





Surface Design

Surfaces are first impressions. It determines how one feels at distances but it may not look like how it would feel and may not feel like what it looks like. It is through a process that one will discover the mysteries behind the surfaces and how they were decorated, treated and constructed.

A process, a series of moments. Each fold, each stitch, each cut and wash;
Every idea, every technique, every color and material.

Prologue..

Being **nocturnal**, he wakes up in the middle of the night.
On one side of the room, a bleak and dim lit space, stands a small table, a sewing machine sitting desolate and silent atop it. It's full of hope as it sits as it waits for him to come along and stitch up his newest idea.
Folded along the shelves beneath it lie folded strips of fabrics of the **blacks and whites**
and the occasional **shades of blues..**

The obsession with the **owl** leads him to a journey,
where the project "**Noctowl**" commences..



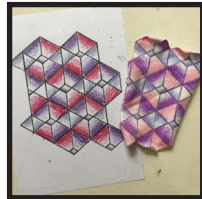
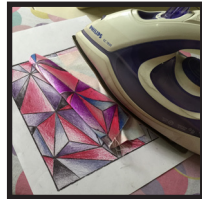
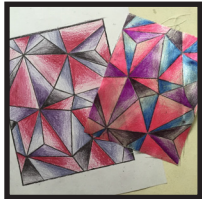
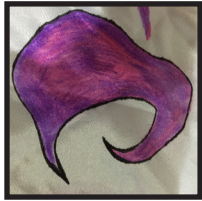


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Technique 1 - Transfer Printing (Crayons & Dispersed Dyes)



Transfer Printing (Crayons & Dispersed Dyes)

Technique 1

Materials Needed:



Fabric Crayons



Dispersed Dyes



100% Polyester or
Cotton Fabrics



Baking Paper



Hot Iron



Heat Press

Process:

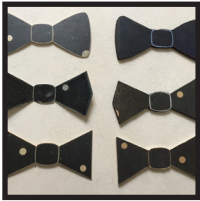
- 1) Draw design on paper with preferred medium. (crayons or dispersed dyes)
- 2) Allow the dispersed dyes to dye fully.
- 3) Set up the heat press or iron to 400°C.
- 4) Place design onto the preferred material (polyester or cotton fabric), with the design facing it.
- 5) Place flat textured objects in between the paper and fabric. (For indirect method)*
- 6) Place a piece of baking paper and heat press or iron for 30 seconds.

Reflections:

*Using crayons will give a very raw and faded effect comparing to dispersed dyes which is darker and clearer.

*Heat press will gives better results than the conventinal hot iron however, it will take quite a while to set up.

Technique 1 - Transfer Printing (Digital)



Transfer Printing (Digital)

Technique 1

Materials Needed:



Wood Planks



Metal Sheets



100% Polyester or
Cotton Fabrics



CPM 6.2 or
TCC 3.1 Paper



Baking Paper



Heat Press

Process:

1) Print design on transfer printing paper
(CPM 6.2 for hard surfaces or TCC 3.1 for light fabrics)

2) Set up the heat press.

Fabrics - 400°C for 30secs

Metals - 350°C for 2mins

Woods - 300°C for 30secs

3) Place design onto the preferred material (fabric, metal or wood), with the design facing it.

4) Place a piece of baking paper and heat according.

5) Peel off the transfer printing paper.
(Hot peel for fabric and wood or Cool peel for metal)*

