



# Product Design

## Team 3 – Definition

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# Target Hand Tools

Selection of ideas and exploring possible solutions



# Process

## First Brainstorming

- ◆ Listed around 20 items
- ◆ Focused on pets, physical challenges, cosmetics, Third World issues

## Second Brainstorming

- ◆ Listed an additional 14 items
- ◆ Narrowed both lists down to 9~10 from each

## Consolidation

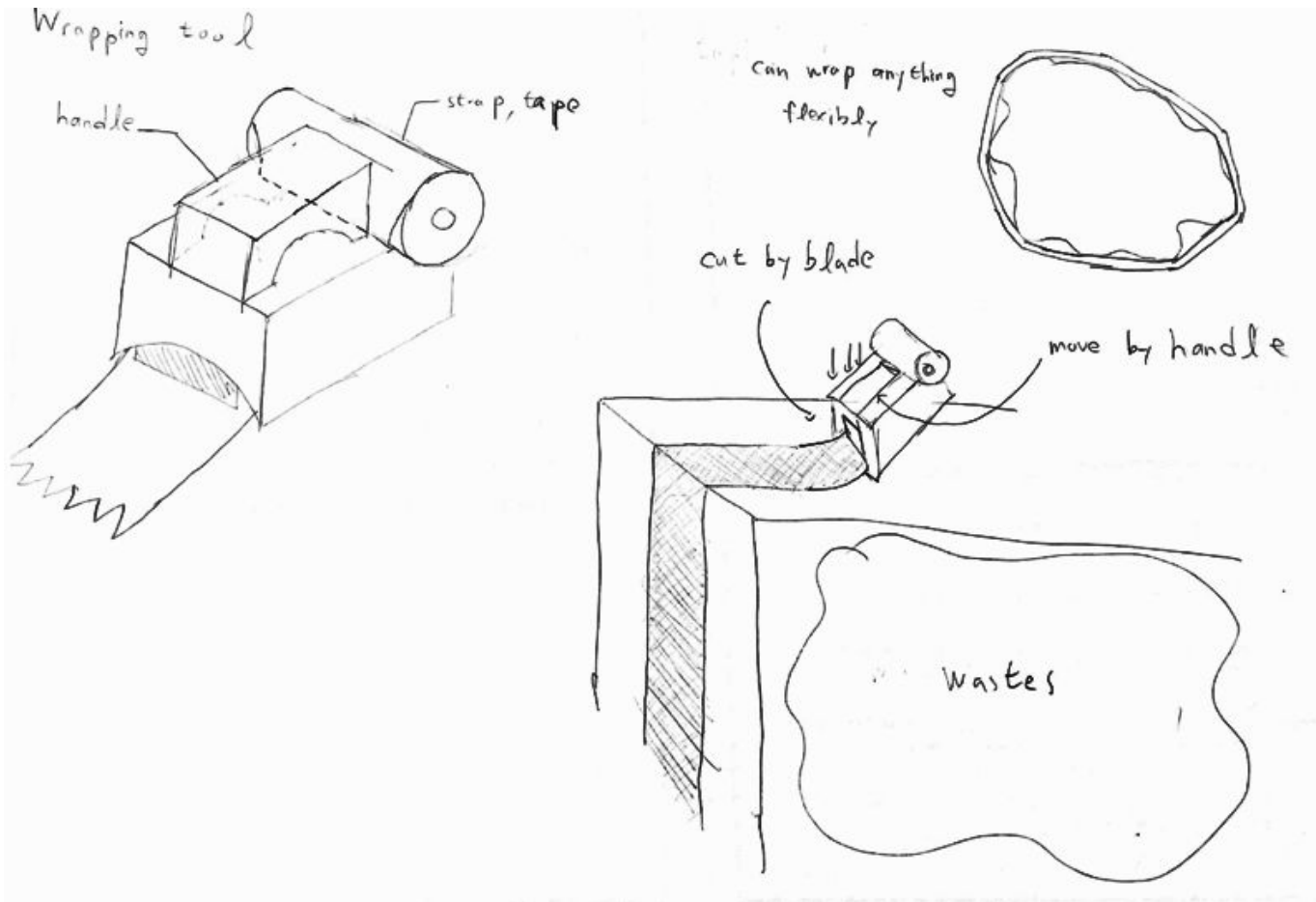
- ◆ Total of 19 items
- ◆ Brainstorming of possible solutions and their mechanisms



1

# Wrapping Tool

To wrap paper and other items with ease



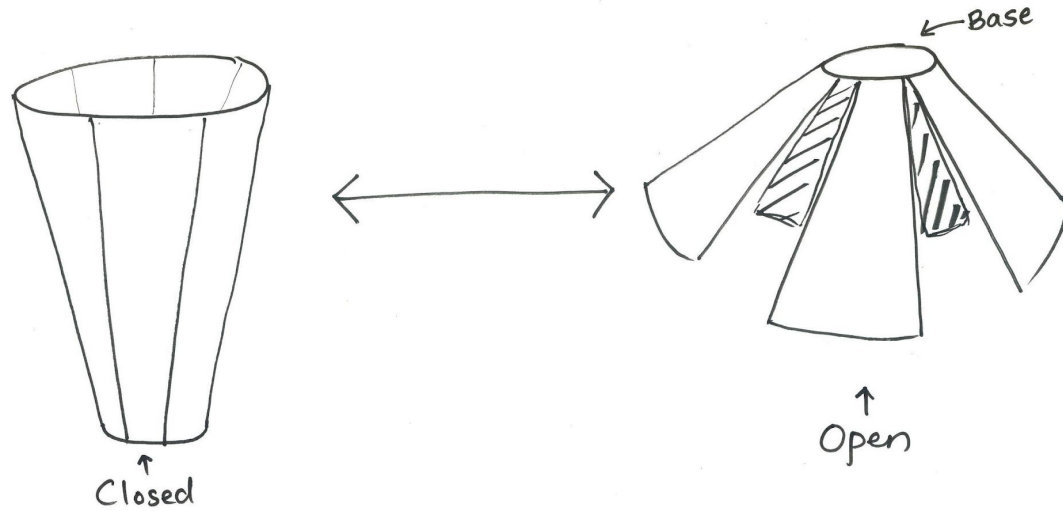
- ◆ **Problem** - Difficult to wrap up paper
- ◆ **Idea** - Tool with handle where a strap or tape can be wrapped around paper
- ◆ **Expectation** - Can wrap up most things + Cut and staple strap with tool itself
- ◆ **Challenge** - Ergonomic handle and strong blade



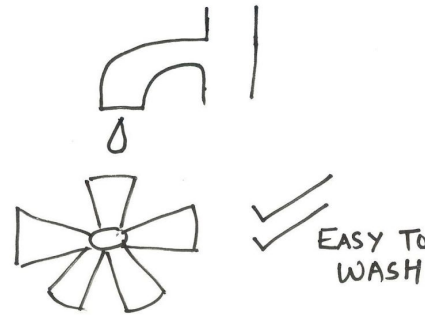
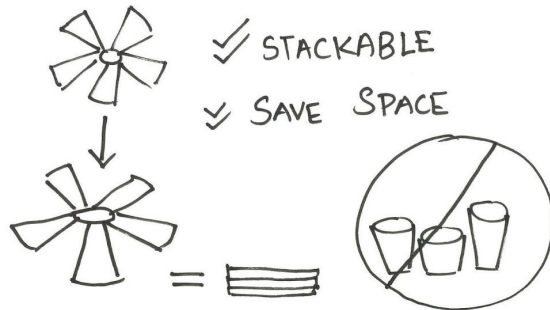
2

