

# The OU Design Show



# Design at the Open University

The Open University offers design modules to more than 2000 students from diverse backgrounds. Every year we celebrate the achievement of students across these modules with an open design exhibition. Students are invited to enter work that they have enjoyed doing and are proud of from their year's studies. The entries reflect the diversity of our students. The projects demonstrate how design can tackle problems across personal, societal, and global scales.

## U101 Design Thinking

Through a mix of academic and practical work, you'll develop an understanding of design, acquire new design skills, and build a portfolio of design projects as a strong foundation for future study or work experience.

## T217 Design Essentials

Designers have used their skills to translate ideas and needs into all the objects that you see around you. In this module you will learn about the essential skills and practices that designers use to create detailed design solutions.

## T317 Innovation

Innovations emerge from complex, dynamic, iterative processes. But how do designers, engineers, entrepreneurs, managers and users create opportunities and generate ideas for innovation? How are ideas developed into successful products, services and systems? What are the impacts of design and innovation?

# U101 Design Thinking

# TUMBL-RIDER

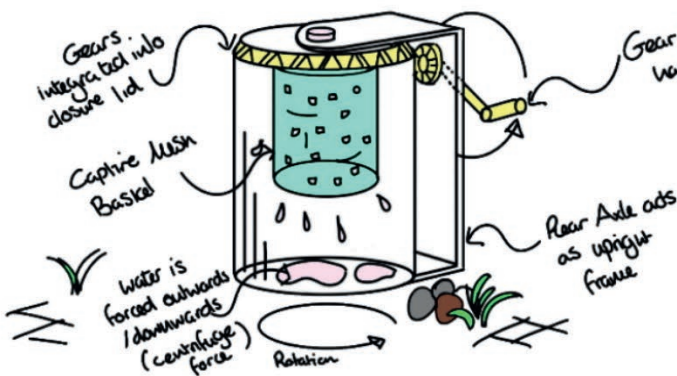
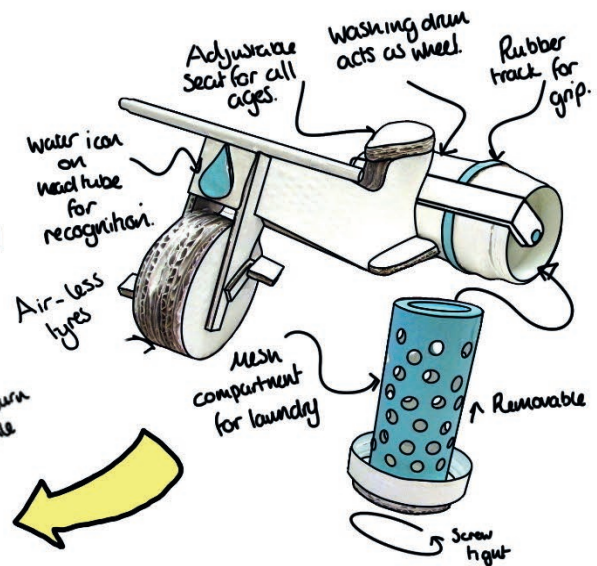
LAUNDRY MEANS PLAY



**CLEAN**

A children's tricycle with integrated washing drum powered by kinetic energy from child's play!

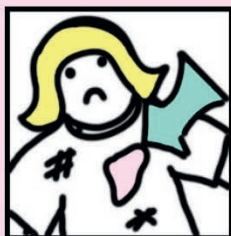
Empowering parents and children with the ability to wash their personal belongings with minimal water and zero detergent, encouraging children to play in circumstances they have not before!



To dry simply detach rear washing drum and axle assembly, set upright and use supplied gear turn handle and watch as the clothes are spun dry using centrifuge force!

**DRY!**

## STORYBOARD



**CLEAN!**

**DIRTY...**





- Road traffic accident, cattle on road  
- lose 2 steak cards and move back 1 space

- Pandemic causes panic buying, processing speeds up  
- move forward 3 spaces

True or false. Cattle kill more people than sharks?  
True.

- Leak in water pipe, tanks are dry  
- lose one cow card OR miss a turn

Cattle Rustler Card

# “High Steaks”

An educational game  
for 4-8 people ages 8+  
By: CJ Mickey





**Hospitalisation -The Board Game** is an educational, set collection game. Its primary purpose to familiarise players with the structure of hospital services and to provide information on access to these services. The game guides the player from the first stage of hospital admission to discharge, while obstacles stand in their way and reward fields help them through a more difficult stage. The target audience of my board game is generally over the age of ten, as well as foreigners who want to settle in the UK. Based on my observations, in a playful, fun way where interactions are given a lot of emphasis, it is easier to learn certain knowledge. The board game provides recreation for 3-5 players.



The game starts at the Start fields, where we can move with rolling a 1 to 5. We cannot enter the field with rolling a six. We can advance on the board by rolling the dice. The game is divided into levels and units, starting with basic NHS services on the outer arch. From the second level, it faithfully follows the units of the hospital service, all the way to the innermost circle, which is the Discharge. The player who gets to the Discharge level sooner from the Start field after collecting the required number of Paracetamols, wins.

We can draw lucky cards (Nurse cards) on the Nurse fields. The cards inform and instruct the player about the treatments and examinations characteristic of the hospital unit of the current colour, so that the players can learn the structure of the hospital and the information of its departments by playing. For example, the text next to the colour code of the card drawn at the Urgent Unit (Level 4) says: 'Multi-organ failure, Miss a turn'.



At each level, players must collect a Paracetamol of each colour and place it on the Paracetamol collecting card. Once the player has collected the required number of Paracetamols, he/she can level up from the Ambulance field. We can only level up by entering an ambulance. From there, we must then go to the nearest ambulance on the next level and continue the game, collecting Paracetamols.



## The Chef's Tarot T Shirt

Alexandra Slingsby



- I designed this T shirt for my own use – I was a chef for many years
- The 3 of swords is represented by the Sabatier knife which I have owned for 30 years
- This tarot card represents emotional upheaval, which I was experiencing at the time of making this piece
- There is a very happy ending to this story, so now I need a new T shirt!

# babble

nappies with prompts encouraging parents to have daily back and forth interactions with their babies

## The Problem



Almost **1 in 4 children** in the UK do NOT meet the expected level of **language development by age 5**

In U101, I explored the global design challenge: How might we maximize every child's potential during their first three years of life?

During my research I learned that:

- Back and forth interactions are critical to brain growth, growing fastest in the first 3 years, and language development.
- 62% of parents are unaware that these interactions are good for social, emotional and cognitive development

I framed the problem by reducing the context to form this problem statement:

Design a solution which highlights to first time parents the importance of back and forth interactions with their baby and encourages daily interactions.

## My Design Proposal

My rationale was to help parents build a habit of interacting which could continue through their child's life and would integrate easily into their lives. Nappy changes happen multiple times per day making them the perfect time for bonding interactions.

A nappy box containing an information leaflet and nappies



Leaflet details development info, importance of interactions and play suggestions

Prompts printed on the front encourage multiple daily interactions

Prompts inc conversation and play ideas e.g 'tickle me' and 'let's copy each other's sounds'





# U101 TMA 03 EMERGENCY BOARD GAME

By Rebecca Mayfield

## TASK

Design and produce a prototype of a board game based on a service.

## AIM

Move your ambulance from your coloured start circle and navigate around the board responding to emergency calls and disasters. Tick them off on your player card as you go. Game play ends when one player completes the player card challenges. If your patient lives take them to the hospital if they die you must take them to the morgue. Save more patients than you lose!

## PLAY

The youngest player goes first and play moves to the left.

On your turn

1. Spin and move that number of spaces along your chosen path.
2. Where did you land? Check the Board Spaces section in the instructions when you land on each space.
3. If you successfully respond to an emergency or a disaster mark this off on your player card before returning the card to the bottom of the deck.
4. Your turns ends, and the player to your left spins!

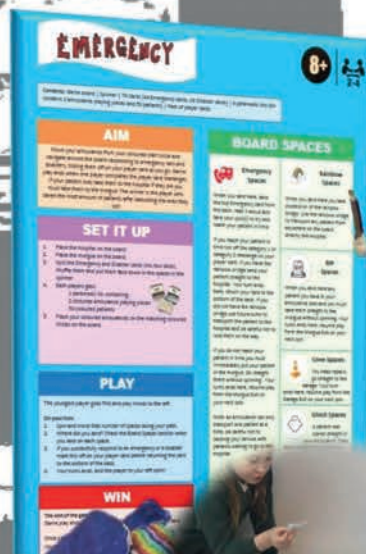
## WIN

Game play ends when one player completes their player card.

Once play has ended empty the hospital. Every player must count their coloured patients to get a total saved.

Now empty the morgue. Every player must count their coloured patients to get a total killed.

Calculate the number of patients saved minus the number of patients lost. The person who saved the most patients WINS! In the event of a tie take a spin, red to win.



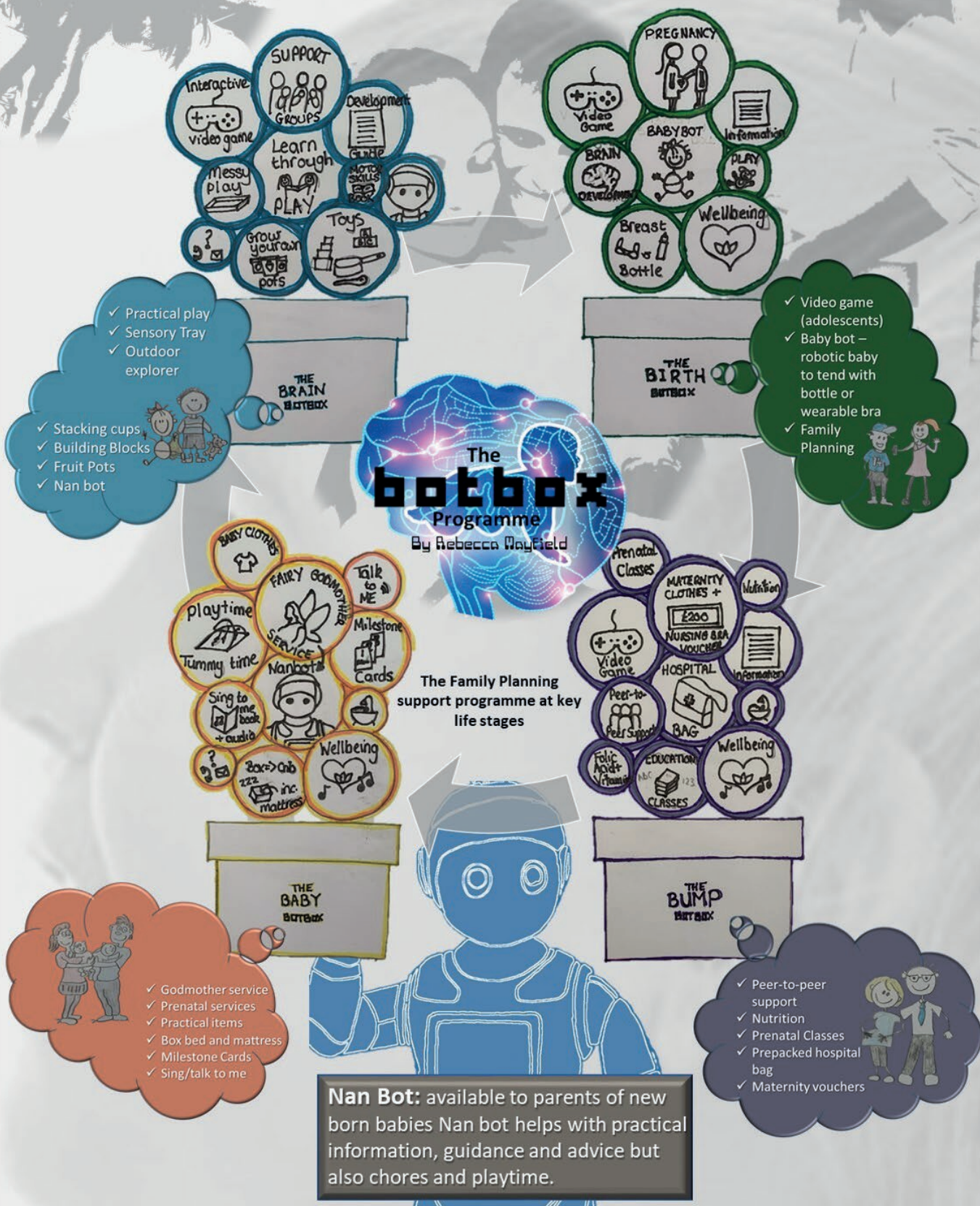
Contents: Game board | Spinner | 70 Cards (44 Emergency cards, 16 Disaster cards) | 4 paramedic tins (tin contains 2 ambulance playing pieces and 50 patients) | Pack of player cards