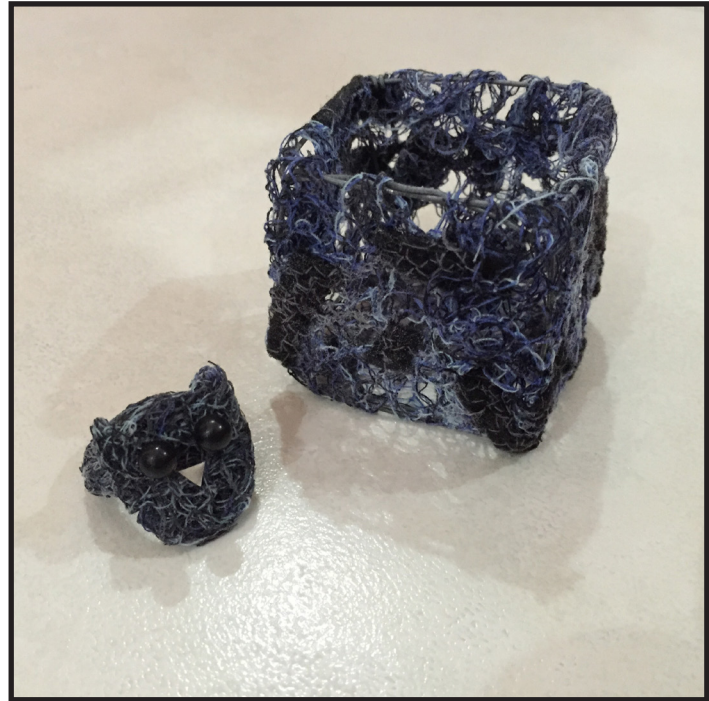
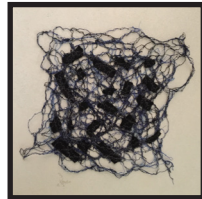
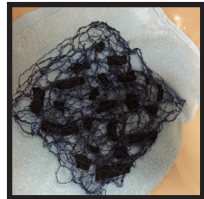
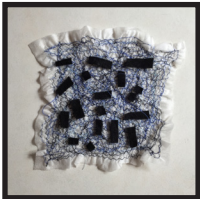
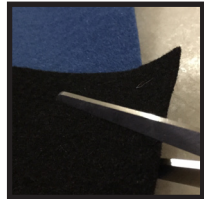
Reflections:

*Use only laser printers to print on the special paper as laser powder can be transferred but not for the ink of inkjet printers.

*Peel fast but in a consistent motion so that the image transferred will stick properly and if it is on a fabric, it will not distort with the motion.



Technique 2 - Fabric of Threads



Fabric of Threads

Technique 2

Materials Needed:



Threads



Water Soluble
Stabilizer



Fabrics



Cube Mould



Acrylic Spray



Sewing Machine

Process:

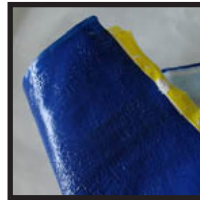
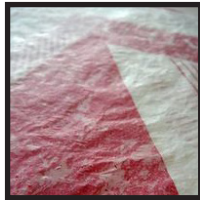
- 1) Set up sewing machine with the choice of threads.
- 2) Lay small pieces of fabrics in between the water soluble stabilizer. (Optional)
- 3) Sew threads onto the stabilizer and repeat with different color of threads.
- 4) Continue until the stabilizer is sufficiently covered with threads to form a tight interlocking web.
- 5) Run the finished piece under water to until the stabilizer is completely dissolved.
- 6) Put it on a cube mould and leave it to dry.
- 7) Spray coats of acrylic spray for the threads to retain its shape.

Reflections:

*Overlap or use two layers of stabilizer if putting other fabrics for easy sewing.

*When using mould, sew a bigger area surface on the stabilizer than the mould as it is better to trim off the excess thread than in sufficient amount of surface area for the mould.

Technique 3 - Fusing of Plastics



Fusing of Plastics

Technique 3

Materials Needed:



Plastic Bags



Baking Paper



Bubble Wrap



Scissors



Hot Iron

Process:

- 1) Cut and lay out the plastic bags to the ideal choice, color and position.
- 2) Insert bubble wrap in between the plastic bags for extra thickness and strength (Optional)
- 3) Put a piece of baking paper over the ideal design and start ironing.
- 4) Keep adjusting the temperature, observe when the plastic melts and fuse together.
- 5) Repeat steps until satisfied thickness and combination.
- 6) When done, let the plastic cool down before retrieving it.

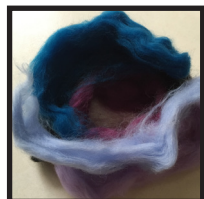
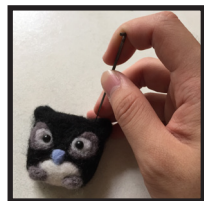
Reflections:

*Press and hold the iron for 10-15 seconds instead of moving the iron around to fuse more efficiently.