# Tumbler

For easier storage and cleaning



- ♦ **Problem** - Tumblers are difficult to clean inside, making people reluctant to use them despite environmental benefits
- ♦ **Idea** - Making a splittable tumbler which can be laid flat
- ♦ **Expectation** - Easy to wash, dry and store + Save space
- ♦ **Challenge** - Creating locking mechanism and ensuring liquid does not leak through





3

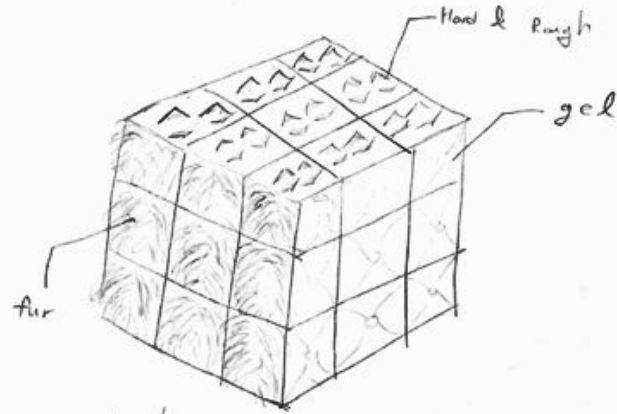
# Tactile Rubik's Cube

For visually challenged users

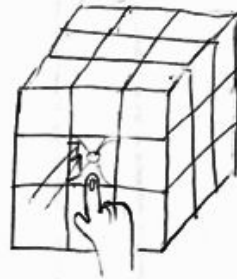


Cube for Blind with different texture

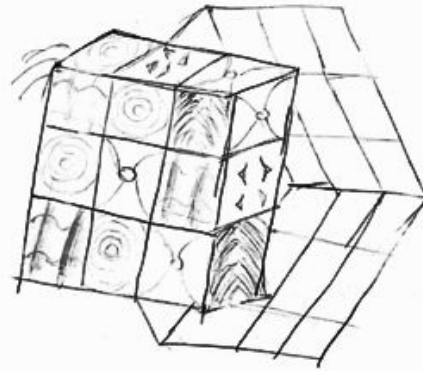
Slowly Enjoy touching feeling



make easily by seicker



attach it



- ♦ **Problem** - Existing cube is only for people who have sight
- ♦ **Idea** - Attach 6 variable and distinct textures (velvet, rubber, glass) on existing cube
- ♦ **Expectation** - Usable by the visually challenged
- ♦ **Challenge** - Making experience equivalent to that of the standard cube

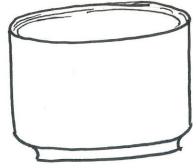


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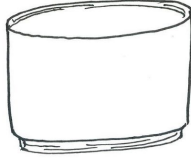
# Modular Tumbler/Mug

Buildable to suit any size requirements

Base unit  
(200 ml)  
↓



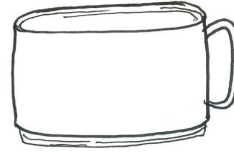
Hollow unit  
(200 ml)  
↓



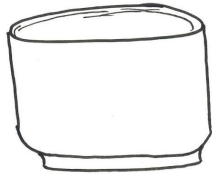
Hollow unit  
(100 ml)  
↓



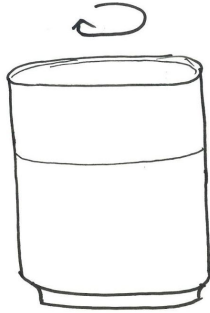
Handle unit  
(200 ml)  
↓



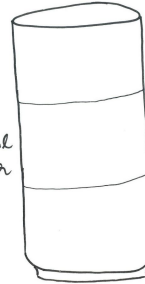
100 ml



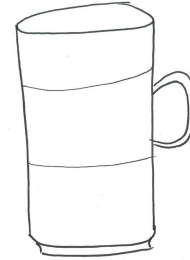
200 ml



300 ml



600 ml  
Tumbler



500 ml  
Mug

Customise as per your requirements !

- ♦ **Problem** - A customisable tumbler/mug that allows people to choose depending on the drink and situation
- ♦ **Idea** - Modules allow customisation
- ♦ **Expectation** - Buildable tumbler/mug providing satisfaction with a full cup no matter the scenario
- ♦ **Challenge** - Creating locking mechanism and ensuring liquid does not leak through

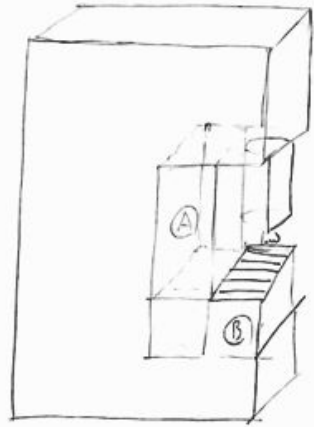


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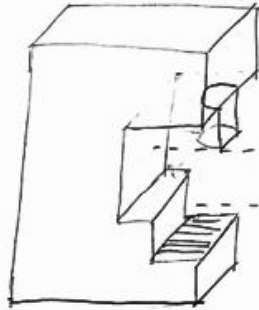
# Staircase Water Purifier