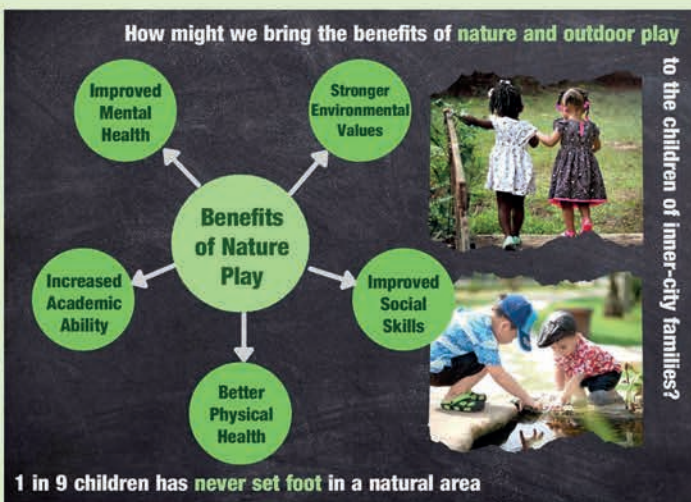


# Life or DEATH



**Fairy God Mother Service:** trained to give support and advice, a member of the community who will help in your home daily and supports in the programming of nanbot. They will help with chores, laundry, whatever you need.





# Blurring the Grey-Green Line

By: CJ Mickey



# The Problem



2.6 Million people in the UK feel lonely. (ONS)

# The Solution

In response to the problem statement "How might businesses address the lack of social interactions in the community in which they operate to help reduce feelings of loneliness amongst its members?". I'd like to design a platform where businesses can advertise seating arrangements and events for solo customers in order to make it easier for lonely people to enjoy the activities that socially require you to be accompanied

such as dining in a fine restaurant or going dancing to a club.

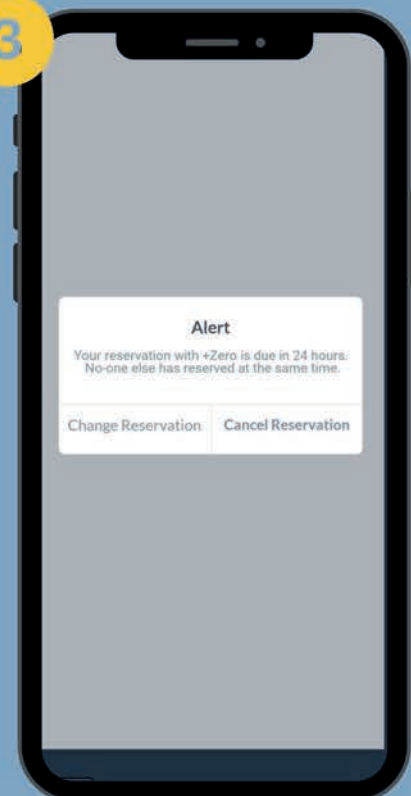
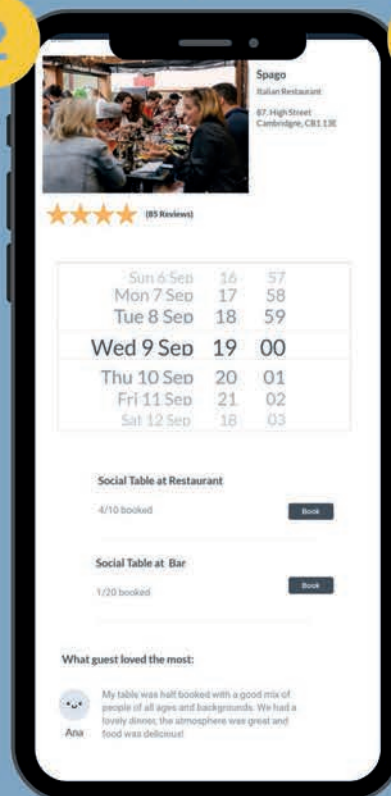
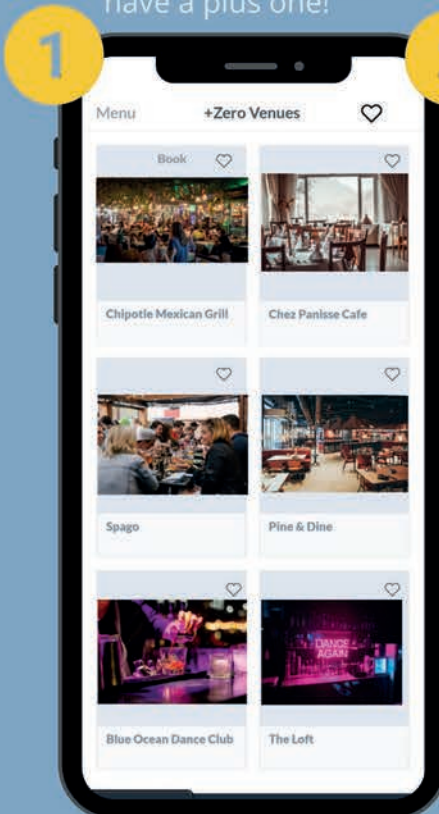
This concept would not only help normalise solo social activities but would also allow businesses to profit from a growing market which also includes solo travellers who normally have to dine alone and would most likely appreciate the opportunity to interact with locals.

# The Concept: +Zero App

A platform for businesses to advertise solo seating arrangements or special events for people who don't have a plus one!

By selecting a date and time, customers see how many seats are available and read previous customer's reviews

Customer receive alerts 24hrs before if no-one else has booked so they can decide if they want to cancel or change their reservation.



# THE ALL INCLUSIVE *Supermarket Trolley*

## THE PROBLEM

The design sets out to answer identified common struggles, felt by users of the current trolley model - particularly the elderly, those with invisible disabilities and children.

Common problems include back pain, trouble lifting, children left uninvolved and subsequently bored, exasperated joint pain in those with limited mobility and/or invisible disabilities.



## THE PROPOSAL

Assistance button - activated for users who suffer from limiting disabilities at the start of their shop. Trolley's are trackable by supermarket staff, so they can find and aid customers with ease.

Button activated, adjustable base with 3 levels to avoid excessive lifting and bending.



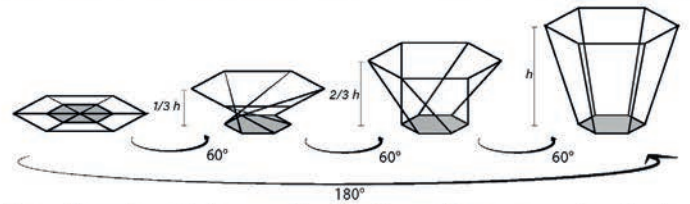
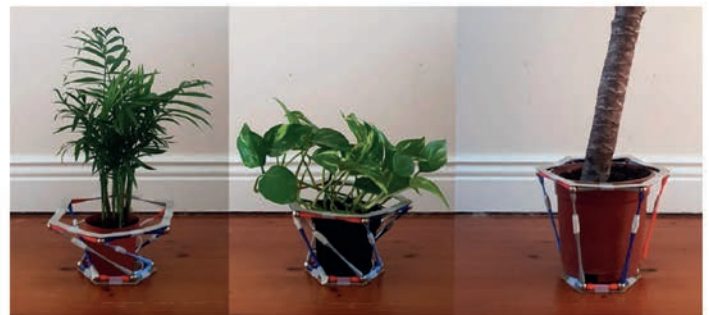
Handle bar includes gel wrist/arm supports and a memory foam bar for optimal finger/hand comfort and grip.

Vertically and horizontally extendable push bar for customisable comfort.

Interactive, animated device, activated by its barcode scanner. Provides children with humorous and educational facts about the food they've scanned.

Electric motor for power assisted steering.

Emma McCartney (L7491178)



The pot is made up of a hexagonal base and rim, as after some experimenting I calculated it the ideal shape for maintaining structure while allowing rotation. Using the measurements from my prototype, I calculated the range of usable volume to be variable by a factor of 10 (from 0.4L to 4L at this scale). When in use, the weight of the plant is applying pressure to the pot's structure allowing it to maintain its shape at any rotation. The outer wall of the pot is made from a loose weave of recycled fabric attached to the base and rim to ensure full coverage while still allowing for rotation.

Target User Groups:

- The casual plant owner: often the time and effort required to buy new pots/compost, and successfully transfer plant into new pot is too much. Throwaway culture means the whole plant is tossed and replaced.
- Elderly/those with physical limitations: the struggle of repotting and the weight of large pots makes it an impossible task. It is easier to throw away and replace.
- Those with limited living/storage space: This pot eliminates the need for multiple sizes and can rotate fully to almost flat making for easy storage.

U101 Design Thinking in the 21st Century

## TMA02 Expanding Plant Pot

**How might we limit the waste produced by requiring various sizes of pot over a plant's life?**

While exploring common household problems, I noted the number of unused pots which had accumulated in my garage. I explored how we could reduce the waste produced, and settled on an expanding pot - a pot which grows with your plant.

# Power⚡tation®

The powerstation helps alleviate desktop clutter, whilst reducing the number of power supplies required.