*It is important to use the baking paper if not a towel in between as if the plastics are directly contacted with the iron, it will melt and stick onto the iron.



Technique 4 - Felting



Felting

Technique 4

Materials Needed:



Felt Wool



Felting Needle



Bubble Wrap



Soap Solution

Process:

Needle Felting

- 1) Take a pinch of felt wool, roll it to ideal shape of choice, starting poking with felting needle.
- 2) Repeat and combine the felt wool until satisfied shape.

Wet Felting

- 1) Pinch and lay out the felt wool to the ideal choice, color and position on the bubble wrap.
- 2) Apply soap solution and start twisting and rubbing the felt wools.
- 3) Repeat until satisfied shape and let it to dry.

Reflections:

*Put a piece of sponge or styrofoam underneath for the needle felting to prevent the felting needle to break.

*Be generous putting the felt for the wet feling as it shrinks during the process with in contact with water.

Technique 5 - Appliqué



Appliqué

Technique 5

Materials Needed:



Threads



Fabrics



Scissors



Sewing Machine

Process:

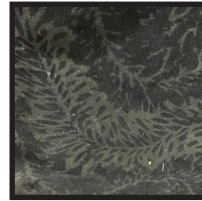
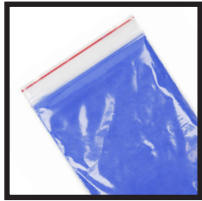
- 1) Decide on a thing and how it is going to be made.
- 2) Cut and lay out the fabrics to the ideal choice, color and position.
- 3) Set up the sewing machine with ideal threads and starting sewing.
- 4) Try different types of sewing and stitching style if applicable. (Optional)

Reflections:

*Plan the process and layers as it can be complicated

*Use hand sewing for more accuracy especially for corners and short distances.

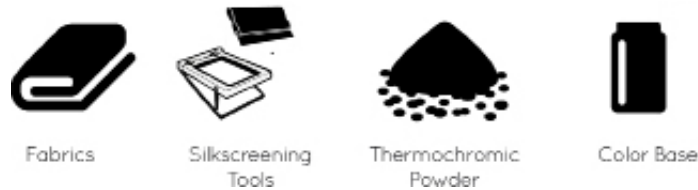
Technique 6 - Thermochromic Inks



Thermochromic Inks

Technique 6

Materials Needed:



Process:

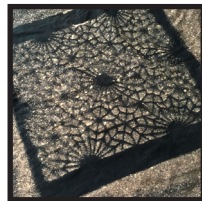
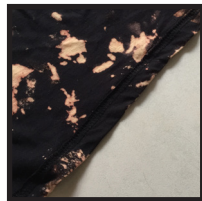
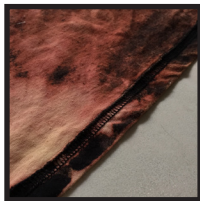
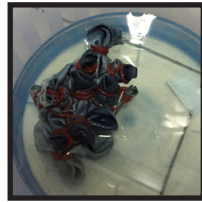
- 1) Mix thermochromic powder with ideal color base.
- 2) Prepare and lay out the fabric.
- 3) Set up silkscreening tools and start to print the mixture onto the fabric.
- 4) Leave it to dry properly.
- 5) When reacted to change in temperature, the powder is activated and the color base will appear.

Reflections:

*Use a contrasting color of the thermochromic powder and base color for a better effect when the reaction occurs.

*Wash the silkscreening tools for better results and to prevent clots a unevenness when applying.

Technique 7 - Bleaching



Bleaching

Technique 7

Materials Needed:



Process:

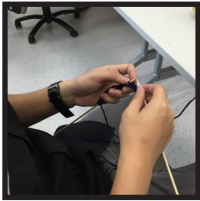
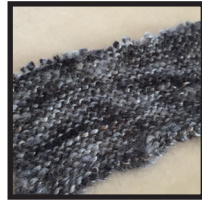
- 1) Prepare the fabric by tying with rubber bands, creasing or folding it to create interesting bleaching effects.
- 2) Pour the bleaching and water to dilute it into a spray bottle for easy usage. (Optional)
- 3) Apply the bleach onto the fabric by spraying or soaking in bucket.
- 4) Once done, leave it until the desired effects have emerged.
- 5) Wash it thoroughly with water and leave it to dry.