For better adaptability

## Staircase Water purifier



Can move  
block A & B  
by situation



Can get rid of  
A & B block by hand

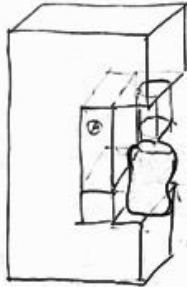
① Moving A



↔ get Horizontal space

← like putting Bowl

② Moving B



↑ get vertical space

← like putting tumbler

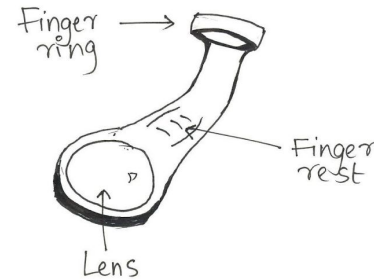
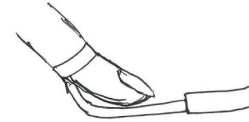
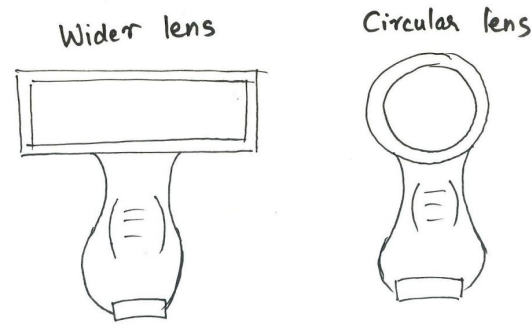
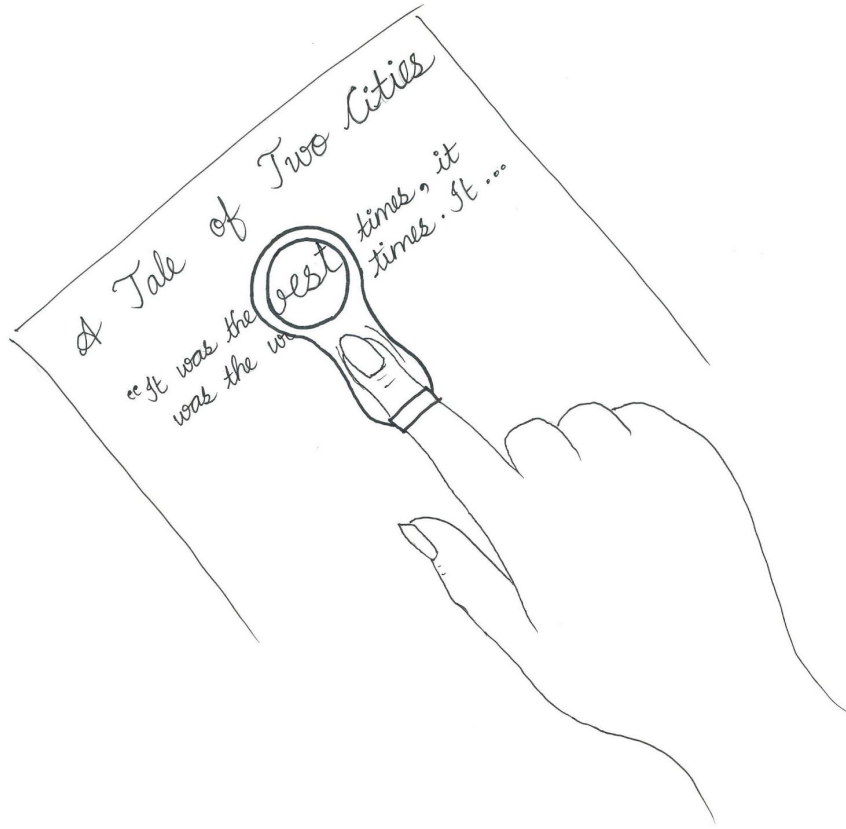
- ♦ **Problem** - Existing water purifier is not suitable for variable containers
- ♦ **Idea** - Make detachable A&B blocks, so we can remove one of them by situation
- ♦ **Expectation** - Various size container can be used
- ♦ **Challenge** - Add other functions and think about beauty + Find better mechanism



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# Magnifying Finger Ring

Small ring with magnifying glass for  
easier reading



- ◆ **Problem** - Annoying to carry magnifying glass + Uncomfortable grip and reading as magnifying glass must be held with one hand, while flipping through book with other
- ◆ **Idea** - Tiny magnifying glass on a ring that can be placed on finger
- ◆ **Expectation** - Compact and easy to carry and comfortable to read with
- ◆ **Challenge** - Choosing shape depending on reading style



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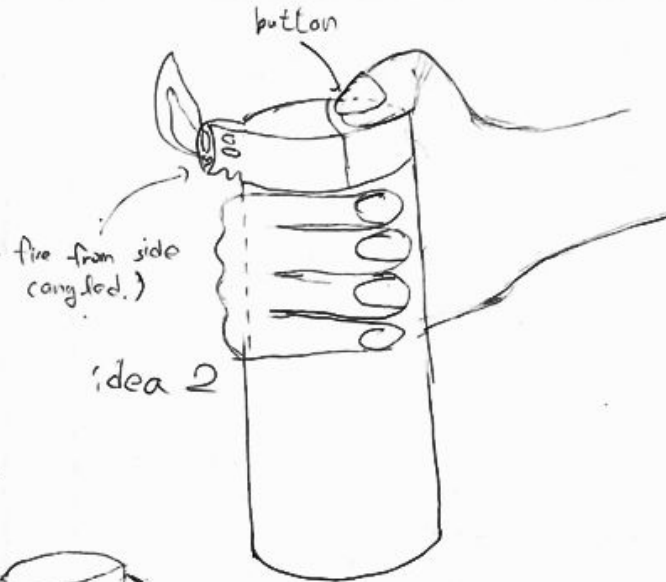
# Pocket Lighter

Redesigned for safer use



# Safe Lighter

idea 1



or combine  
2 ideas



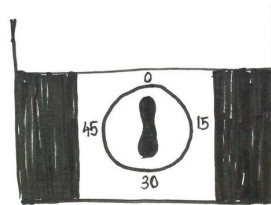
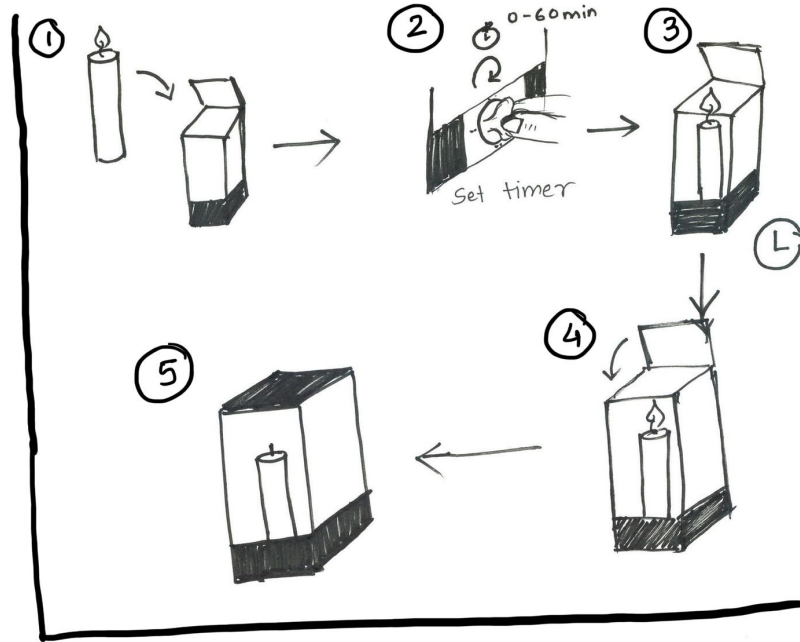
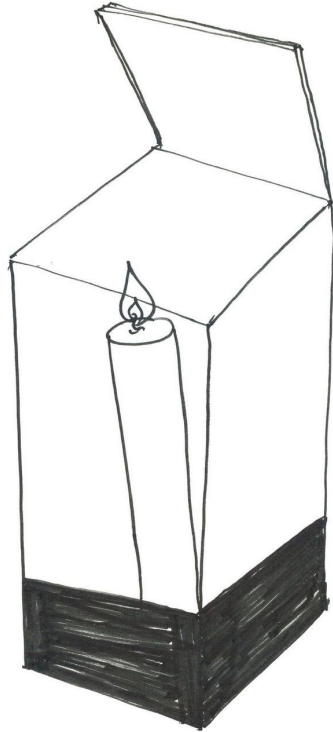
- ♦ **Problem** - Fire is too close to the finger, increasing risk of burns
- ♦ **Idea** - Add button for lighting and output from side
- ♦ **Expectation** - Decreasing heat at different angles
- ♦ **Challenge** - Adapting lighting mechanism (from wheel to button)



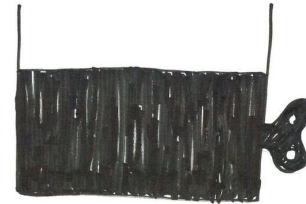
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# Automatic Candle Snuffer

To put out candles after a fixed time



Back



Side

- ♦ **Problem** - Leaving candle unattended for extended periods of time can be unsafe + Smoke can cause issues
- ♦ **Idea** - Automatically shutting cover after a fixed time
- ♦ **Expectation** - User can leave or fall asleep without any hazards
- ♦ **Challenge** - Making closing mechanism

