

# BRAINSTORMING OF IDEAS (INCLUSIVITY)

DONE BY: JERICA (21) AND CHERRY (33)  
CLASS: 2/2

# **An outline of the ideas we brainstormed:**

1. Chair which prevents elderly and the disabled people from getting injured when showering.
1. Clothings (such as t-shirts and pants) with special features so that disabled people would have the independence to wear their clothing on their own without any help.
1. Better walking stick for elderly people with weak legs so that it is safer and more stable for them when they are out of the house
1. Stationary that help people that cannot write properly. [independence]
1. A rubber band that can help the disabled people tie their hair more easily

**Problem statement 1:** Disabled people face difficulties such as slipping off easily on a normal stool when showering and injure themselves. How might we make their bathing process safer for them?

Currently, these chairs are commonly found in the toilets for the disabled people. It is installed onto the walls and has very little safety features, which increases the chance of the disabled people from sliding off the chair when showering as friction is reduced.



Examples of the current solutions

# Solution:

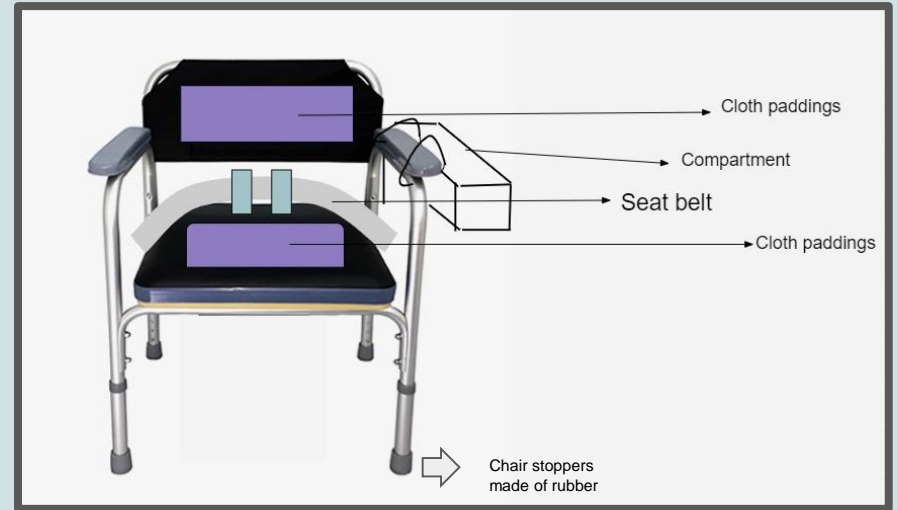
Adding safety belts, cloth paddings on the chair for the disabled people to use when bathing.

**Seat belts**-> ensure the user's safety, would not slide of the chair

**Compartment**-> put soap and other items used for shower for easy accessibility

**Cloth paddings**-> more gentle to skin, more comfort when using.

## Sketch of our prototype:



# pros and cons

## Advantage

the chair would be helpful to elderly and the disabled people as it ensures their safety and helps them shower more easily so th independence

## Disadvantage

the chair might be troublesome to wash as there are many holes and parts to it.  
This it might take alot of effort to wash the chair

**Problem statement:** Some disabled people have difficulties putting on/ removing their clothes, and would most likely need an extra hand. How might we make wearing and removing of clothes easier and more independent for the disabled people?

Velcro is used for easier putting on and removing of the clothes. However, the velcro can be hard to separate from each other at times and cloth can easily be trapped on the velcro.

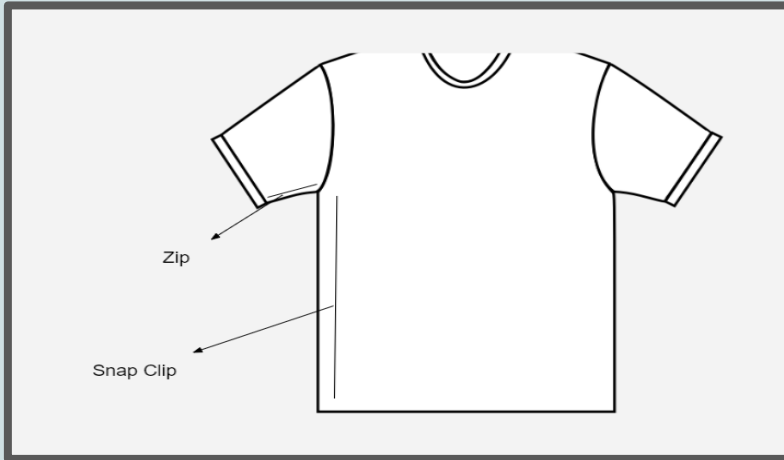


Examples of the current solutions

## Solution:

Have clothes with special features. For example, having tshirts that do not have buttons but instead other materials that are easier to put on like zips.