Reflections:

*Wear light colored or unwanted clothes as the droplets of bleach may splashed on you when spraying.

*Use dark-colored fabrics such as black or denim fabrics for maximum contrasting effects.

Technique 8 - Knitting



Knitting

Technique 8

Materials Needed:



Threads



Crochet
Needles



Knitting
Needles



Yarns



Time and
Patience

Process:

- 1) Tie a slipknot and slide the knot onto one end of the knitting needle to pull it to tighten.
- 2) Wrap the yarn into a loop around your hand and slip the loop onto a knitting needle.
- 3) Repeat until desired length.
- 4) Insert the other knitting needle through the first stitch and loop the it with the new yarn.
- 5) Slide the second loop through the first loop and let go one stitch of of the initial knitting needle.
- 6) Repeat until the end of the stitches and swap places of the knitting needles.
- 7) Be prepare to spend an ample amount of time and patience to a desired length.

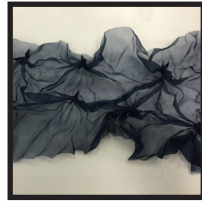
Reflections:

*Be patience, practice makes perfect, it may be confusing at first but once you get it, it may be fun and addicting.

*Pause when you are tired, knitting requires focus to prevent any errors and mistakes.

*Use multi-colored yarns for better effects.

Technique 9 - Thermoplastic Fabrics



Thermoplastic Fabrics

Technique 9

Materials Needed:



Process:

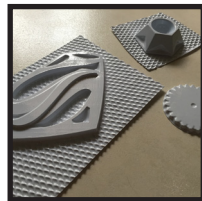
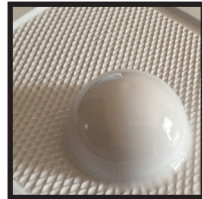
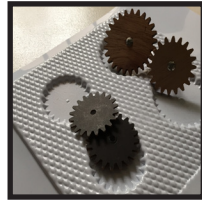
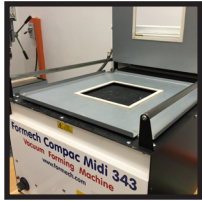
- 1) Boil a pot of water.
- 2) Tie marbles, fold or crease the fabric with rubber bands or aluminium foil.
- 3) Wrap the whole desired tied, folded or creased fabric with aluminium foil.
- 4) Place it into the boiling water and wait for 45mins.
- 5) Unwrapped the aluminium foil, rubber bands and marbles and leave it to dry.
- 6) The fabric will retain the deformed shape once it is dried.

Reflections:

*Use steam instead of direct boiling water to prevent the fabric of getting wet.

*When using the done fabric for application, sew into a stable fabric before proceeding as the deformed shape is hard to handle and sew sometimes.

Technique 10 - Vacuum Forming



Vacuum Forming

Technique 10

Materials Needed:



PVC Sheets



Moulding Objects



Vacuum Forming Machine

Process:

- 1) Set up the vacuum forming machine.
- 2) Place moulding objects onto the working surface of the machine as desired.
- 3) Mount and clamp the PVC sheet onto the machine.
- 4) Heat the PVC sheet sufficiently until there are no creases.
- 5) Operate the machine by pulling the moulding objects onto the PVC sheet.
- 6) Turn on the vacuum to form the shapes and leave it to cool down for a few seconds.
- 7) Dismount the PVC sheet and remove the moulding objects.
(Use compressed air if needed)

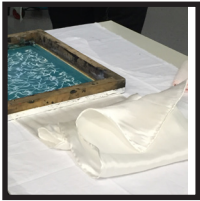
Reflections:

*Think before doing, do not use a mould that is not possible to take out.

*Control the pump well to achieve a uniform vacuum forming result.