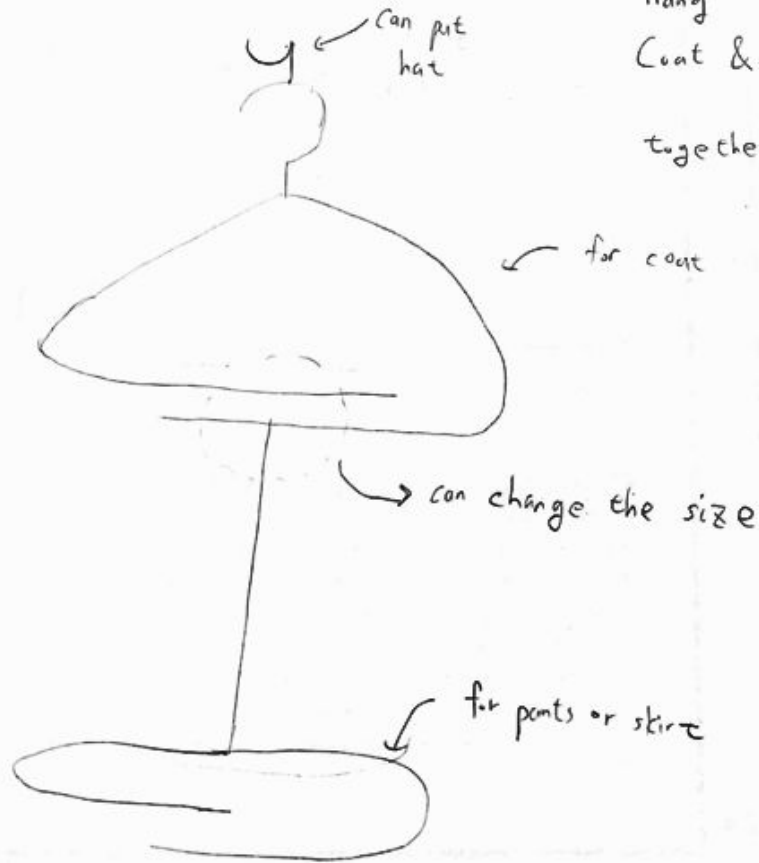


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# Multi-Use Hanger

To hang more than one kind of item

## Look Hanger



Hang  
Coat & Pants  
(or skirt)  
together



store cloth by look unit

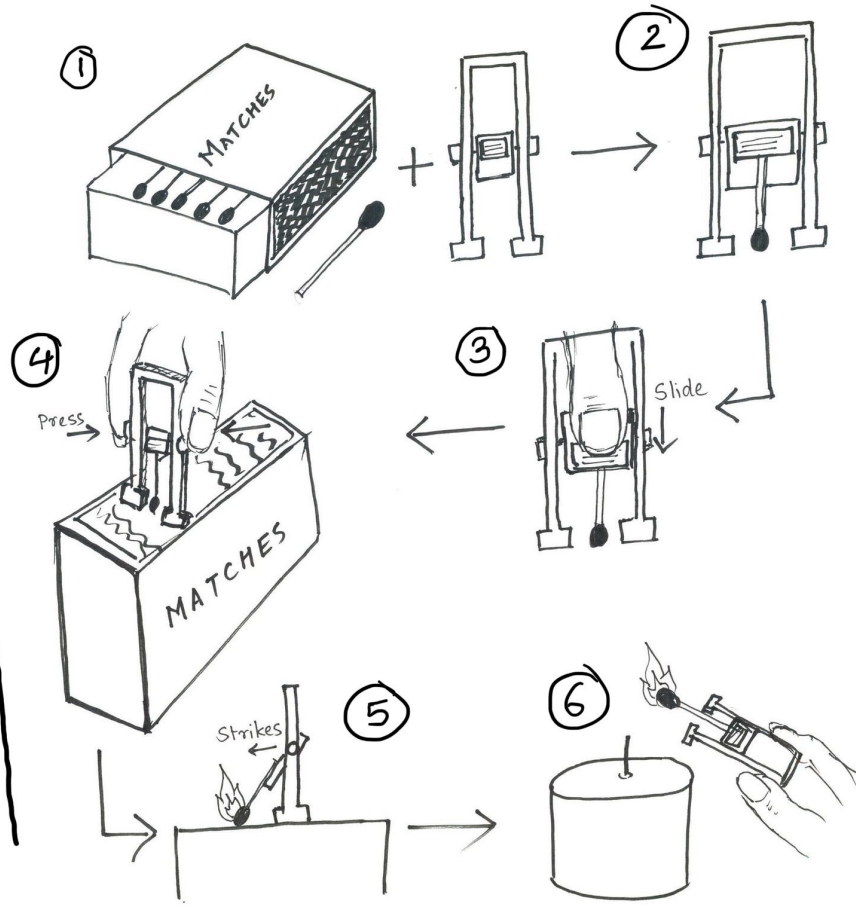
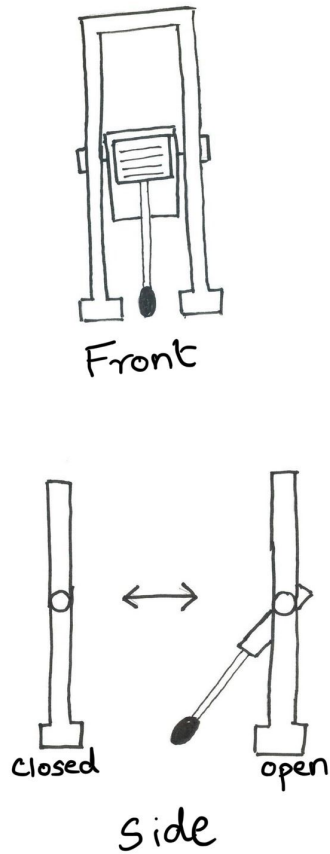
- ♦ **Problem** - Various types of hangers needed depending on item + Difficult to hang tops wide necks and prevent t-shirts from stretching
- ♦ **Idea** - All-in-one hanger for all types of clothes
- ♦ **Expectation** - Easy to hang clothes + Hang an entire outfit on one hanger + Save wardrobe space
- ♦ **Challenge** - Making hanger easy to put tops on and take off without interference from bottom part



10

# Match Lighting Tool

To light matches with safety and ease



- ♦ **Problem** - Lighting matches can be difficult for many, especially unstable hands + Burn risk as fire reaches end of match
- ♦ **Idea** - Tool that acts as holder and striker by pushing a button
- ♦ **Expectation** - Safer and easier use of matches
- ♦ **Challenge** - Heat resistant material needed + Striking mechanism