### Sketch of our prototype:



**Zip**-> To allow the user to unzip the sleeve more easily.

**Snap Clip**-> To allow the user to unbutton the shirt more easily and quickly.

# Pros and cons

Pros: the disabled people can wear their clothes more easily without facing difficulties.

Cons: the clothes can get stuck in between the zip or velcro, which makes it harder for them to untangle it.



**Problem statement:** Elderly people often use walking sticks when walking for support and stability. However, walking sticks are not very stable which sometimes can cause elderly to fall. How might we make the walking sticks more stable and convenient for the elderly people?



The walking stick is commonly seen among elderly people in singapore and the world.although it helps the elderly with their balance, it has only one leg. Thus, this makes it less stable for the elderly when using as the stick would wobble left to right and increases the chance of them falling down.

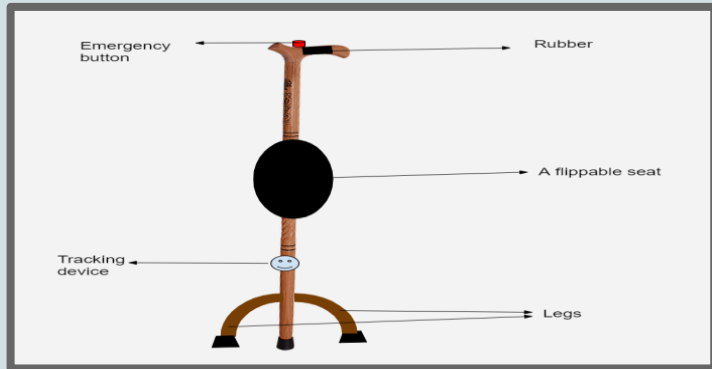


Examples of the current solutions

## Solution:

improve the stability and functions of walking sticks such that it is more stable and...

### Sketch of our prototype:



**Emergency button**-> When the user is in danger, he can just push the button and a loud alarm will sound to alert the people near the user.

**Tracking device**-> The user's children/ caretaker can track down the location of the user whenever they are lost.

**Extra legs**-> To make the walking stick more stable

**Rubber**-> To prevent the user's palm from hurting when applying pressure to the handle of the walking stick.

**A flippable seat**->Whenever the user is tired, he can just unflip the seat and sit down to take a rest.

# Pros and cons

Pros: the walking stick will be more stability and there's a tracker installed to track the disabled people

Cons: very bulky

**Problem statement:** Some children may have conditions where they cannot control their hands properly. This then lead to a problem as they won't be able to write well with their hands shaking constantly. How might we help these children write more steadily?



This is a pen, which aids children with disabilities such as shaky hands. With shaky hands, they do not have the ability to write stability. Thus, with this pen, it minimises the chances where the shaky hands will affect their writing. However, this pens can be uncomfortable after using for a long period of time as it stills requires lots of strength to control and grip it firmly.

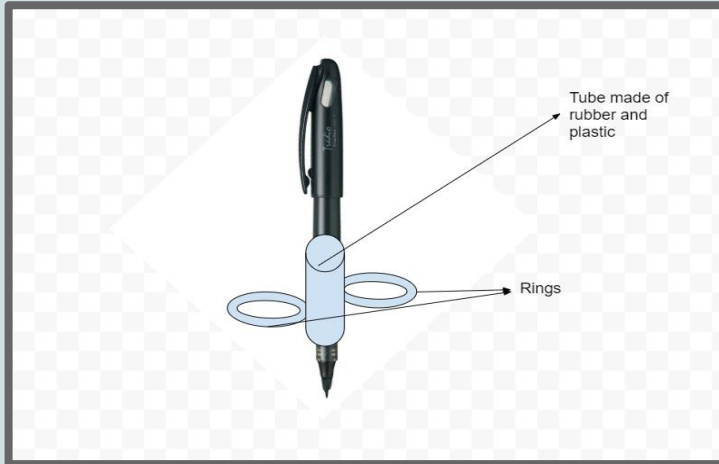


Examples of the current solutions

## Solution:

Having special functions/features on the stationeries such as pens, that is suitable for kids with unsteady hands to write better.