*Can be use as moulds for the later techniques such as resin and latex.

Technique 11 - Etching (Fabric)



Etching (Fabric)

Technique 11

Materials Needed:



Velvet Fabric



Silkscreening
Tools



Etching Chemical



Hot Iron



Water



Dyeing Agent

Process:

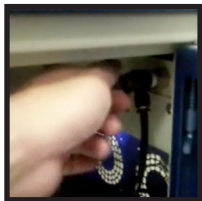
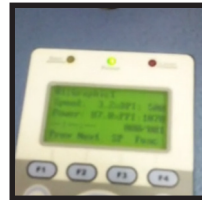
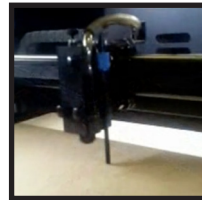
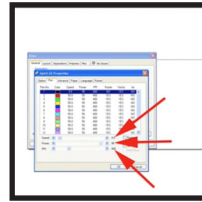
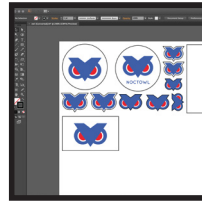
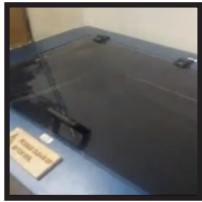
- 1) Prepare and lay out the velvet fabric.
- 2) Set up silkscreening tools and start to print the etching chemical onto the fabric.
- 3) Leave it to dry properly.
- 4) Place a piece of baking paper and hot iron it till crisp brown color.
(Rub test whether it is ready to wash)
- 5) Wash the fabric with water for the etched part to fall off (Rub if needed)
- 6) Once done, soak it in dyeing agent and dry it. (Optional)

Reflections:

*Wash the silkscreening tools for better results and to prevent clots a unevenness when applying.

*Wait for it to dry properly before ironing and make sure it turn crisp brown color before washing for better results

Technique 11 - Etching (Wood/ Acrylic)



Etching (Wood/ Acrylic)

Technique 11

Materials Needed:



Wood Planks



Acrylic Sheets



Design



Laser Cutting Machine

Process:

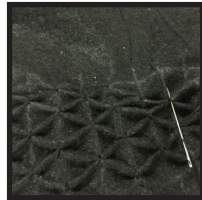
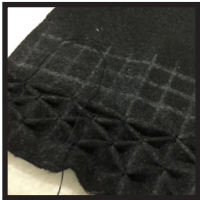
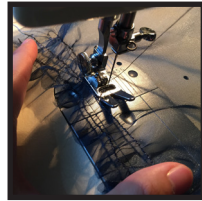
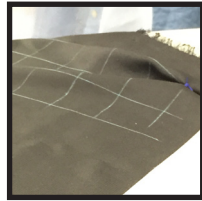
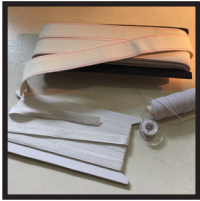
- 1) Prepare design in a digital file in vector form using Adobe Illustrator or Rhino.
- 2) Convert to DXF file and proceed to the laser cutting machine.
- 3) Turn on the compressed air to prevent burning. (Important)
- 4) Place design in CorelDraw and set the color layers to raster or cut.
- 5) Adjust the laser power and speed in accordance to the material cutting and check the raster and vector option.
- 6) Use laser goggles and try not to stare at the laser beam.
- 7) Clean up the fragments when done.

Reflections:

*Adjust the position of design closely so that it will not waste the material.

*Rastering will take sometime, but do not leave the laser cutting machine unattended, bring some stuffs to do or ask a friend to look after.

Technique 12 - Manipulating Fabrics



Manipulating Fabrics

Technique 12

Materials Needed:



Elastic & Normal
Threads



Elastic Bands
for Sewing



Fabrics



Sewing Machine

Process:

Normal Manipulation

- 1) Draw grids lines onto piece of fabric.
- 2) Use normal threads and sew in accordance to a pattern using the grid lines.

Elastic Thread Manipulation

- 1) Set up sewing bobbin with elastic threads and starting sewing to get the effect.