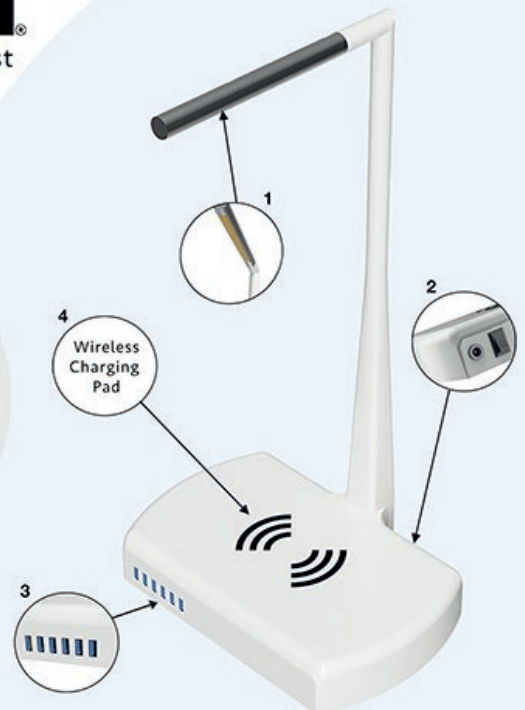
## Features

1. 10 Watt COB LED lamp which rotates 360° both horizontally and vertically.
2. Power socket and switch for lamp on the rear of the housing leaving the front clean.
3. Six USB A ports for charging or powering additional devices.
4. Large wireless charging pad capable of accommodating the largest mobile phones.

Originally conceived to solve the problem of having excessive electronic clutter on a bedside cabinet. The powerstation reduces the number of electronic items, whilst also reducing the number of power supplies required.

Combining three items, the powerstation puts a wireless charging pad, USB charging/power supply ports and a fully repositionable led lamp at your fingertips.

Using a minimalist approach, the powerstation, with its clean lines and single switch, also looks good on any desk or bedside cabinet.



Gareth Williams : U101

# TWIST

BY HARRIET SUTTON



I used illustration, photography, and graphic manipulation to create an optical illusion of two hands drawing one another in a continuous motion. This was inspired by M. C. Escher, and fashion designers such as Dolce and Gabbana. The graphic took some inspiration from playing card designs.

The word twist is a reference to the card-game of the same name and to describe the motion of the hands in my illustration. I used colour pops to add interest to my final t-shirt design.



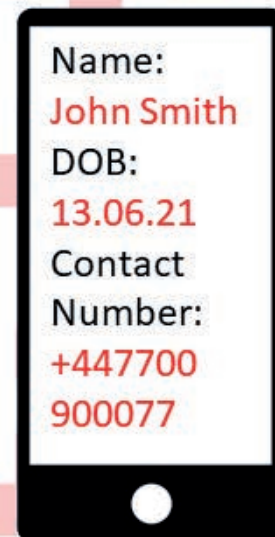




# THIS IS ME T-SHIRT CONCEPT



My T-shirt idea came about when I participated in a 3 day online autism awareness course and I was inspired to brainstorm ideas on how my design could be useful as a product/service, and I liked the idea of using the T-Shirt as a sort of information holding system for individuals who get lost and cannot communicate their needs, such as those on the autistic spectrum. The QR design can then be scanned using any mobile device and their name, DOB and emergency contact number will be displayed to provide useful information about the individual.



# THIS IS ME

# Parcel Drop

*A visual board game which echoes reality inspired by a parcel delivery service - the aim is to deliver a complete set of parcels*

Inclusive, image-based game transcends language and literacy barriers

Players begin the game with a hollow vehicle and a set of 6 parcels

Progress is made by spinning the dial on the feature roundabout

Star icons for delivery destination and detour cards



The winner is the first player to have no parcels left to deliver!



An additional 8-section spinner with corresponding gold star icon wild cards offers a variation to the game play that provides more challenge



**Jennifer Balloch**

Malnutrition takes many forms



Too little



Too much

Not enough

In response to one of the contributing factors of the global malnutrition problem...

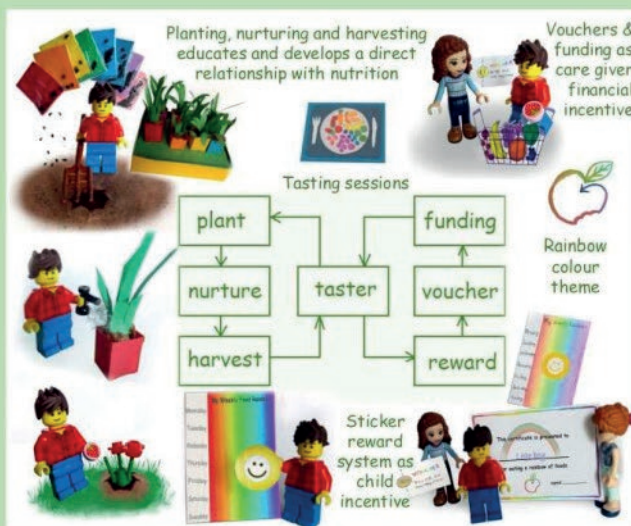
# Rainbow Rewards!

A system to make healthy eating more appealing -



Jennifer Balloch

## Don't just eat - Nourish



grow · nurture · harvest · taste · reward

## The Helping Hand

'**The Helping Hand**' is a product that helps walking stick users, by securely holding their stick while they carry out tasks. In doing so, the user can perform **simple activities two-handed** again, like packing shopping or food preparation, safe in the knowledge that their cane is close by.

The design requires little or no instruction and can accommodate different sizes of walking stick with no adaption, due to its tapered V-shaped docking section. It can be folded up or down and be made from soft materials, to enable inclusion into the surroundings.

This **quiet design** makes performing tasks smoother and safer, and has the potential to slip into everyday society unnoticed, as an object that has always been there, assisting people.



# HOW MIGHT WE ENCOURAGE PLAY INTO THE LIVES OF UNDER THREES IRRESPECTIVE OF THEIR CIRCUMSTANCES?

**15 minutes play can help**

**EVERY CHILD HAS THE RIGHT TO PLAY**

**THE SQUIDGEES**  
One squeeze and they speak their colour

**YELLOW**

**GREEN**

**BLUE**

ROUND BODY WITH HEAD  
HAPPY SMILEY FACE  
BUILT IN SPEAKER  
ARMS AND LEGS  
ARRAY OF COLOURS  
BATTERY OR USB PORT  
SOFT TO TOUCH  
12 CM HEIGHT  
BUILT IN MICROCHIP

Kate White 2021



# THE THUMBS UP TEE

A FEEL GOOD, FUN LOVING GARMENT TO BRIGHTEN ANYONE'S DAY



## Be optimistic...

Yellow is associated with fun, energy and optimism. Your spiritual guides will recognise yellow as a fire element, full of life and impact! The purple adds a sense of luxury, power and ambition. Together these colours make the wearer feel magical!

## Feel good clothing

According to Jules Standish, who wrote 'How Not To Wear Black,' what you wear impacts your well-being and self-esteem...we could all do with a little boost after a year of Covid-19.

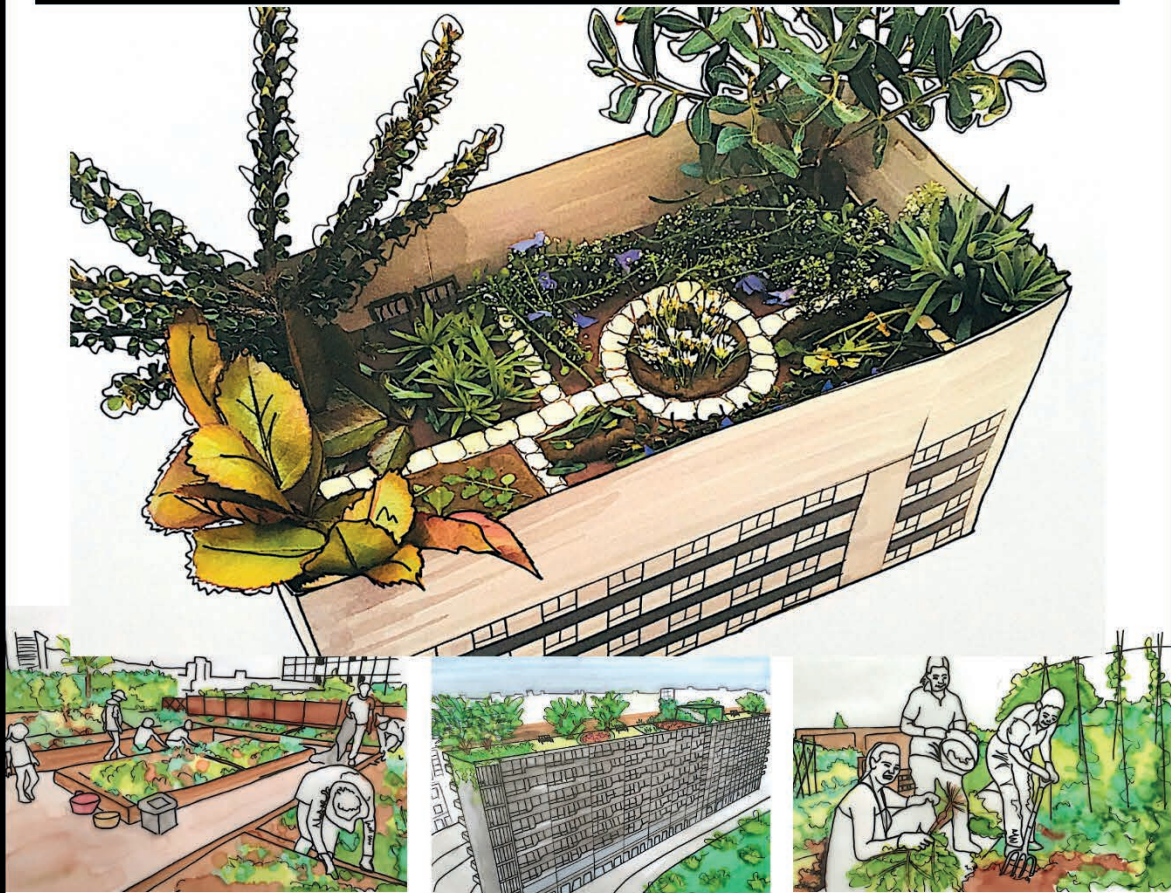


## HAVE FUN



Fascinate font enhances the 'friendly yet sophisticated' vibe and the placement of the image extends the reach of the thumb lending drama to an otherwise plain white tee 🧡💜

## RESIDENT'S ROOFTOP GARDENS



"How might we better support inner city, low income parents and children?"  
 Living in inner cities with a low income comes with its many difficulties. The plethora of benefits that come from being in outdoor green spaces are not so easily afforded to those living in concrete jungles. Let's utilise our city space better to provide low income residents living in high rise inner city buildings with rooftop gardens. A space for families and individuals to relax, helping to improve mental health. Residents can grow fruit and vegetables, contributing to lowering the cost of eating healthily. Mini beast hotels for children to explore and learn about nature. Wide pathways and scattered benches provide access for disabled and elderly residents. Rooftop gardens will bring the community together and give residents a sense of pride and achievement. "This is the new city" - William McDonough.