## Sketch of our prototype:



**Rings**-> hook onto user's finger so that he pen will not drop so easily

**Tube made of rubber and plastic**-> rubber: soft so that it is comfortable but has friction which provides better grip. Plastic: more long lasting and less fragile.

# Pros and cons

## Advantage

The pen is beneficial to users as it makes it more stable for them to use the pen. Also, the holder which is made of rubber ensures that the quality of grip is good

## Disadvantage

It might be a little uncomfortable during Long time use

**Problem statement:** Those disabled people with long hair but has no strength to tie their own hair independently can be irritating as there may be times where their hair will be let down. During humid weathers, they will feel very warm and sticky. How might we help these disabled people tie their hair more easily such that they will not require a lot of strength?

This is a normal rubber band where is commonly found among those who wants to tie their hair. However, some of these rubber bands are difficult to stretch and those disabled people may face difficulties.

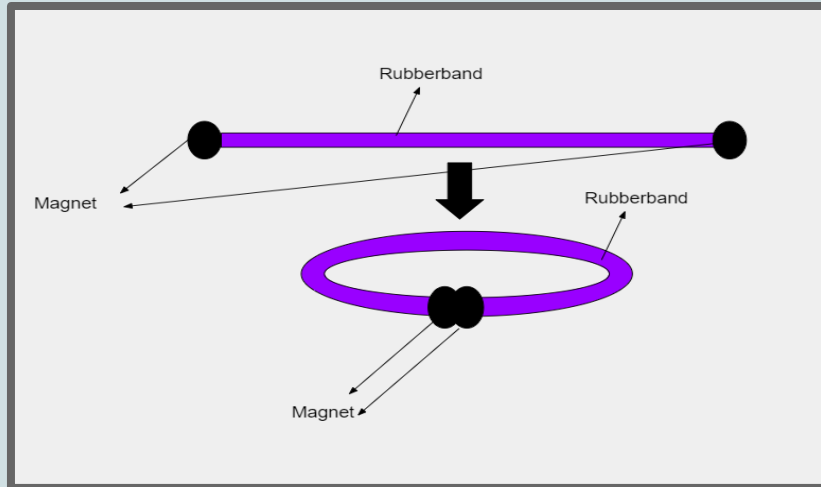


More examples of existing hair ties in the world

## Solution:

Having rubber bands that is more elastic so that lesser strength will be required to pull the rubber band when they are tying their hair.

### Sketch of our prototype:



**Magnet**-> to clip together when hair is tied together, it is easier than using a normal rubber band too since it requires less arm movement.  
**Rubberband**-> ensure that hair is tied tightly and do not drop off so easily



# Pros and cons

Pros: the disabled people can tie their hair more easily

Cons: the hair of the disabled people might get stuck in between the two “connectors” and it will cause pain.

# Evaluation Matrix

# What do the users want/need?

1. Convenient
2. Affordable
3. Easy to use
4. Portable
5. Comfortable

Criteria	Chair which prevents elderly and the disabled people from getting injured when showering.	Clothings (such as t-shirts and pants) with special features so that disabled people would have the independence to wear their clothing on their own without any help.	Better walking stick for elderly people with weak legs so that it is safer and more stable for them when they are out of the house	Stationary that help people that cannot write properly. [independence]	A rubber band that can help the disabled people tie their hair more easily
Convenient	8	8	8	6	7
Affordable	6	6	5	7	7
Easy to use	9	4	9	4	8
Portable	6	8	7	3	6
Comfortable	6	5	7	2	7
Total points	35	31	37	22	35
Relative total	1.25	1.11(3s.f)	1.32(3s.f)	0.79(3s.f)	1.25
Rank	2	3	1	4	2

Thank you!

-End of presentation-