Elastic Band Manipulation

- 1) Cut the elastic band half of the length of a piece of fabric.
- 2) Stretch the elastic band and start sewing onto the fabric to get the effect.

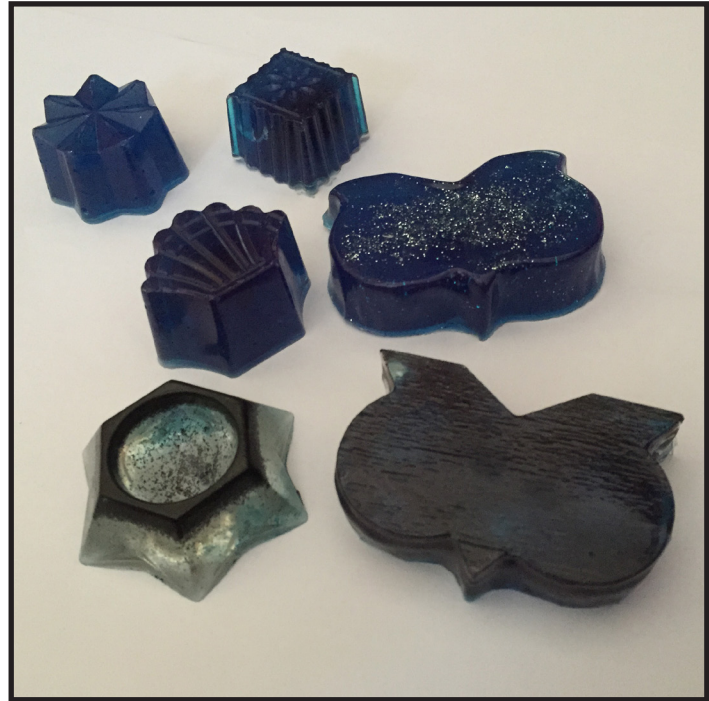
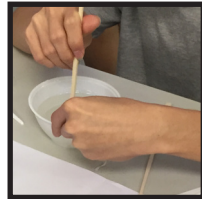
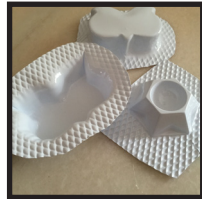
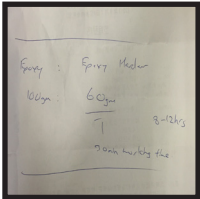
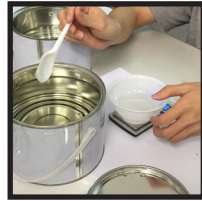
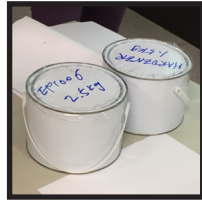
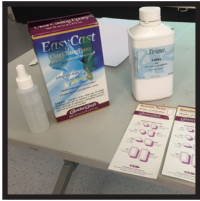
Reflections:

*Use same color fabrics and threads for better aesthetics.

*Felt fabrics is able to create a nice effect via normal manipulation.

*Satin fabrics like organza are good for elastic threads manipulation while other fabrics like leather are good for elastic band manipulation

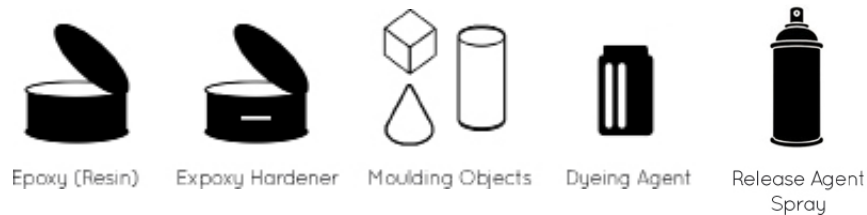
Technique 13 - Resin



Resin

Technique 13

Materials Needed:



Process:

- 1) Mix epoxy (100g) with hardener (60g) and stir slowly to prevent bubbles.
- 2) Mix in the dyeing agent. (Optional)
- 3) Spray release agent onto the moulds.
- 4) Place objects to encapsulate into the mould. (Optional)
- 5) Pour in the mixture into the moulds.
- 6) Use a needle or toothpick to poke out bubbles if possible and leave it overnight.
- 7) Once fully dry, remove it from the mould.