**"Design creates culture. Culture shapes values. Values determine the future." - Robert L. Peters**

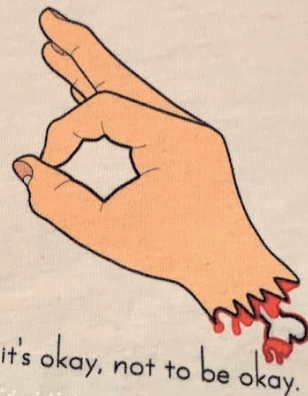
Layla Orlu (U101)



# It's okay, not to be okay T-shirt.

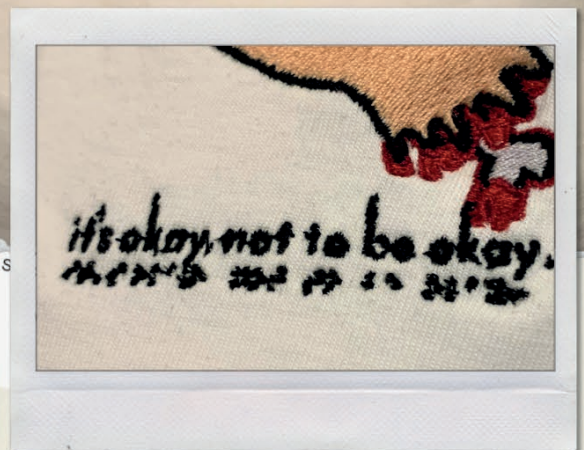
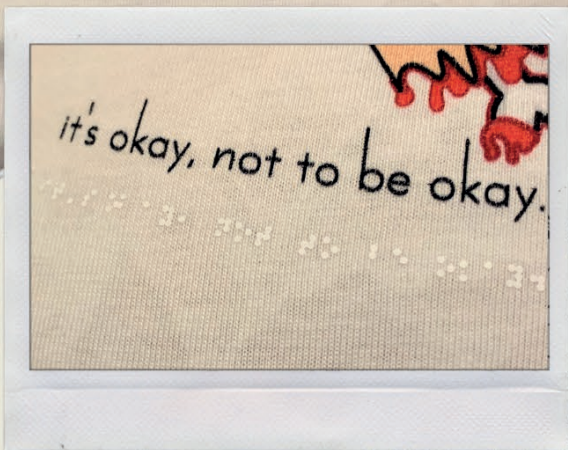
by Leroy Lent (U101)

## Printed Design



## Embroidered Design

### Design



The stigmatisation of mental health is something I sadly have experienced first hand. As a result, I subscribe to the mantra "it's okay, not to be okay." After conducting some user trips I decided to add braille to the design so those with visual impairments could also enjoy my t-shirt. For my final submission, I made two t-shirts; one printed and one embroidered, so that the braille really stood out.

Within my design the hand is severed, thus rendering the 'okay' gesture unironically not okay representing the overall message. I added the blood and bone to my design and used the principles of emphasis and dominance to attract attention to the composition and the important message it represents...

...it's okay, not to be okay!



# Story of a Pandemic...



#covid19  
#restrictions #hope

TMA03 U101

**This game consists of newspaper delivery players cycling around the board to deliver all their customer's newspapers. You win by delivering them all and then returning to the newsagents. It is a game for two to eight players and aimed at ages eight plus.**

**The first person to deliver all their papers and return to the newsagents is the winner!**



To start, all customer pieces are shared out randomly and a Lost & Found card is placed face up on the central circle for universal use. Player pieces are positioned on the central Newsagents circle. Players work out the best route to deliver their papers. The youngest player rolls first and play continues in a clockwise direction. An action Newspaper Card is received when you land on a Zebra crossing and an accessory Lost & Found Card upon delivering a newspaper. You can swap a Lost & Found Card with the communal card. An impassable barrier is created when a paper is delivered symbolised by placing a customer upon their house. Each quadrant has a unique facility: Public Toilet, Water Fountain, Bike Shop and Home. Players are redirected to these destinations through the Newspaper Cards. If you land on a Facility without being summoned, you must pick up a Newspaper Card. You do not need to land directly on a customer's house to deliver a paper, the dice roll must be equal or larger.

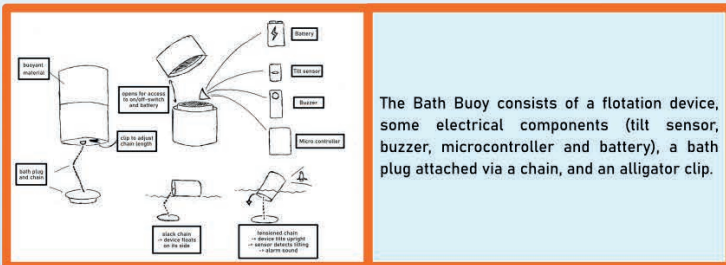
# The Newspaper Round Game

Mailin Brooke

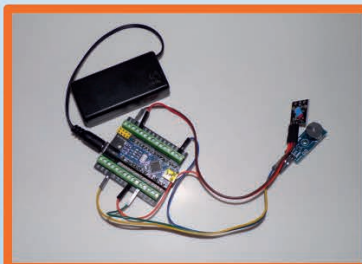
# about a buoy

When running a bath, there is no convenient way to tell when the bath water has reached the desired level. Workarounds are to stay around and monitor the water level, to check on it regularly or to simply come back later and trust that the bathtub's overflow prevents a flooding. Those methods, however, waste time, physical effort and/or water and are not ideal for people that are busy or have reduced mobility.

The Bath Buoy notifies the user when a set water level has been reached, eliminating the need to check on the running water and thus freeing up time and reducing water wastage, as well as physical strain on the user.



The Bath Buoy consists of a flotation device, some electrical components (tilt sensor, buzzer, microcontroller and battery), a bath plug attached via a chain, and an alligator clip.



The electrical components are installed in a way that their weight causes the buoy to rest in its "silent position".



The length of the chain (and thus the desired water level) can be adjusted with help of the clip.

Chain and clip are attached orthogonally to the buoy's "silent position".



The buoy floats on the water as it rises. Once the water has reached the level according to the set chain length, the chain tensions and the buoy is tilted, the sensor detects this and sets off a notification sound. The alarm is then silenced by simply unclipping the chain, the buoy tilts back in its "silent position" and the notification sound stops.



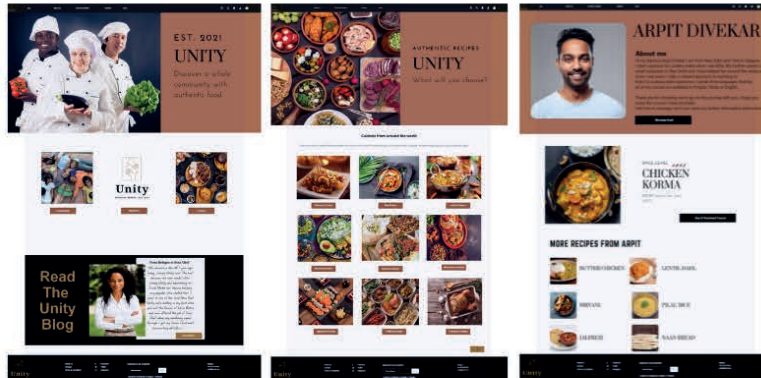
# Unity *A brand new website where culture and talent meet*

**Problem:**

Those that have been displaced within the UK have little to no support, live on £37 a week and feel lost in a country they do not know.

**Problem Statement:**

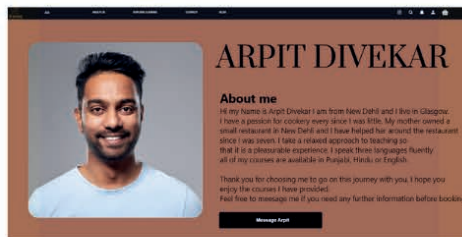
"How might we help displaced people within the UK live a more meaningful life with a sense of purpose and a feeling of belonging?"



Unity is a website I created to solve the problem statement. Unity is a website for those that have been displaced that live in the UK and can speak the language. They can log on to the website create a profile and film a video of themselves giving a cooking demonstration. This will be available for those wishing to learn authentic cooking recipes from the country of origin.

The user can visit a page where they can choose the cuisine they wish to cook from Thai, Indian, Chinese, Moroccan and European to name a few. From there they can choose a dish. Once the user has chosen a dish say "Indian - Chicken Korma" They would be face with a number of instructors that take this course. Think of it similar to the Udeemy of Cookery.

Lets say the user has chosen Arpit as their instructor. They will land on his profile where he can write about himself in the header. In this case Arpit chose to write about his love of food and how he started cooking from a young age with his mother. It shos the user the dish they chose to make and a little about it, and the user can also see the other dishes Arpit makes.



The Bio is a great place for those that are using the platform let others get to know them, not just the users of the site who will purchase but other people that have been displaced to.

## The Community



The community page is an integral part of the project. This is where the British public and those that have been displaced come together. There is a live chat where anyone can talk from those that have been displaced looking to reach out, to the general public who want to get involved. There is also lots to do out within the community that makes Unity the perfect project.

### Street Food

This is where monthly markets are held with stalls. Here those that have been displaced can showcase their food, meet the public and others who are also displaced and are using the platform. Here is where you could meet your next employer as showcased on the homepage blog. A woman who was using the platform got her right to remain and met her new employer, a restaurant owner at the street fair.



### Coffee Morning

Use the filter at the side to look up your postcode and see when your next coffee morning is. Meet the locals who want to get to know you. You could also meet others that have been displaced who want to make connections in their local area.

### Skills Workshop

Use the filter at the side to see when your next skill shop is. From cookery classes to help you deliver a more professional video, digital skills to market your videos and much more. The skill shops are there to enhance those that have been displaced skill set and increase their earning ability on the platform.

## The Outcome

Unity provides a platform to build a community and tackles several problems at once. The platform enables others that have been displaced within an area to make friends meet up and build foundations. It allows them to make an additional income until they hear from the home office of their residency status. This could take many months. It builds skills as they attend workshops and allows them to learn about a culture and gives the British public a chance to learn from other cultures. It could also lead to long term employment as their next employer could be as one of the street markets.

# Lets Make Recycling Fun!

Getting It Sorted Recycling Game By Nathan Lansdell



The game includes a complete print at home package to get your children engaged in learning about recycling correctly. Includes a printout dice, 4 player answer boards, and player counters.

Designed to be fun and colourful, and aimed to engage with children of all skills, as well as those with disabilities.

Up to 4 players, aged 7 and above, who are living or going to school in the Fenland District in Cambridgeshire but easily adaptable to fit all local councils and there recycling programmes.

3 game mechanics, sorting waste to help children visualise what waste goes where, a "whoopsie" and "awesome" moment to show the positive and negative actions of recycling correctly, and a word association to help learn key words about recycling.



Detailed instructions and game build guides to help you construct your game.



Cartoon character art to build relationships between the players and the waste products.

## The Getting It Sorted Recycling Game

Where players are pitted against each other in a bid to earn the most counters by recycling correctly, whilst trying not to lose counters by falling foul of bad recycling!

The winner is the player with greatest number of counters and most items recycled correctly.

