, situations
- **Combine:** mix, combine with other components, functions or services, integrate
- **Adapt:** alter, change function, use part of another element
- **Modify, Magnify or Minify:** increase or reduce in scale, change shape, modify attributes
- **Put to another use:** Think about how features and functions can be used in another way, or to do something different
- **Eliminate:** remove elements, simplify, reduce to core functionality
- **Rearrange or reverse:** Change the order, interchange components, change the speed, pattern or turn inside or upside down.” (O’leary & Livett, 2017)

1. Using this design thinking theory “S.C.A.M.P.E.R”, Apply this method of thinking to a lamp. We will use our findings to assist in our ergonomic lamp design development for our assessment project

Substitute

Combine

Adapt

Modify

Put to another use

Eliminate

Rearrange or Reverse

DESIGN INSPIRATION

Where to find inspiration?

The best thing about design inspiration is that you can find it from anything, or anywhere! Design inspiration refers to the process of finding, gathering, and drawing creative ideas and influences to inform and guide the design of a product, project, or creative endeavor. It involves seeking out sources of inspiration from various mediums such as nature, art, architecture, fashion, technology, and culture, among others.

Design inspiration can come from observing patterns, colors, textures, forms, and functionalities in the world around us, as well as from studying historical and contemporary design movements, trends, and innovations.

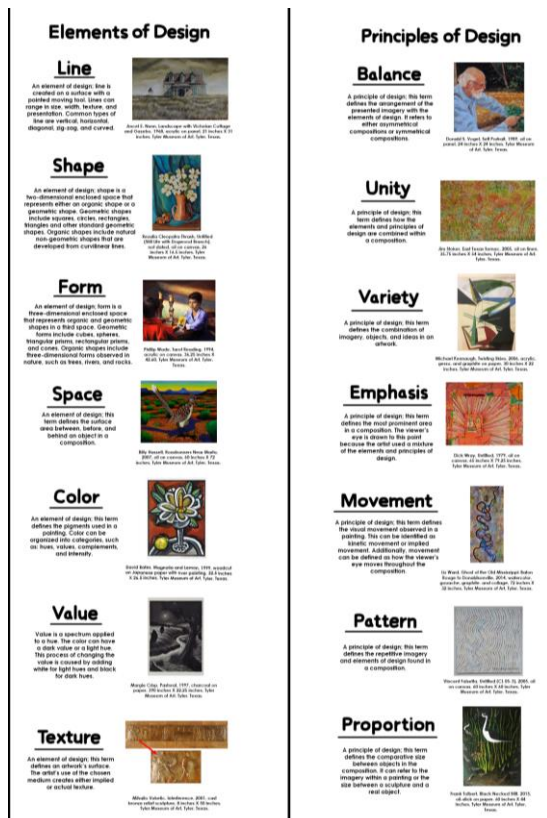
The importance of Mood Boards in design development

Mood boards play a crucial role in the design development process by helping to visually and conceptually explore ideas, establish a cohesive direction, and communicate the intended aesthetic and mood of a project.

1. Watch the video of “10 tips of creating effective mood boards”
https://youtu.be/_ViJnpQpCqo?si=arWaELA4gQ45_a15
2. Create a mood board for your ergonomic lamp design. Consider the elements and principles of design and its function and aesthetic needs and wants. You can create this either used CAD or on a A4 page.

Elements and principles of design

Inspiration





STAGE 6 HSC TEXTILES & DESIGN RESOURCES

FABRIC PRINTING METHODS

Applying **patterns and colour** to textiles items can be achieved in many ways to add **visual value** to a textiles item. One of the most common methods of this is through **printing**. This can be done in multiple ways to display complex and simple designs.

1. Read and note chapter 16, page 238-242 in "Nelson Textiles and Design, Preliminary and hsc second edition.

2. Using the textbook and additional research, explain what "printing" is:

Printing: _____

Watch video on different textiles printing methods: <https://youtu.be/jRNqaOA8ZRI?si=yf6jCsP97tbikZiq>

Types of Printing

3. In pairs, discuss the types of printing methods you just read about and something you found interesting. Then share what your pair talked about in a classroom discussion.