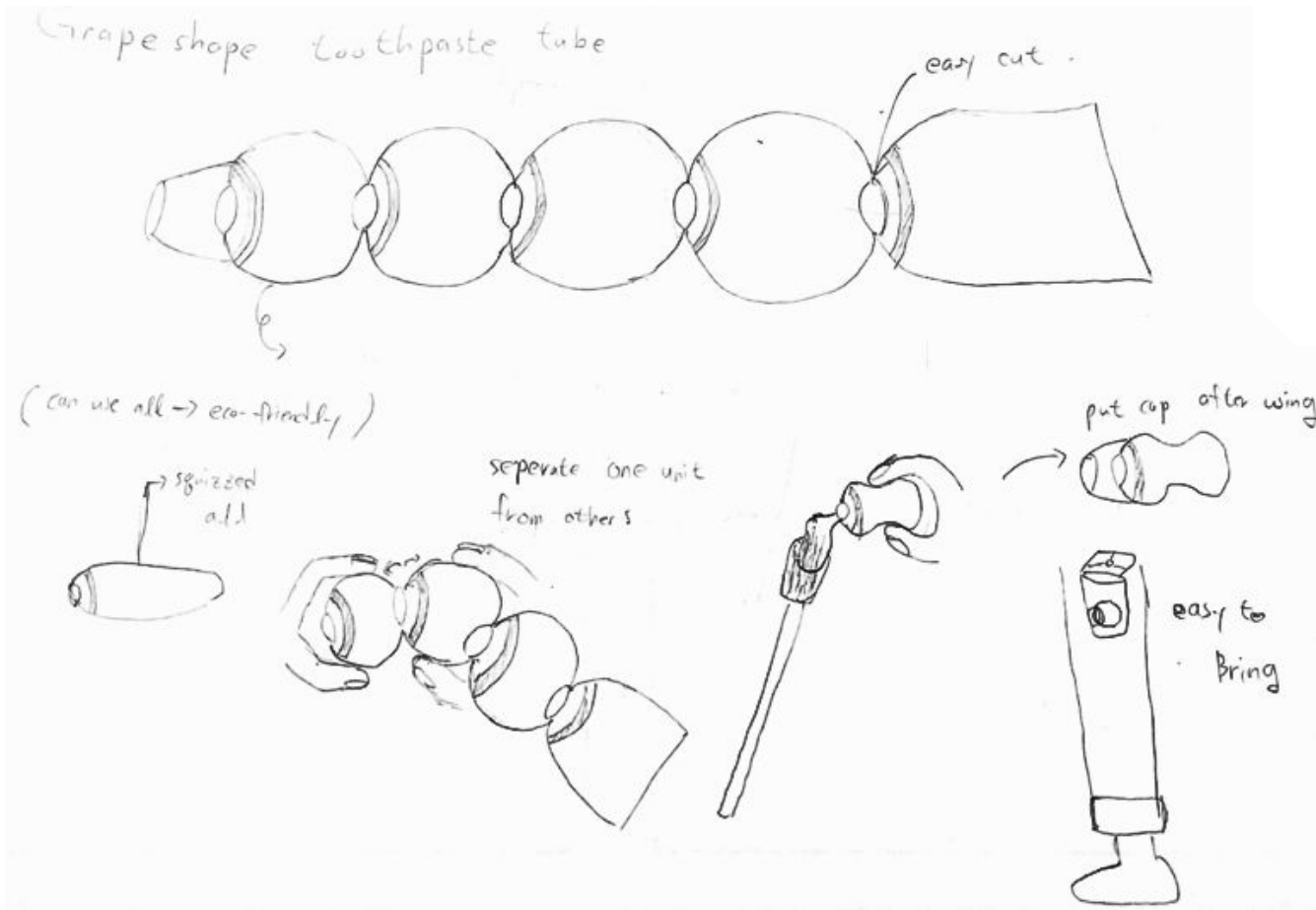


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# Grape Shape Toothpaste Tube

For more economical and eco-friendly  
usage





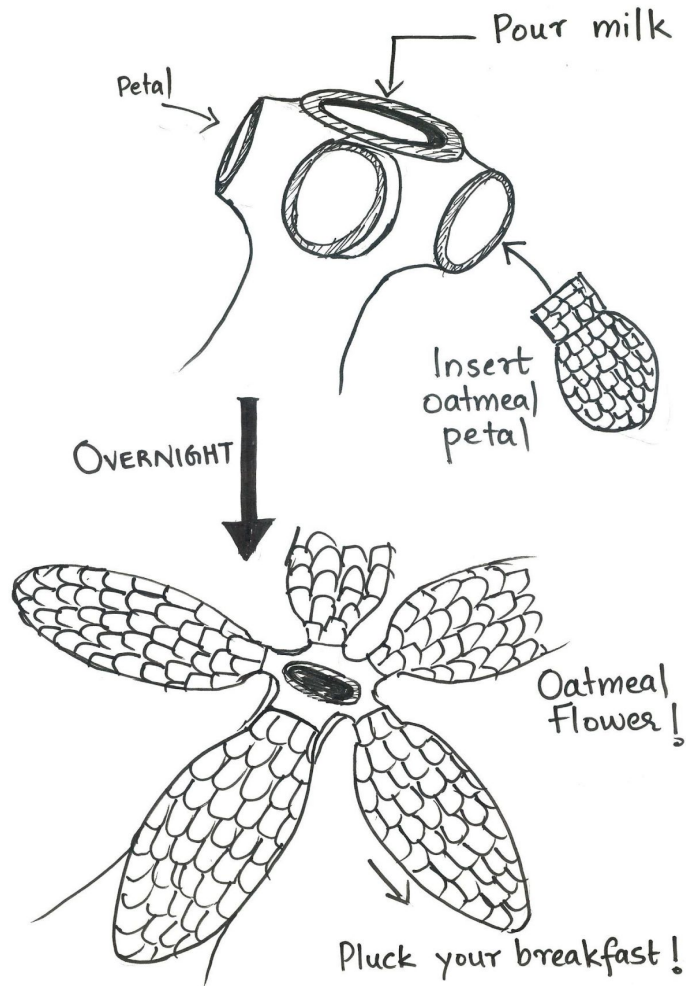
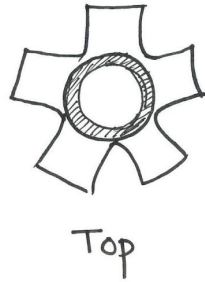
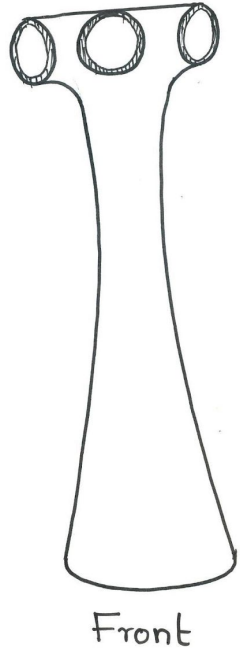
- ♦ **Problem** - In existing toothpaste tubes, using up all the contents can be difficult + Too messy to carry
- ♦ **Idea** - Divide one tube into several small spherical tubes
- ♦ **Expectation** - Easy to use all of contents and carry
- ♦ **Challenge** - Mechanism to make cap fit each unit



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# Oatmeal Flower

For a fun breakfast experience



- ♦ **Idea** - Stem shaped container to fit in petal shaped oatmeal pieces and pour in milk
- ♦ **Expectation** - Emotional design for a more fun breakfast
- ♦ **Challenge** - Making it easy to clean + Shape of oatmeal



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# Flexible Scratcher for Pets and Owners