THE ECO-FRIENDLY

# LITTLE COOK

SUBSCRIPTION BOX

A health-focused service for children and caregivers. - Nichole Griffin

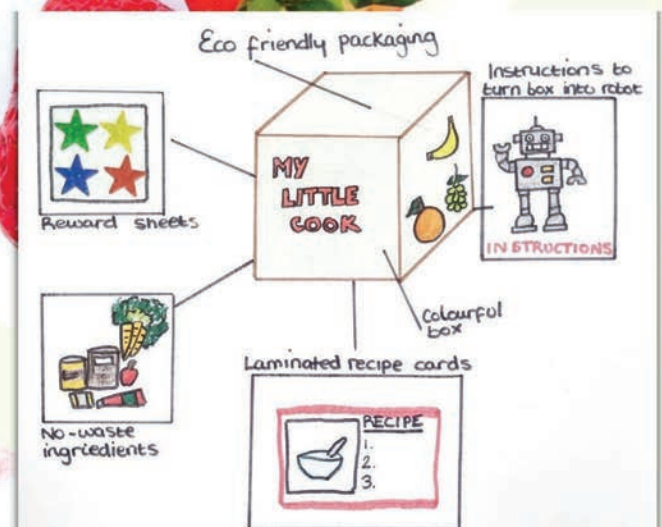


"A TWO-YEAR-OLD WHO IS OBESE HAS A 75% CHANCE OF BEING OBESE AT 35." THE LITTLE COOK SUBSCRIPTION BOX IS DESIGNED TO ENCOURAGE CHILDREN AND CAREGIVERS TO CREATE HEALTHY MEALS TOGETHER. RESEARCH SHOWS CHILDREN ARE MORE WILLING TO TRY NEW, HEALTHY FOODS WHEN THEY'RE EXPOSED TO THE COOKING PROCESS. WE ALSO KNOW HABITS FORMED IN CHILDHOOD ARE MORE LIKELY TO FOLLOW THROUGH TO ADULTHOOD. WE'RE HERE TO TAKE THE PRESSURE OFF PARENTS WITH AN INNOVATIVE, ECO-FRIENDLY, BUDGET-CONSCIOUS RESPONSE.

THE BOX IS ECO-FRIENDLY BY CONTAINING THE EXACT INGREDIENTS NEEDED FOR THE RECIPE DELIVERED TO YOUR DOOR. THIS ALSO KEEPS OUR SERVICE BUDGET-FRIENDLY, COSTING NO MORE THAN A NORMAL SHOP. RECIPES ARE PREDOMINATELY VEGAN FRIENDLY AND SUITABLE FOR MOST ALLERGY SUFFERERS. BY CREATING VEGAN-FRIENDLY RECIPES WE'RE LOOKING AFTER OUR PLANET IN THE SHORT TERM AND FOR FUTURE GENERATIONS. THE BOX COMES WITH A CHALLENGE SHEET FOR THE CHILD TO TICK OFF GOALS WITH STICKERS PROMOTING POSITIVE REINFORCEMENT AND STEP-BY-STEP INSTRUCTIONS TO HELP READING AND COGNITIVE SKILLS.

WHEN USED REGULARLY THE BOX WILL ENCOURAGE CHILDREN TO FOLLOW A HEALTHY LIFESTYLE AND PREVENT FUTURE OBESITY PROBLEMS THROUGH EXPOSURE TO NEW FOODS AND A NEWFOUND RESPONSIBILITY BY LEARNING TO COOK. THE BOX WILL ALSO HELP ENCOURAGE RELATIONSHIPS BETWEEN PARTICIPATING FAMILY MEMBERS THROUGH MEMORABLE EXPERIENCES AND TEAM BUILDING.

## A 2-YEAR-OLD WHO IS OBESE HAS A 75% CHANCE OF BEING OBESE AT 35.



# TMA 01 —

## Loss and Love



Inspired by the moment I helped my son to hold onto his toothbrush to allow him to continue to feel the vibration.



I saw the word "Loss" in the thumb, toothbrush and fingers of my recreation photo, which I abstracted into a B&W design, placed over the heart.



I adapted this into a larger, bold colourful design using the word "Love" - the very emotion that is the driving force behind grief and the loss of a loved one.

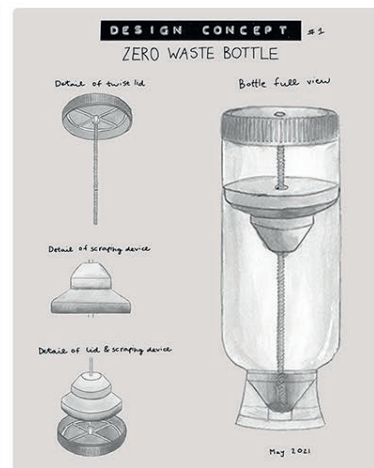
Design by: Natasha Anderson-Hunt





Adapt the design of a squeezey condiment sauce bottle to avoid wasting its contents

# THE ZERO WASTE BOTTLE



**U101**

Name: Viktoria Pikora  
Module: U101 (TMA 02)  
Title: Zero Waste bottle

**Description:** A sustainable sauce bottle that contributes to zero waste principles by using the bottle without any residue and allows re-filling of sauce in the bottle.



# T217 Design Essentials

Sharna-Louise Wildgoose  
T217

# THE Plantern

Encouraging and enabling people with limited space and lack of knowledge to grow some of their own fruit and vegetables!

'The Plantern' (Plant-Lantern) allows anyone to easily grow some fruit and/or vegetables stylishly and easily! It comes in a range of sizes to grow different plants and suit different spaces.

The Plantern can be placed or hung indoors and outdoors, making it a less messy gardening experience, while still benefiting from growing your own!

- Easy setup
- Low maintenance
- Indoor and outdoor use
- Portable and hangable
- Less mess than traditional gardening
- Eco friendly
- Organic
- Simple modern aesthetics
- Just add water

**Stainless steel**

- ✓ Food safe
- ✓ Non-corrosive
- ✓ Easily cleaned
- ✓ Recyclable



And many more possibilities!!

- ✓ Non rot!
- ✓ Reusable!
- ✓ Chemical free!
- ✓ Made from usually discarded coconut husk!
- ✓ Expands when water is added!

**1**  
Drop pre-seeded **coco coir** pellet into the cylindrical reserve.

**2**  
Place the reserve inside.

**3**  
The handle moves forward and back to suit the situation and removal of the reserve. Lightly water - daily

**4**  
Harvest the fruit or vegetables and enjoy!



# FROM THE PAST

The Abacus was invented many years B.C. The purpose of it was to calculate an answer to a maths problem. The Abacus became very popular and was widely recognised across the whole world.

What's happened to the Abacus? With time, as technology developed, the abacus didn't lose it's own properties but became replaced with calculators, computers, calculation apps etc...

Many kids today have lots of educational toys which can be overwhelming to use at times.

The toys market is growing, and educational toys are becoming more expensive.

Some educational toys mainly focus on one specific function.

# TO THE FUTURE

## THE NEW MULTIFUNCTION ABACUS



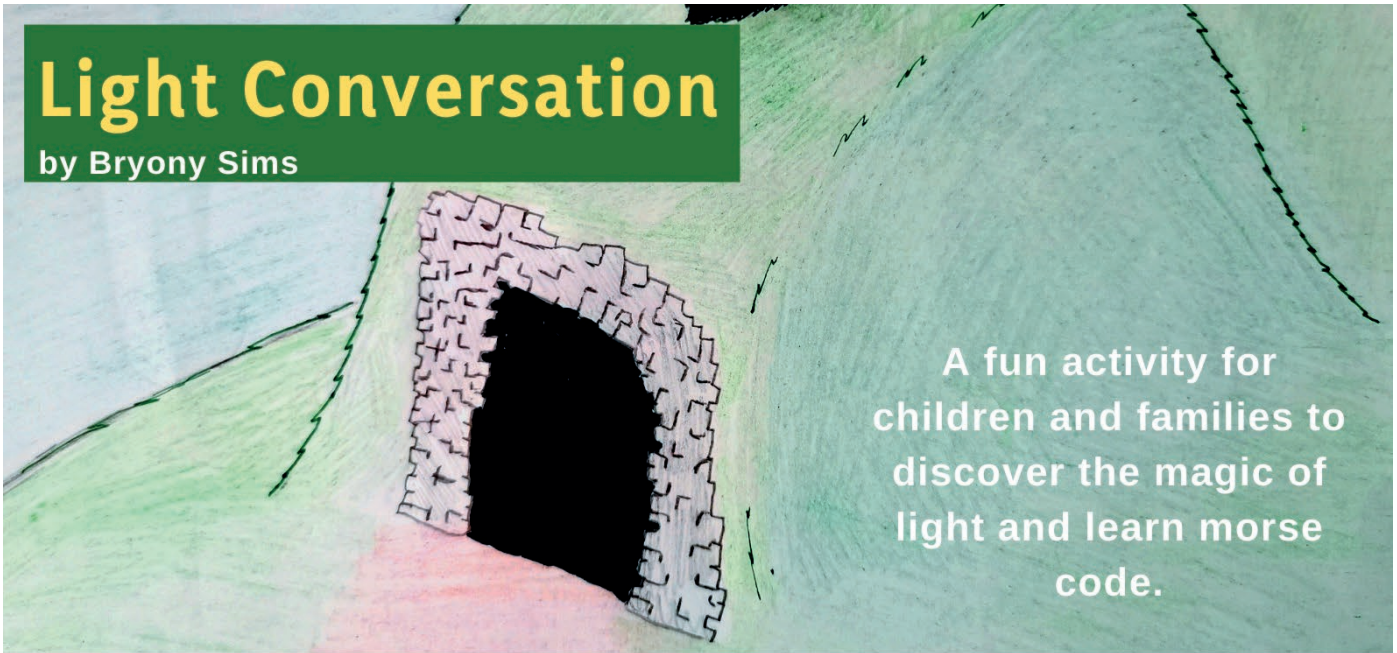
Square counters are introduced, letters numbers have been added. Additional white board for drawing. The possibilities of creating your own words, mathematic sums, picking even / odd numbers or selecting vowels / consonants.

The Abacus box with the checked pattern can be used for drawings, writing or even as a board game.

The new Abacus is the main tool for kids during early levels of education to help them develop important skills that will be the core for their future learning.



ANITA CRUICKSHANK T217



# Light Conversation

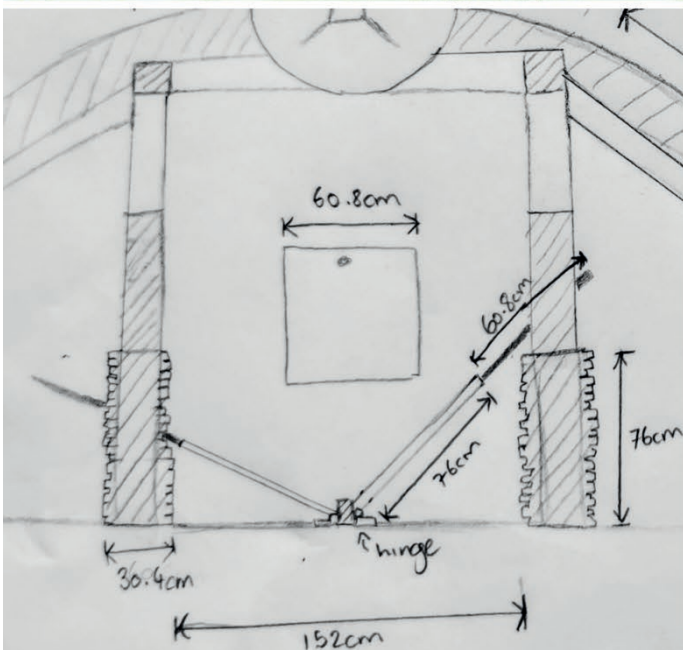
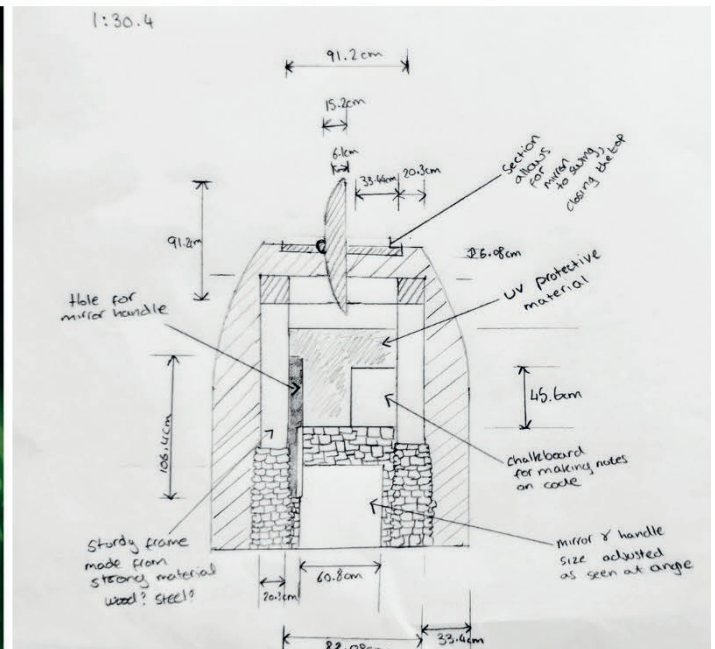
by Bryony Sims

A fun activity for children and families to discover the magic of light and learn morse code.