4. For each printing method, in your own words you are to write a brief description of the method, and how it works. You are then to attach a sample of the printing method you complete in class in the box provided. (all except Roller, warp printing, which will be provided)

Block Printing: _____

Roller Printing: _____

Resist printing (Batik) :

Resist printing (Screen printing):

Heat transfer printing (Sublimation):

Heat transfer printing (Direct digital):

STAGES OF FABRIC DYING

1. As a class, explore the different stages of dying in more detail. Write a discription of how this dying method is done and some advantages and disadvantages:

PRE-FIBRE

How it is done:

Advantages

-
-
-
-
-

Disadvantages

-
-
-
-
-

EXAMPLE:



FIBRE

How it is done:

Advantages

-
-
-
-
-

Disadvantages

-
-
-
-
-

EXAMPLE:



YARN

How it is done:

Advantages

-
-
-
-
-

Disadvantages

-
-
-
-
-

EXAMPLE:



FABRIC

How it is done:

Advantages

-
-
-
-
-

Disadvantages

-
-
-
-
-

SAMPLE:



PRODUCT

How it is done:

Advantages

-
-
-
-
-

Disadvantages

-
-
-
-
-

2. Looking at the objects around the room provided, Identify what stage of dying you believe it was dyed in and discuss results in small groups:

Item:	Stage of dying:

Item:	Stage of dying:

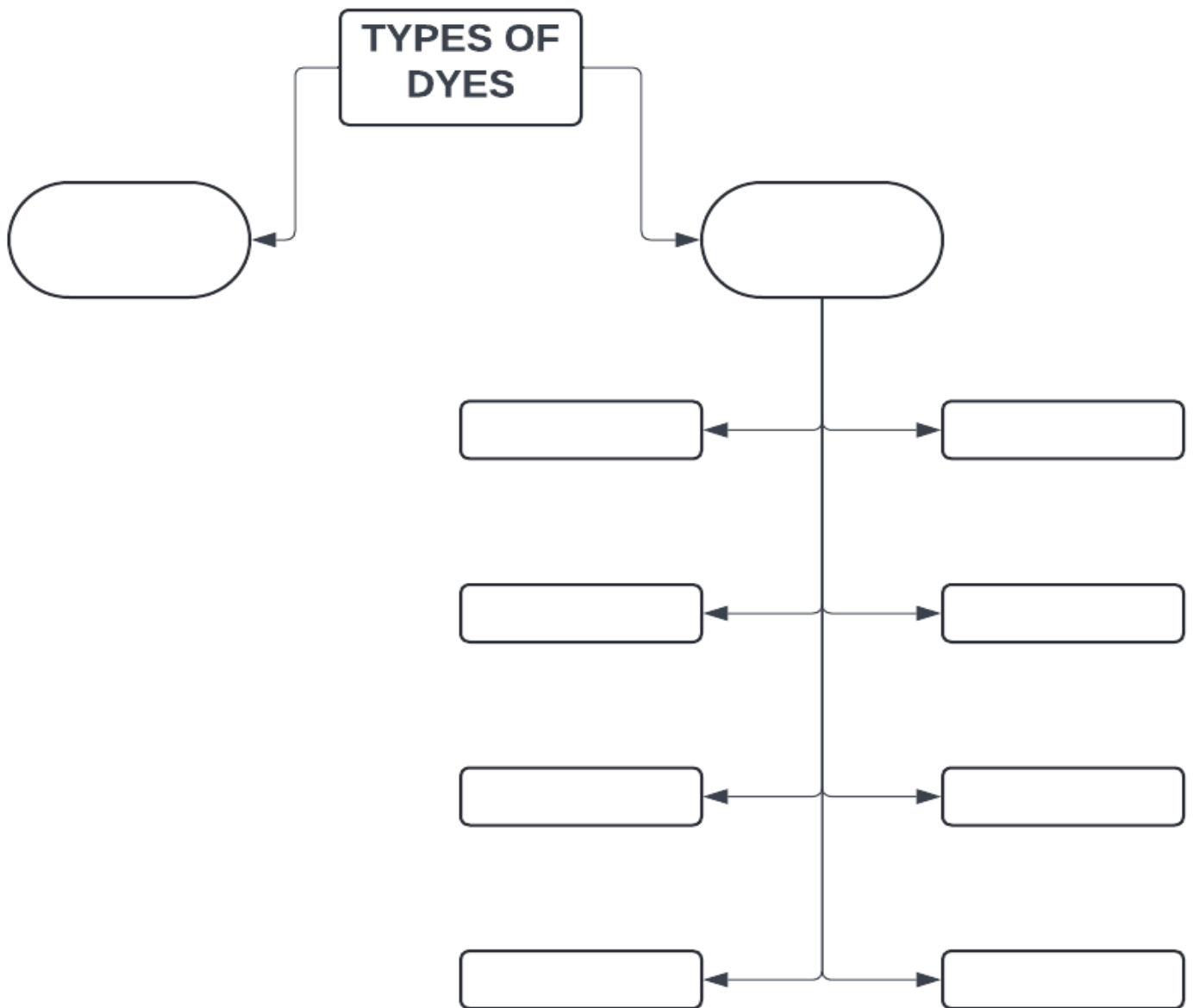
3. Did you all agree with what stage the product was dyed? Discuss your results with the class.

4. Watch short clip of the impact of Textiles Dying on the environment and consider the repercussions of synthetic dying methods.