To provide a scratching surface wherever  
desired

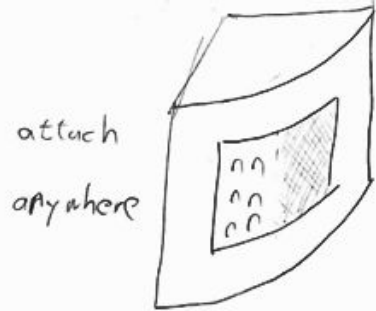
## Flexible scratcher



play & passage



exercise



attach  
anywhere



exercise together



play together

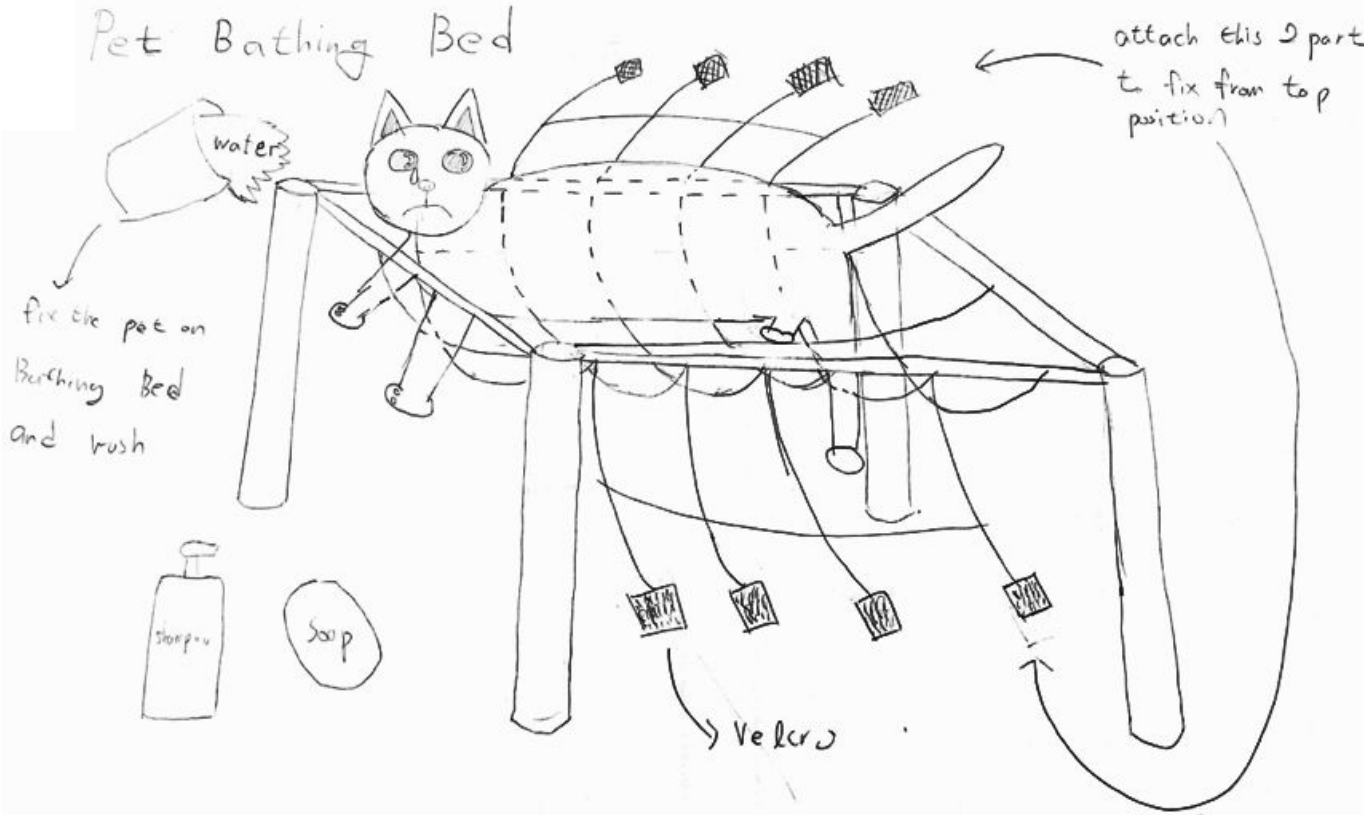
- ♦ **Problem** - Cats are easily sick of their toys and cat owners suffer space shortage because of many cat items
- ♦ **Idea** - Make attachable and flexible cat scratcher
- ♦ **Expectation** - Cats can enjoy scratching with various spaces, curvatures and angles + Saves space and easy to store
- ♦ **Challenge** - Finding appropriate textile



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# Pet Bathing Bed

For a better pet bathing experience



- ♦ **Problem** - Pets dislike baths, making it hard for their owners
- ♦ **Idea** - Make a comfortable bed which can fix the position of the cat and prevent it from moving violently
- ♦ **Expectation** - Owners can bathe their pets more easily
- ♦ **Challenge** - Making it feel comfortable for pets

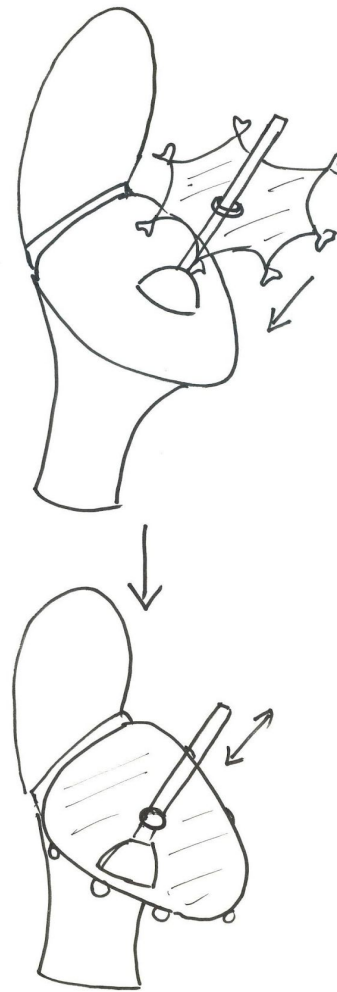
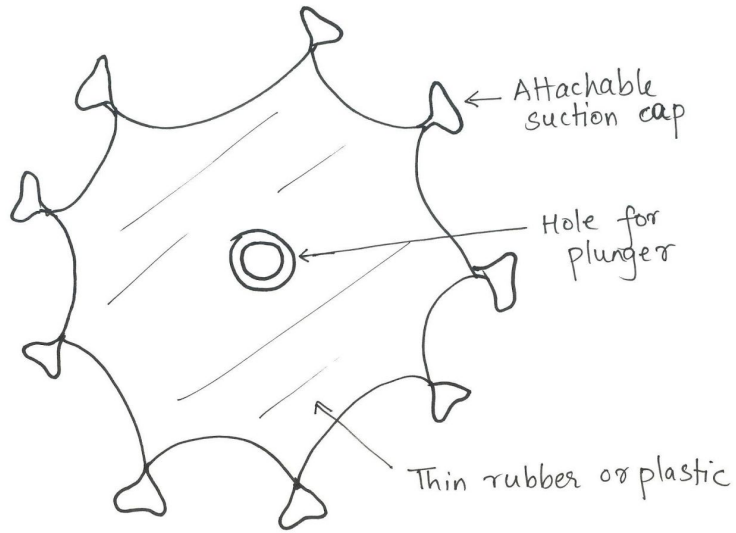


15

# Plunger Shield

To protect user from unclean water





- ♦ **Problem** – Risk of splashing unclean water while unclogging the toilet
- ♦ **Idea** – Provide a barrier
- ♦ **Expectation** – No risk of being soiled
- ♦ **Challenge** – Making material thick enough to stay put