**Light Conversation** is a two player game of sending secret messages to each other using light reflections, then cracking the code.

Inspired by the heritage of the Ditchling Beacon and its use to warn of incoming invasions using fire, **Light Conversation** has reimagined this concept to provide educational entertainment to children.

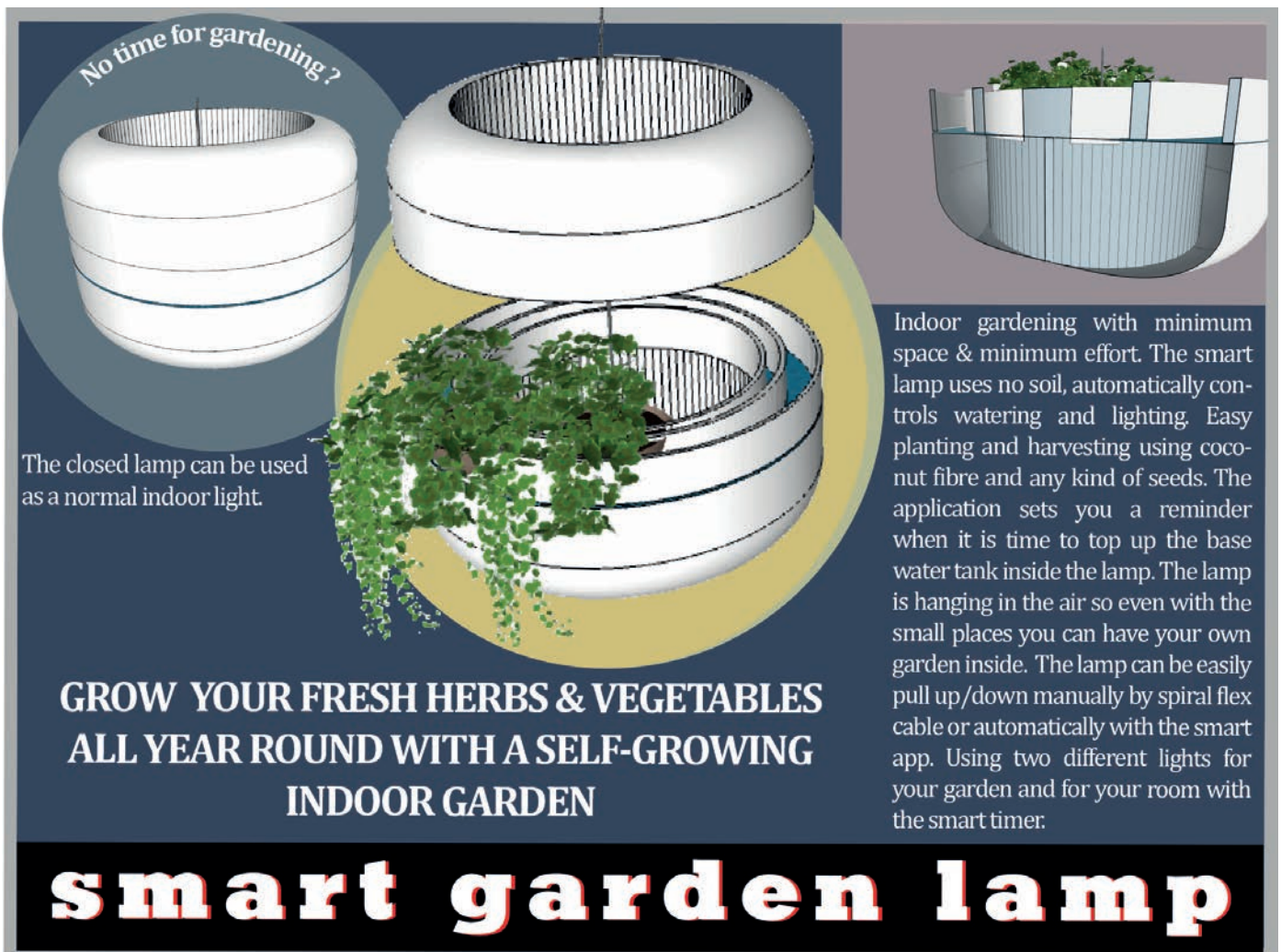
The design further draws on British history through being housed in a sustainable and resilient Long Barrow structure, adding value to the park without making aesthetic sacrifices.



**Light Conversation** gets children interested in history and nature, and helps with their school work. When playing the game, they will be noting down what they see, using problem solving skills to translate messages and planning messages back; valuable skills that parents want children to develop.

Resilience is at the forefront of the component design, its steel overlaid with earthenware structure benefits from a harmonised blend of ancient and modern building techniques to ensure a safe structure that is build to last.

**Light Conversation** is a great site for school trips and youth groups; lending itself to history, science, maths and even computer class! Morse code is a predecessor of modern coding languages so introducing children to it at an early age will help them to grasp more advanced codes in the future.



No time for gardening?

The closed lamp can be used as a normal indoor light.

**GROW YOUR FRESH HERBS & VEGETABLES  
ALL YEAR ROUND WITH A SELF-GROWING  
INDOOR GARDEN**

**smart garden lamp**

Indoor gardening with minimum space & minimum effort. The smart lamp uses no soil, automatically controls watering and lighting. Easy planting and harvesting using coconut fibre and any kind of seeds. The application sets you a reminder when it is time to top up the base water tank inside the lamp. The lamp is hanging in the air so even with the small places you can have your own garden inside. The lamp can be easily pull up/down manually by spiral flex cable or automatically with the smart app. Using two different lights for your garden and for your room with the smart timer.

# THE BEEHIVE KITCHEN

Personalising your space even in the smallest of kitchens

Juan Torres Q61 T217 2021



The aim of this project was to create an innovative solution for small kitchens that would adapt to the modern challenges that our societies face today, like kitchens getting smaller, people's focus to protect the environment and reducing the impact of food and waste, with some changes being introduced in the kitchen like refillable packing. As people spend more time in the kitchen, its a perfect time to introduce solutions to a hardly evolved market, that would create a more comfortable space for its users.

The solution I designed was "The Beehive Kitchen", a modular "Lego-like" kitchen storage solution that allows the user to adapt the space to its needs, using the nature-inspired honeycomb pattern of beehives, to create cabinets, work surfaces, shelves, etc. The honeycomb pattern makes it possible to increase the maximum usable space available on a wall, which makes it ideal for small kitchens.

The user can change the modules with ease adding or removing the pieces that come in different colours, shapes, textures, etc to a wall mounted grid specifically created to improve on space in the kitchen and create a personal space for the user that they can feel proud of.



As the modules could be easily produced out of injection moulded plastics, with the possibility of using modern recycled plastics, it provides the opportunity of creating a cradle-to-cradle system, in which, when the users are encouraged to recycle their modules (providing a discount on next purchase for example), that could incite them to try and buy different modules, but at the same time, have a smaller impact on the environment.

Having different modules means a more accessible kitchen. People might need cabinets at a lower height or in a place that is easier to reach, and some modules could be specifically designed for different accessibility needs.

By having modular design, the kitchen can quickly adapt to the market needs. If new solutions to reduce waste arrive, for example, a module could be designed to have specific dedicated space for reusable packaging, which could be cabinets with drawers for flour, rice, pasta etc.

Giving the user the choice to create their dream kitchen, invites them to be wildly creative, with endless possibilities yet to be discovered.



# Ditchling Beacon Nature Reserve

Connecting young people to the environment in a meaningful way

## Treasure Hunt

Discover the wildlife flora and fauna

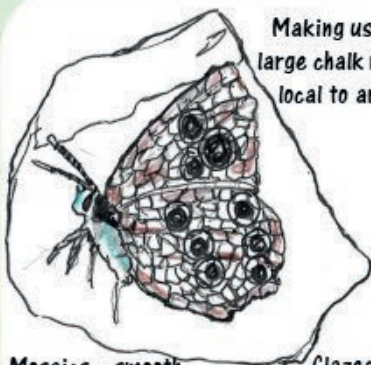
Have fun

Keep to the paths

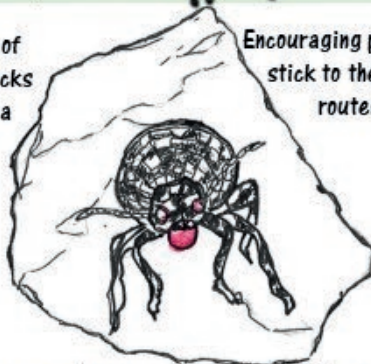
## Playful Engagement



Rocks with ceramic mosaics to be placed along the path route to provide a treasure hunt.



Making use of large chalk rocks local to area



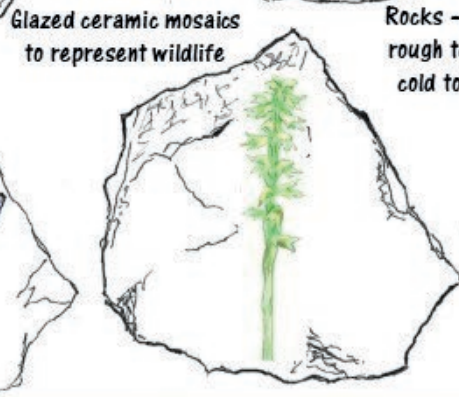
Encouraging people to stick to the path routes



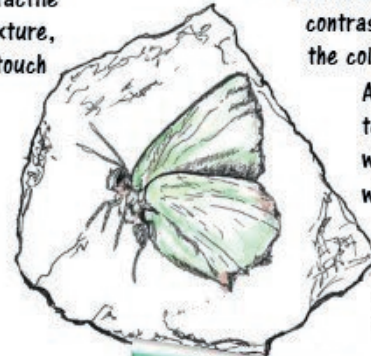
To help prevent erosion of the natural landscape by providing a guide & interest on walks along paths



Mosaics - smooth and shiny



Glazed ceramic mosaics to represent wildlife



Rocks - tactile rough texture, cold to touch

White chalk rocks provide a contrasting background to the colour of the mosaics

A fun activity while teaching about local wildlife & connecting with the environment

Mosaics can be redone or fixed if suffering damage, wear and tear or weathering

Engaging for a range of ages: Rocks, sculptural, a permanent presence - tactile and visual for younger children. Interest and competition of treasure hunt for older kids. Information for deeper understanding of surrounding wildlife and landscape for all. Sustainable use of natural, local materials.