<https://youtu.be/Bk2APxqlhbk?si=EecQgZ81-QvgnBR7>

TYPES OF DYES

1. Complete the “DYES” tree below: In the ovals name the 2 main catogories and in the rectangles names the subcatorgies. Under each box, provide an example of a fibre type that works best with the type of dye. Use textbook – Page 242 to assist you, as well as what was dicussed in class:



2. Review the “natural dyes” powerpoint (appecix 1) and dicuss as a class the types of natural dyes and what materials they come from. As a class, create 2 mind map on the board about natural dyes (one for pros and one for cons). Note some down in the space below

PROS

-
-
-
-
-

CONS

-
-
-
-
-

3. Attatch a sample of different natural dyes below and describe the colour the dyes create.

Natural dyes

BEETROOT

Colour: _____

ONION SKIN

Colour: _____

TUMERIC

Colour: _____

INDIGO

Colour: _____

BLUEBERRY

Colour: _____

AVOCADO

Colour: _____

DECORATIVE DYING METHODS

ICE DYEING

"Ice dye is the art of placing ice cubes on top of fabric, then sprinkling dye powder on top of the ice, letting the melting process dictate how the dye splits and bleeds, and where it ultimately lands on the fabric" (party, 2020).

<https://youtu.be/sFztKXWI8lc?si=hD2yQFiB3mSqEN9v>



TIE DYEING

"A method of dyeing textiles to produce patterns by tying sections of the cloth together so that they will not absorb the dye" (*Definition of Tie-Dyeing* |

Dictionary.com, n.d.)

<https://youtu.be/XLISpW8vJs4?si=XimykJw1V0pg4RB>



SHIBORI DYEING

"Shibori is an ancient Japanese dyeing technique that involves folding, twisting or bunching cloth and then binding it to create incredible patterns. The dyeing process is quite playful, and the result is undeniably stylish." (Dye, n.d.)

<https://youtu.be/VigZNvtadmM?si=60UJpQYZHqQZI8A7>



LIQUID RADIANCE DYEING

"Liquid Radiance is a concentrated range of just nine liquid colours for use on all white or light coloured fabrics ranging from silks and other natural fibres through to 100% synthetic and polyester blends." (*Liquid Radiance*, n.d.)

https://youtu.be/7aYxxE1UnTU?si=Hhu8SQBTnUkLwv_A



Design & Technology Reflection

Within my 4 Year 11 Design and Technology activities, I have sequenced the students to investigate a variety of design thinking strategies and how they can be effective when developing design ideas. These worksheets would be done during the beginning of the unit to provide them a foundation of design thinking knowledge that they can carry with them throughout the designing and production of their projects in both year 11 and through to their year 12 major works. The resources I have created allow students to categorically showcase their knowledge of design thinking. They first learn design thinking concepts, its pros, cons and how it works, through both text and visuals e.g. videos and symbols. This is important as it teaches a diverse range of learners who all retain information in different ways. They are then encouraged to display this understanding on a small individual design task with no repercussions or mistakes. This allows them to be more comfortable and vulnerable when designing, allowing them to think freely and outside of the box. Students then expand this understanding and share concepts with their peers through group activities, subsequently teaching each other and showing understanding by applying this design thinking concept. They then portray methods of Blooms Higher Order Thinking by applying their knowledge and design thinking skills for their own individual projects that are marked within summative assessments. This sequenced learning method supports students to feel more comfortable with designing products as they can express their unique and innovative ideas while learning new strategies to expand them in a beneficial way.

Textiles reflection

Throughout all 4 of my textile's resources, their aim is to provide students with further knowledge and understanding of a variety of different decorative techniques that can be used during their HSC major work projects, while also subsequently providing them with knowledge about emerging technology and textiles impact on the environment. Within the resources, students expand on their knowledge on techniques but exploring the steps and specification of decorative strategies and then physically applying the learnt technique onto fabric. This strategy allows students to visualise how printing and dyeing processes work rather than just reading, encouraging them to retain and explore concepts further. As the application of the printing and dyeing methods are not specific, they can be altered to meet the diverse needs of students, e.g. some students may develop, and screen print detailed designs where others might showcase more simple designs to ensure concepts are understood and applied effectively and to a high standard. The resources allow students to not only work at their desk and take detailed notes about the content but also encourages them to move around the classroom, share their understanding within group discussions and visually apply the concept to real life scenarios/situation. Similar to the design and technology resources, the activities allow students to learn in a variety of ways through text, visuals such as videos, images and symbols and well as tactile products where students can touch and see how the methods of colouration and decoration have been applied to fabrics and the effect they make on final designs.

APPENDICES

1: NATURAL DYES.pdf

REFERENCES

- O'leary, J., & Livett, J. (2017). Nelson product design and technology VCE units 1-4 : workbook. South Melbourne, Vic. Cengage Australia.
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- Definition of tie-dyeing | Dictionary.com. (n.d.). Wwww.dictionary.com. <https://www.dictionary.com/browse/tie-dyeing>
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