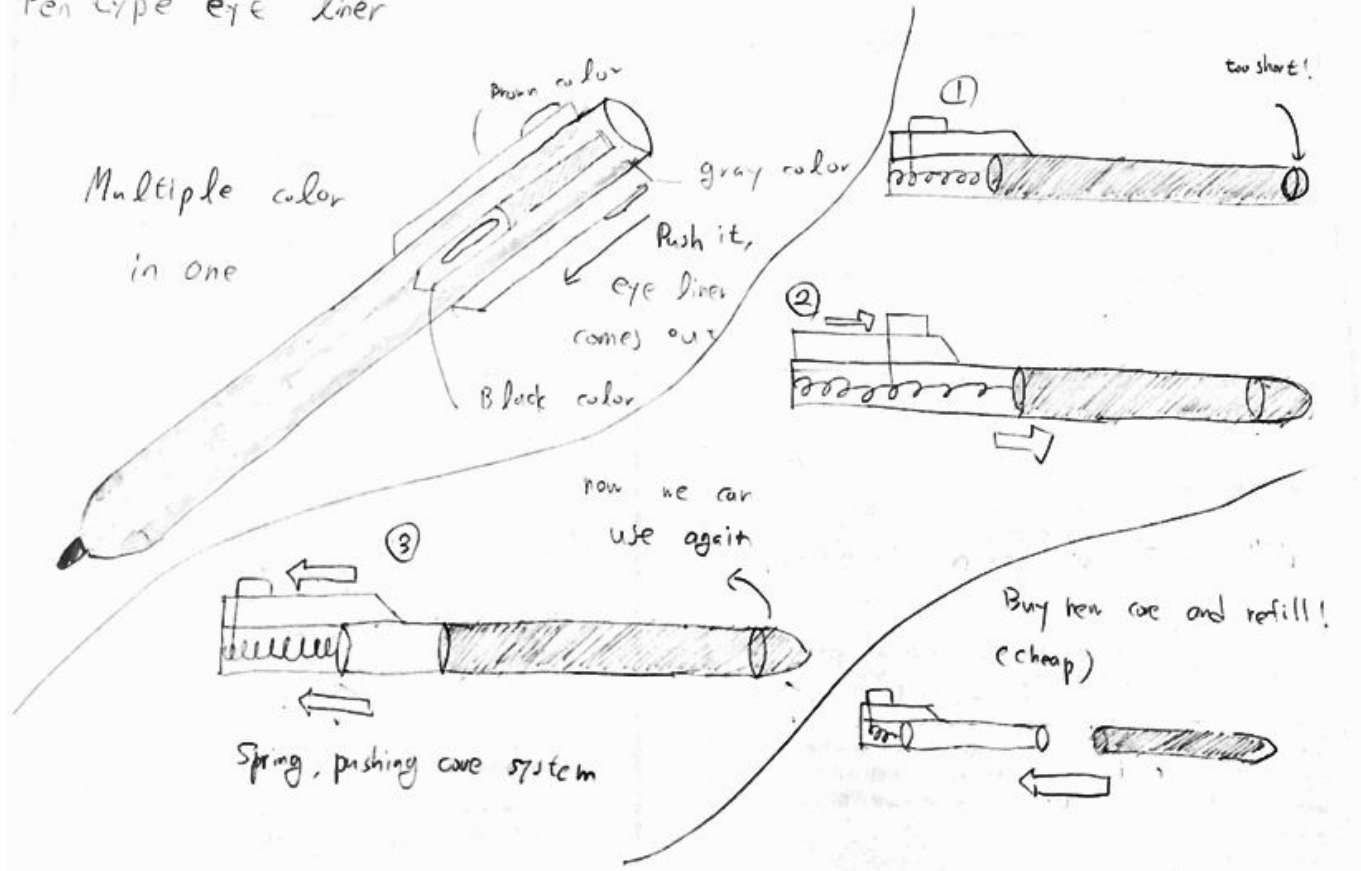


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# Pen Makeup Tool

For more options in one case

## Pen type eye liner



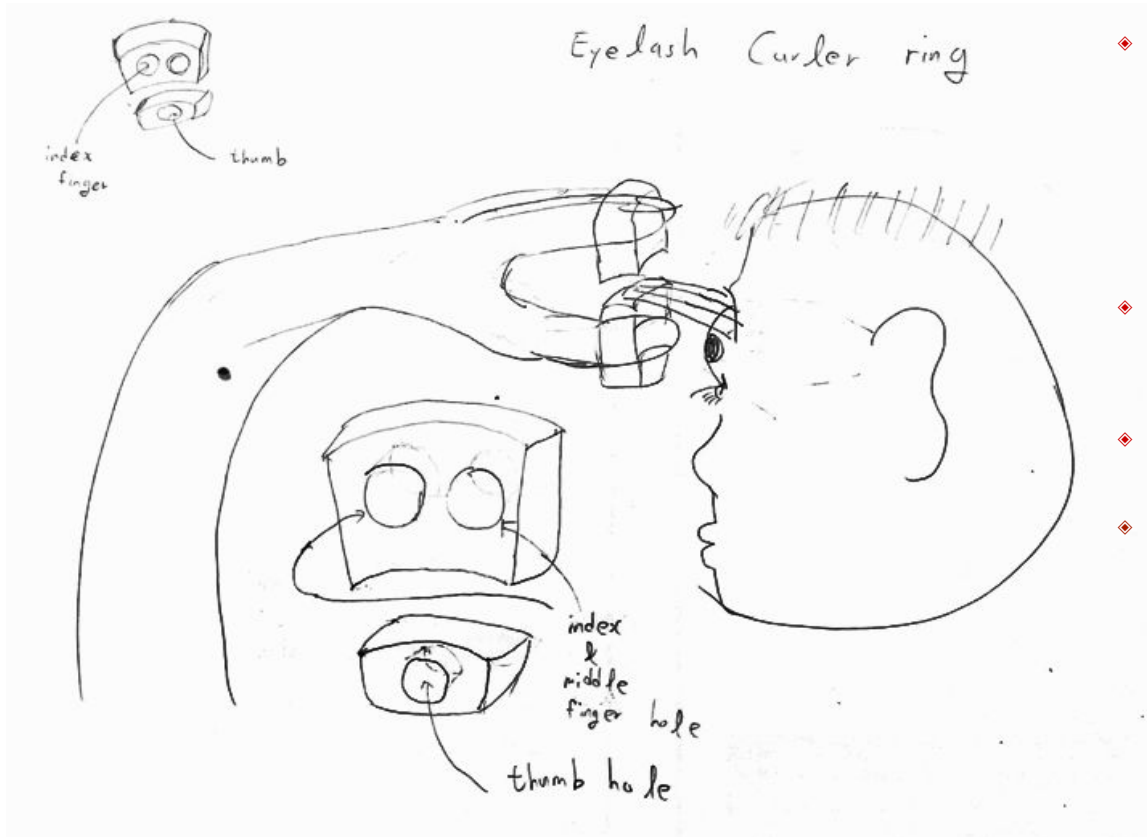
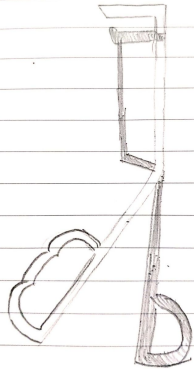
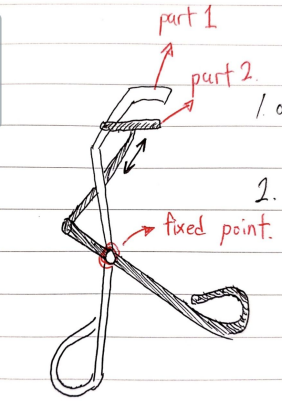
- ♦ **Problem** - Have to bring each makeup item and its tool to complete full makeup
- ♦ **Idea** - Combine makeup tools in the form of a multi-pen
- ♦ **Expectation** - Combine many makeup tools in one pen (easy to carry) + Just buy core and refill as needed (cheaper price)
- ♦ **Challenge** - Think better mechanism for refilling the core + Situation where only one runs out