### Treasure hunt sheet

- ❖ Laminated to protect from the elements.
- ❖ Easy to handle.
- ❖ Pay for the sheet at the visitor centre, profits going to conservation.
- ❖ The back of this sheet includes names of species, information and fun facts.



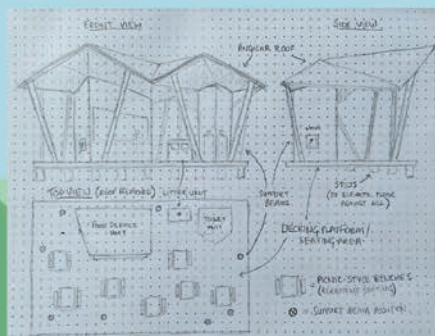
# The Ditchling Beacon Outdoor Cafe

**The Design Brief**

The Ditchling Beacon is a Sight of Special Scientific Interest located in the South Downs National Park, boasting 360 degree views of the surrounding hillside and home to hundreds of unique, rare plant and wildlife.

The National Trust asked for a refreshment facility near the site carpark to provide visitors and locals with food and drink that will generate income for the maintenance of the land.

I designed a small food service unit built onto open decking with shelter to make the most of the surrounding views while providing a place for visitors to stop and enjoy rest and refreshment.



|| The Concept Sketch ||

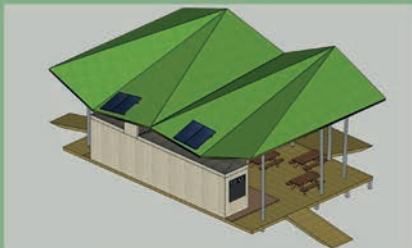
**Key Sustainability Features:**

- The structure has a Green Roof to promote natural growth and habitats for the surrounding plant and wildlife, making up for the lost area of ground due to building site.
- Triangular slopes off roof are a reflection of the irregularity and shapes of the surrounding hillside and extensive landscape.
- Downward-sloping rear to promote water run-off, open up the front of the seating area to the beautiful views and disguise the building from the viewpoint above.
- All timber sourced from a timber yard located just a few miles from the National Park.

**Key Visitor Features:**

- Wide ramp at front of decking for quick and easy access.
- Ramps at either side to suggest entrance and exit points.
- Following the entrance on left, the customer journey is simple; greeted with the menu on arrival, followed by the order window, moving next to the order collection point.
- After collecting their food there is a water tap to refill bottles and for thirsty dogs.
- Litter point with separate bins for different waste encourages proper recycling.
- And, of course, toilets!

|| The Final Design Proposal ||



by Kirsty Mason | H16933570 | T217



# The Sustainable House

A design proposal to playfully engage children with sustainability & conservation.



Lizy Bowie A8804388 T217 | Sustainable Design

Rare flower species will be painted on each side panel.



Climb



Swing



Slide

Sustainability is crucial for a variety of reasons, including the following: Environmental Quality - We need clean air, natural resources, and a nontoxic environment to have healthy communities. The sustainable house is built using sustainable materials and intends to pique people's interest in conservation and sustainability!

# Welcome To Ditchling Beacon Castle Refreshments



# T317 Innovation

**LABELS  
ARE FOR  
CLOTHES  
NOT  
PEOPLE**

# human size



A people focused sizing service that utilises customer data to suggest clothing selections tailored to individual preferences, removing reliance on inconsistent shop defined size labels. Humansize provides an accessible and inclusive solution that caters for every user.



## The Humansize App

Takes measurements.

User profiles store preferences for items, fit and favourite shops.

Humansize searches using measurements, size data and purchases by similar users, to return a selection of suitable clothing.

Displays items according to their fit, calculated by the Humansize algorithm, with links to retailers to purchase.

Scans clothing. Use in-store for size guidance or on current wardrobe to search for similar items.



Measurement	Value
Height (seated)	175
Chest	109
Waist	85
Hip	111
Neck	39
Shoulder span	44
Arm	83
Bicep	50
Sleeve length	75
Rise	73
Inseam	73



**CURRENT  
SIZING  
SYSTEMS  
DO NOT  
WORK**

# The PHEF-Carry

Making carrying shopping bags up stairs  
 Pocket-sized. Hands-free. Easy and Flexible



## What is the PHEF-Carry?

Designed to aid with carrying shopping bags up steps and stairs, the PHEF-Carry is a pocket-sized product comprising two magnetised devices with adjustable straps and a clip on each device. It can be worn on the body or on the shoulders, also perfect for a hands-free shopping experience!

## Features



Magnets for attaching the devices behind the back. A clip on each device for shopping bags



Adjustable 1.2m cotton straps with a button to control the length



Press studs to stop the straps rising towards the neck. Anti-slip rubber spots

## What problems does the PHEF-Carry solve and for who?

- No more scraping bags on stairs
- Improved posture and balance
- No more tripping over bags
- Hands-free for holding onto hand rails
- Aging generations
- Parents
- Shoppers
- Those with mobility or dexterity issues

## How do you use the PHEF-Carry?

Separate the devices



Pull straps and wear as desired. Clip bags on



Secure press stud on straps



Secure the magnets behind your back



Barry Coughlan  
PI no. FA601942

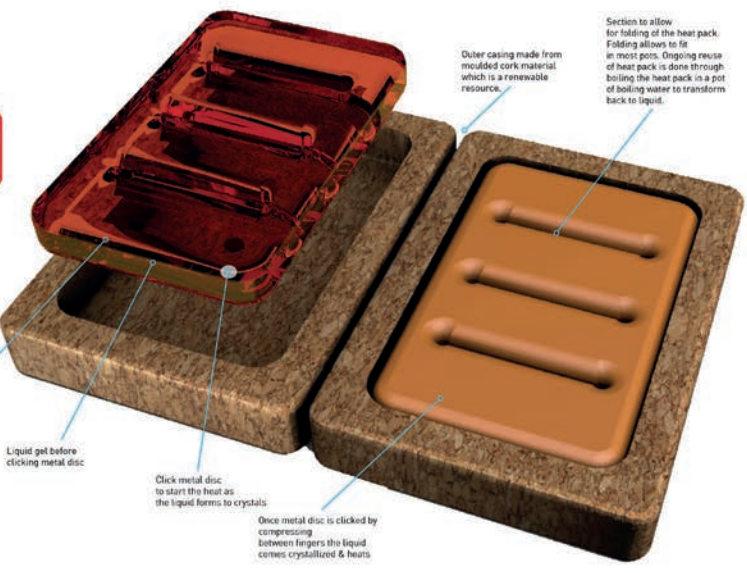


Product branding "Foot Rad" short for Foot Radiator. The logo composition is a foot sinking into a warm heat pack.



Warm colour palette to evoke warmth under foot. The cork material gives the product a natural look.

Heat pack with click heat Technology. Heated packs are reusable. Once boiled in water it turns back to it's liquid form, ready to be used over & over again.



Duber casing made from moulded cork material which is a renewable resource.

Section to allow for folding of the heat pack. Folding allows to fit in most pens. Ongoing reuse of heat pack is done through boiling the heat pack in a pot of boiling water to transform back to liquid.

Liquid gel before clicking metal disc

Click metal disc to start the heat as the liquid forms to crystals.

Once metal disc is clicked by compressing between fingers the liquid comes crystallized & heats

Open water Winter swimming has so many great physiological and psychological benefits and is free and accessible to anybody. But there are some potential safety issues associated with cold water exposure. It is so important to warm up after swimming. Your feet are already cold from swimming and are then in direct contact with various freezing cold surfaces that you encounter whilst changing after a swim.

FootRAD heated changing mat elevates your feet off the freezing surfaces creating a barrier between you and the cold. It also gently warms your feet with the activation of the Click Heat gel pack which crystallizes to create heat. The gel pack is reusable by heating in boiling water to bring the pack back to it's liquid gel form.

Original concept



Prototypes



Click Heat baby bottle warmer gel pack used for prototype. [www.clickheat.eu](http://www.clickheat.eu)

3D Visual Concept



Bringing a warm touch to winter open water swimming, click and enjoy the heat on your feet as you change.

3D Visual Concept

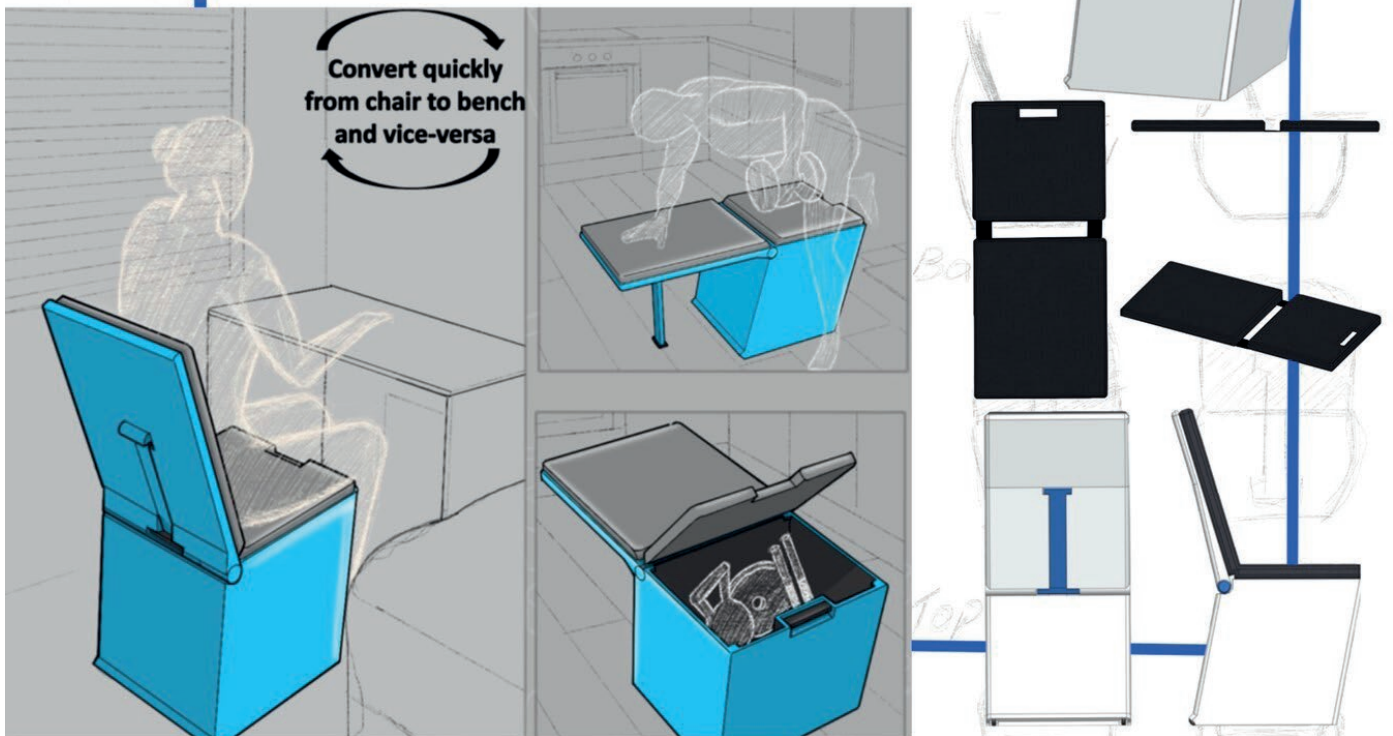


3D Visual Concept



# Storebench

The space saving workout bench

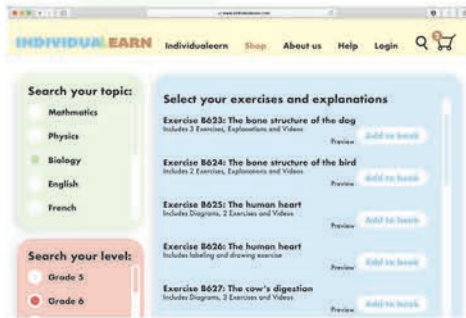


# INDIVIDUAL LEARN

The tutoring book, which can be assembled individually and directly to your child's needs!