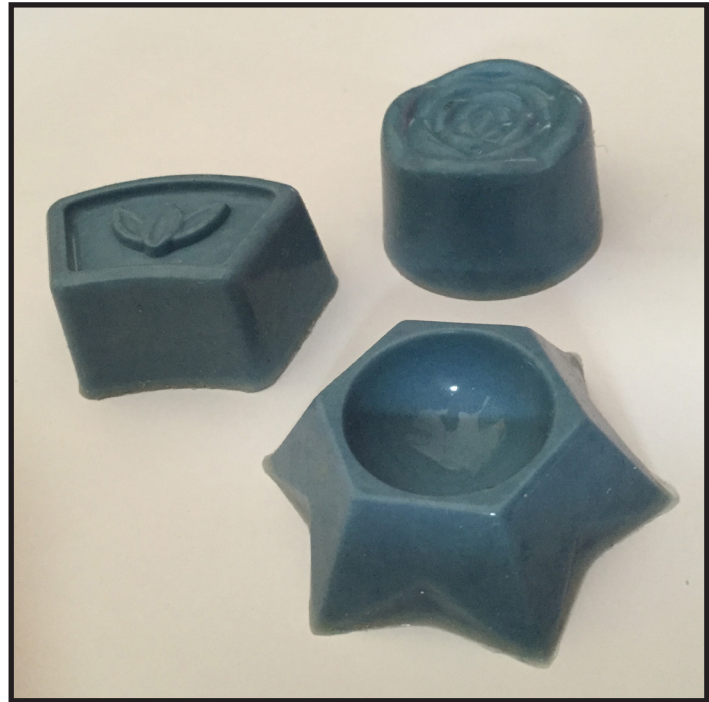
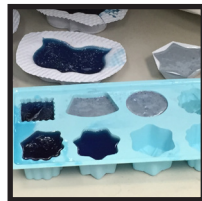
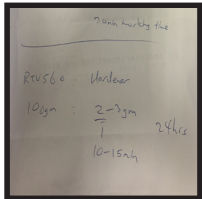
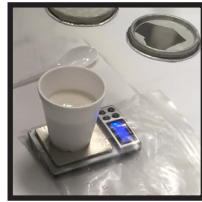
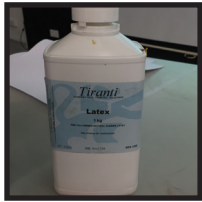
Reflections:

*Use gloves is possible, resin is very hard to wash off.

*Do layer by layer if you want the object to float in the middle of the resin.

*Resin will start to warm up when it is drying.

Technique 14 - Latex



Latex

Technique 14

Materials Needed:



Latex



Latex Hardener



Moulding Objects



Dyeing Agent



Release Agent
Spray

Process:

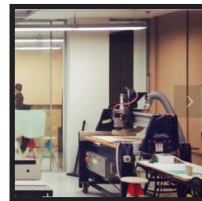
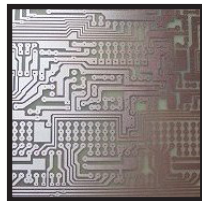
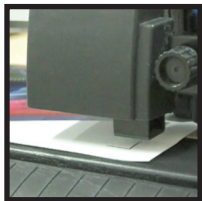
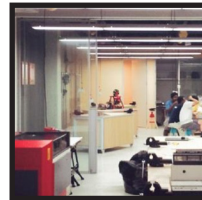
- 1) Mix latex (100g) with hardner (2-3g) and stir slowly to prevent bubbles.
- 2) Mix in the dyeing agent. (Optional)
- 3) Spray release agent onto the moulds.
- 4) Pour in the mixture into the moulds.
- 6) Use a needle or toothpick to poke out bubbles if possible and leave it overnight.
- 7) Once fully dry, remove it from the mould.

Reflections:

*Use gloves is possible, latex is very hard to wash off.