17

# Eyelash Curling Ring

For more flexible and portable usage



- ♦ **Problem** - Only one fixed point, making it unstable when pressed + Only uses two fingers giving an inappropriate grip for detailed control
- ♦ **Idea** - Allow more fingers to grip + Keep one axis fixed + More portable
- ♦ **Expectation** - Easier to handle and control
- ♦ **Challenge** - Comfortable material for curling part

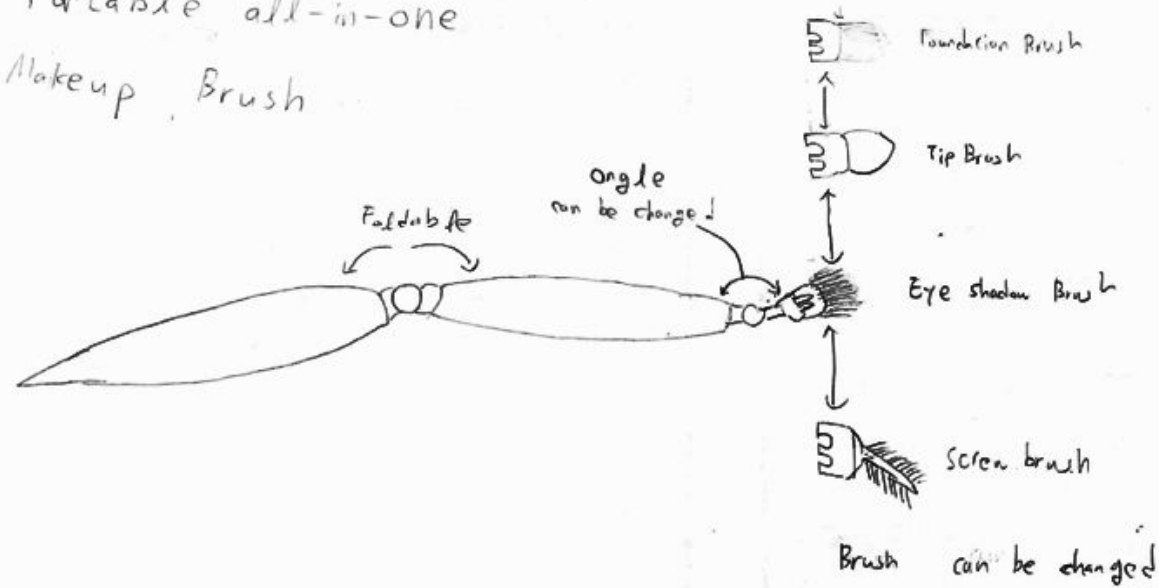


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# Portable Multipurpose Makeup Brush

To function as a brush for every kind of  
makeup

# Portable all-in-one Makeup Brush



- ♦ **Problem** - Have to buy and carry numerous brushes for each makeup type
- ♦ **Idea** - Foldable tool with different head attachments
- ♦ **Expectation** - Easy portability + User-friendly by selecting comfortable angle while using it + Customisation to suit preferences
- ♦ **Challenge** - Making suitable folding and attaching mechanism



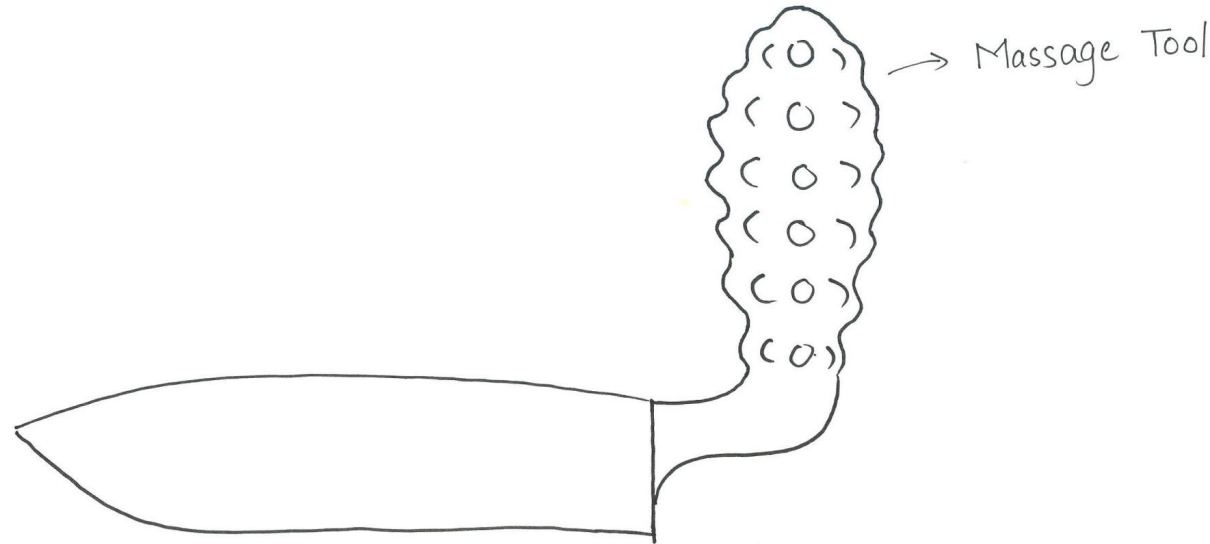
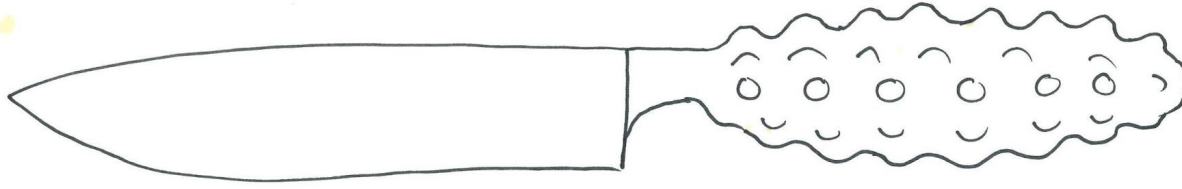
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# Arthritic Pain Relieving Knife

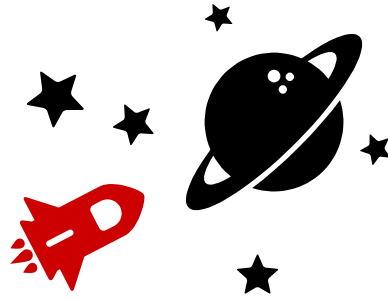
With massager for users with arthritis







- ♦ **Problem** - Many people with arthritis have to work for long periods of time, but handling tools can be difficult
- ♦ **Idea** - Combine existing knife with hand massager
- ♦ **Expectation** - Hand is massaged while using knife, relieving pain
- ♦ **Challenge** - Making handle easy to hold as well



# Next...

- ◆ Selecting target hand tool
- ◆ Analysing hand tool
- ◆ Exploring solutions



Thank You!