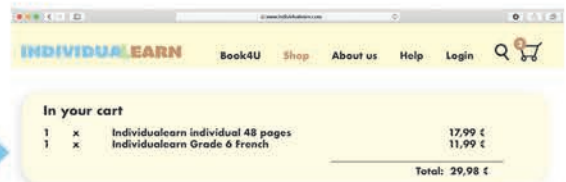
### Step 1:

Search through a variety of exercises and explanations on different topics. Select the one which you would like in your book. Or get a pre-assembled one!



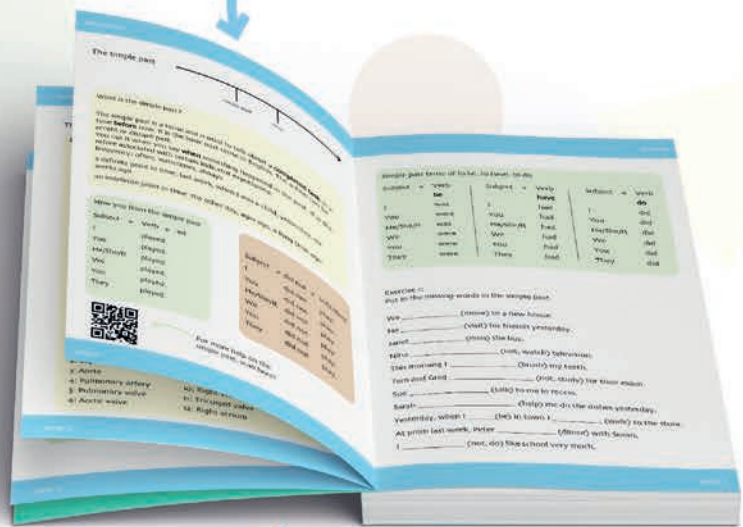
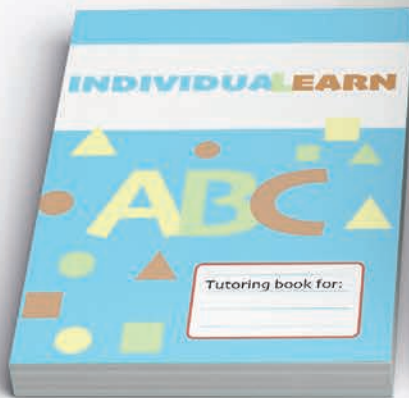
### Step 2:

Order your book with all the selected topics and exercises.



### Step 3:

Now your child can learn the topics in which it needs some extra help in. For further help and explanations, scan the QR code on the page which leads you to our online learning site. There you get extra video explanations and exercises with immediate feedback

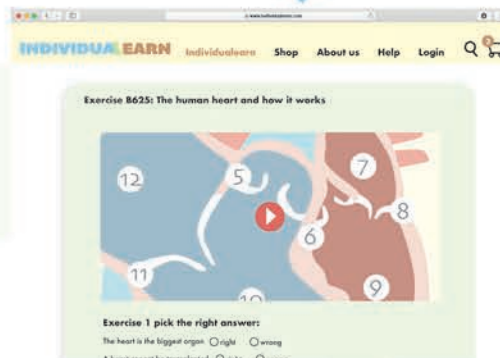


### Why Individuallearn?

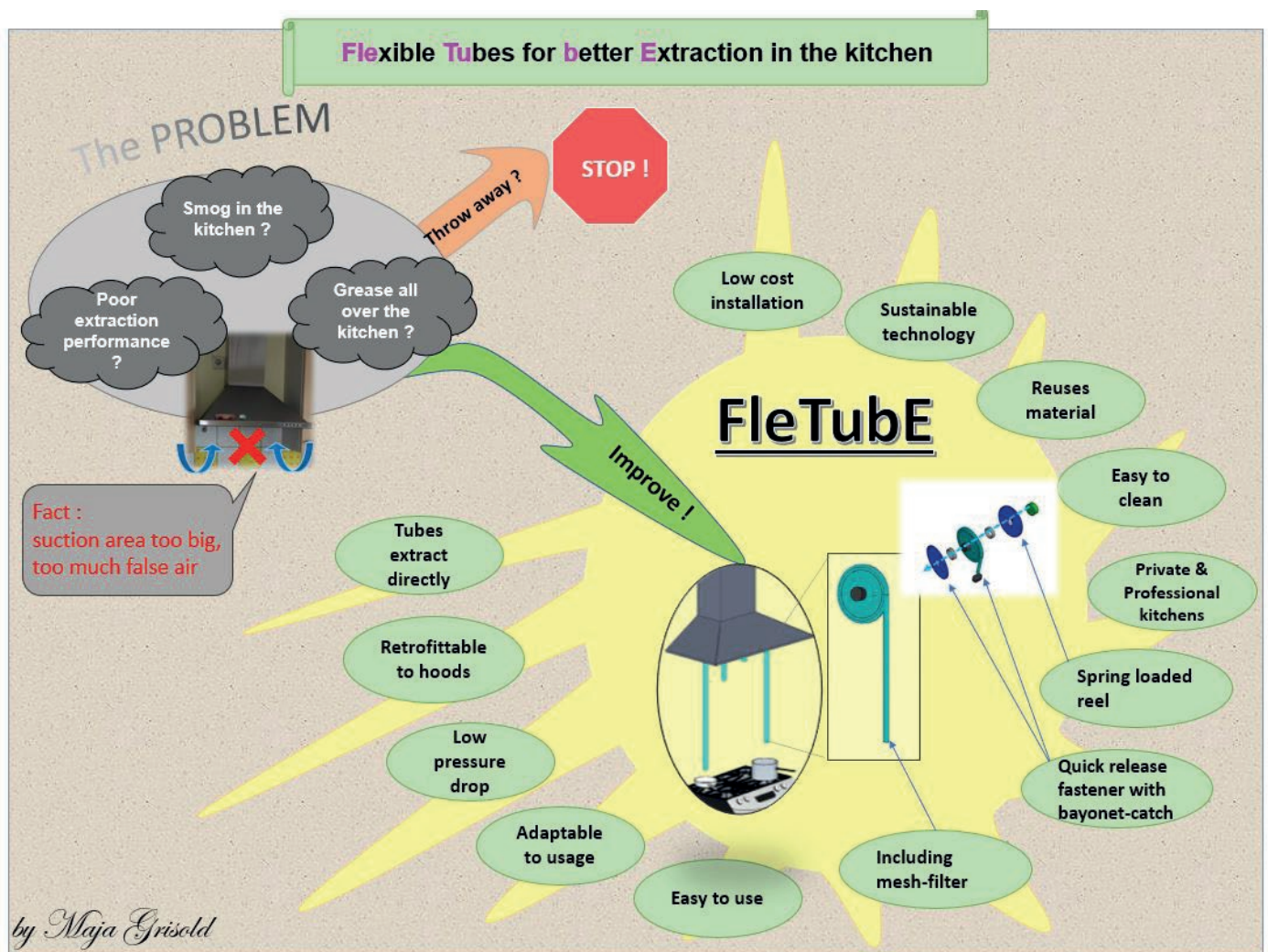
Individuallearn is designed for children who need extra help learning. The book's content is custom-made and can be selected from a variety of exercises, topics and levels. For additional help scan the QR code on the page which leads to the webplatform. There are further exercises and videos with immediate feedback to learn with. Individuallearn is made from recycled paper and is available in every country. Individual for everybody!

### Step 4:

Get visual and audio input from our webplatform. There you can watch videos and get immediate feedback from interactive exercises.







### HOW IT WORKS

The pressure sensor in the insole is located beneath the ball of the foot to promote proper running form.

The sensors detect the impact forces of each step and send the information to a microcontroller unit (MCU) located in the arch of the insole, which then transmits it via Bluetooth.

Because the information is contained within the insole, the Smart Insole is compatible with virtually any running shoe.

The Smart Insole is an easy to use, affordable and environmentally friendly addition to your running wardrobe.

### HOW CAN IT HELP YOU?

The Smart Insole can detect the foot pressure distribution and movement of CoP (centre of pressure) in real-time.

The Smart Insole will provide athletes, soldiers, physicians and therapists with a relative advantage when evaluating foot information through digitalised visualisation in order to build a new standard of rehabilitation treatment and injury prevention.

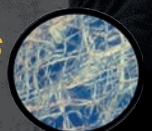
The smart insole solution is a low-cost solution of evaluating patients and providing a better and intelligent solution that can be used in hospitals, rehabilitation centres, and military applications.



## INTRODUCING THE SMART INSOLE



### TECHNOLOGIES IMPLEMENTED:



Sustainable merino wool textile insole sensors



Intelligent microcontroller for accuracy



Adaptive energy control and wireless charging

Smart Insole transmits information via Bluetooth to a Smart Insole app for digitalised visualisation.



The Smart Insole is made with eco-friendly natural materials like merino wool and eucalyptus trees because they are our best hope for a sustainable future.



### FEATURES



STUDENT: PATIENCE ALI

### PAT TROLLEY

This project aims to design a modular product that the user owns, taken out from the car to the shop, back to the car and straight into the house with the least effort when lifting or storing. The trolley will be lightweight, with adjustable height, collapsible and easy to store in the car, and should hold at least 60 kilograms of shopping and fit into the boot space of 300 litres. The trolley design to expedite the whole shopping process, eliminate the need to obtain, sanitise, and return a store owned shopping trolley. The design integrates innovative technology, compatible with IoT, integration capabilities with new Amazon till less shopping.

**PAT TROLLEY**  
**THE SMART MULTIPURPOSE FOLDABLE TROLLEY**

Light Weight  
Adjustable Height  
Smart display screen

No more heavy lifting, loading and unloading.  
Transport Shopping From The Store & Straight Into The House.

*YOU OWN THE TROLLEY!*