*Slightly easier to manage compared to resin.

Field Trip - Reflections



Touch & Print - Design | Create | Personalise

During this trip, we gathered at Sunshine Plaza and went on to discover the applications of heat transfer by Mr Leon. Other than the transfer printing methods that we learnt in Technique 1, there are many more types of heat transfer such as neon colors printing, white tone printing and also the etching on copper board.

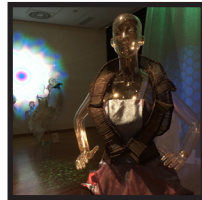
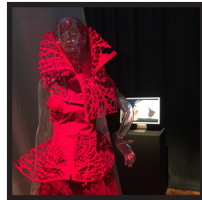
Besides learning the practical stuffs we were also taught about the theory of inks - RGB and CMYK. RGB consists of Red, Green and Blue and is an addition process which is mainly for digital screening on computers as they provide a more vibrant color but it is not accurate when printing. CMYK consists of Cyan, Magenta, Yellow, Black which are the colors that are necessary for all printing. It is a subtractive method, which require four instead of three colors with the addition Black as when the three colors are mixed, it cannot obtain a perfect black.

This is really a fruitful as we get to experience how the industry and professional printing works. As we know a printer has its limits, printing of special materials or special surfaces requires different types of equipments and the process is really amazing. We also can email Mr. Leon at leon@touch-print.com.sg if we needed any further assistances on heat printing in the future.

One Maker Group

We proceeded to the One Maker Group workshop at National Design Center after that and was introduced with the amazing variety of facilities offer there. It is really a professional workshop which offers various industry techniques such as laser cutting, CNC router and 3D printing. It is open to the public and students who needs the extra spaces and equipments for their personal projects. Overall, I am glad to attend this field trip as it an eye-opener in learning what the industry is doing and how we can relate to them with our school activities.

Exhibition - Sense Sensuality



Sense Sensuality

Exhibition

Textiles have over centuries been repositories of narrative, histories, and the creative encoding of cultural identities. With digital media, the creative possibilities have been dramatically extended as textiles are renewed and reinvented as sites of communication, knowledge, innovation, and creativity in and among cultures. Not only are global networks providing entry for ethnic communities who have long been marginalized if not excluded from the monolithic narrative of “globalization”, it is the textiles themselves that are playing dynamic new roles in contemporary society. As globalization is increasingly a collection of locals, the textiles of the world’s diverse cultural communities and their associated histories, heritage (including historical textiles), cosmologies, and memories are serving as a form of physical-digital metadata for the intensely creative and quickly growing field of wearable technologies, and emerging genres of the creative arts that comprise material-digital culture worldwide.

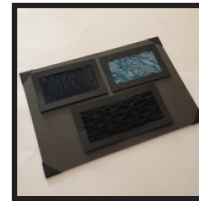
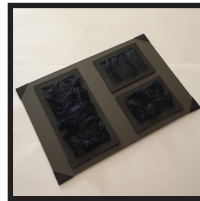
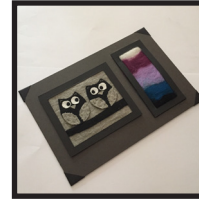
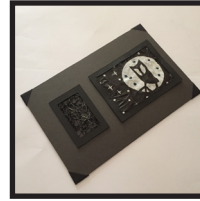
Clothing is often regarded as an outer skin that has social, psychological and physical functions (Bolton, 2002). With technology, such functions can be amplified and go beyond needles and threads. Artists and designers around the world are actively embedding technologies into clothing to produce new interactive interfaces that connect technology with fashion, human beings, and the environment.

Sense and Sensuality celebrates new creative approaches that bring artists and designers together with engineers, scientists, and scholars from other fields. This exhibition examines how technology is being used to interact with our body, cultures and surroundings, and engage our senses and expand our sensibility.

Artists participating in this exhibition comprise faculty, students and alumni from ADM, and leading artists from Singapore and Southeast Asia, the United States, Canada, Europe, and Australia. The exhibition is divided into five areas including craft, form, function, expression, and dimension in relation to technology.



Fabric Panels



Box Process



